GAS LEAKAGE THROUGH WALL SEAMS OF BOLTED-METAL BINS

BY

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in partial fulfilment of the

requirements for the degree of

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MALGORZATA LUKASIEWICZ

A Thesis/Practicum submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements for the degree of

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Dedicated to

my Parents

Krystyna i Tomasz

Marszalek

ABSTRACT

To obtain adequate insect control, the controlled atmosphere (CA) gases should be injected into the storage at the optimum temperature, moisture content, and concentration; and they should be distributed uniformly and maintained for the required exposure time. The leakage of carbon dioxide (CO_2) from a bin is the main problem, which hinders the achievement of adequate insect control.

I quantified the CO_2 leakage from bolted-metal bins by determining pressure decay times, and CO_2 retention rates from a sealed container with section of a bolted seam. Samples of vertical and horizontal seams of a typical grain bin were tested with different methods of sealing and a range of initial CO_2 concentrations.

Caulking significantly reduced the leakage of CO_2. The sealing performance of the two methods of sealing of the vertical seams, using single or double row-type Westeel butyl caulking, was similar, but it was significantly different from the sealing of the horizontal seams where no caulking was applied. The pressure decay time to one-half the initial pressure was not affected by the initial CO_2 concentration in the bin, but the CO_2 concentration decay from the bin highly depended on it. The CO_2 retention coefficient was lower for higher concentrations. The presence of grain in the bin affected both the pressure decay times as well as the CO_2 retention in the bin. The pressure decay times were shorter in the bin filled with grain than in the empty bin. Also the CO_2 retention coefficients were lower in the bin filled with grain than in the empty bin. This may have been caused by sorption of CO_2 by the grain. The relationship between the

pressure decay time to the half level and the CO_2 retention after 24 h was determined.

The effectiveness of an additional protective coating obtained by covering the seams with a flexible membrane resin was not significant when other caulking was previously applied but was reasonable when no caulking was used.

The experimental data obtained from this study can be used as input data for existing or newly developed mathematical models of CO_2 leakage from bolted-metal bins.

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(no caulking with additional protective coating).
Means of the six sampling ports.. ..... C23

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and bin filled with wheat at 11.8% m.c.. ..... D2

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in the 120-h test for purging time 60 min and bin filled
with wheat at 11.8% m.c. D2

Table D.3-1 Measured carbon dioxide concentrations (%) at six locations in the bin
for sample 3 (no caulking) in the 120-h test for purging time 60 min
and bin filled with wheat at 11.8% m.c.. ..... D3

Table D.3-2 The retention coefficients (%) for sample 3 (no caulking)
in the 120-h test for purging time 60 min and bin filled
with wheat at 11.8% m.c. D3

LIST OF SYMBOLS

G01-0 test conducted in the bin filled with grain, for sample 0 in replicate 1, at CO_2 concentration corresponding to 0 min purging time

E34-30 test conducted in the empty bin, for sample 3 in replicate 4, at CO_2 concentration corresponding to 30 min purging time

Y_{ijk} pressure decay time to half level (min)

μ mean value of pressure decay time to half level (min)

S_i effect of the ith method of sealing

C_j effect of the jth initial CO_2 concentration

G_k effect of the kth level of the grain presence in the bin

ε_{ijk} random error associated with the experimental unit

$\eta_{retention}$ coefficient of CO_2 retention or amount of CO_2 remaining in the bin after 24 h as a percentage of initial concentration (%),

C_{24h} CO_2 concentration after 24 h (%)

C_{0h} initial CO_2 concentration (%)

1. INTRODUCTION

Controlled atmosphere (CA) storage is a potential, alternative to fumigation, method of insect control (Banks and Annis 1977). In the CA treatment, the intergranular gas composition in a grain bulk is altered by injecting either carbon dioxide (CO_2) to create high-CO_2 atmospheres, or nitrogen (N_2) to create low-oxygen (O_2) atmospheres lethal to stored-product pests (Banks and Annis 1977).

The objective of the CA treatment is to kill all insects and mites with the minimal use of gases in the shortest time. The CA gases may cause additional effects on the stored-grain ecosystem. For example, altered atmospheric composition limits fungal growth, but does not reduce grain germination.

To obtain adequate insect control, the CA gases should be injected into the storage at the optimum temperature, moisture content, and concentration; and they should be distributed uniformly and maintained for the required exposure time. The leakage of CO_2 from the bin is the main obstacle, which hinders the achievement of these purposes. There are generally two ways to manage this problem: first to seal structures, second to optimise the CA technology by predicting the CA-gas losses.

In this study, I wanted to quantify the CO_2 leakage from storage structures as influenced by different factors crucial for the CA treatment.

2. OBJECTIVES

Experiments were conducted to quantify the CO_2 leakage from storage structures by determining the pressure decay times, and the CO_2 retention rates for a unit of the seam of the bolted-metal bins for different methods of sealing and different initial CO_2 concentrations in the bin filled with grain and in the empty bin. Bin openings were represented by samples of vertical and horizontal seams of a typical grain bin.

The objectives of this study were:

1. to determine the time for the gauge pressure to decay to one-half the initial pressure of 2.5 kPa,

2. to determine the CO_2 retention rates of the bin, and

3. to determine the relationship between the decay times and the CO_2 retention coefficients.

3. LITERATURE REVIEW

3.1 Effectiveness of CA for controlling stored-product pests

To successfully achieve CA treatment objectives, several conditions should be fulfilled. Some of them depend on environmental factors while others can be controlled. Effectiveness of CA for controlling various stored-product pests depends on the temperature and moisture content of the grain, species and life stages of pests, gaseous composition, and exposure time of the CA treatment. The latter two are controllable factors while the others are non-controllable.

For CA treatment to be effective, it should be done when the average grain

temperature is high (>20° C). At temperatures higher than 20°C, the molecular activity of the gas is high, diffusion and penetration are faster and sorption of CO_2 by grain is less than at low temperatures (Cofie-Agblor et al. 1992). Also, insects are more active, and more susceptible to controlled atmospheres.

The maximum moisture content in a stored grain bulk should be considered in deciding the duration of application of CA treatment for an effective control of insects (Navarro and Calderon 1980). As moisture content increases kernels sorb more CO_2 (Yamamoto and Mitsuda 1980), therefore higher dosages of the CA gases are needed and longer exposure times are required for high moisture grain than for low moisture grain. In dry grain the low relative humidity increases water loss and desiccation of insects when their spiracles open in response to low O_2 or high CO_2 (Jay et al. 1971; Nicholas and Sillans 1989).

Selection of an appropriate gaseous composition that is lethal to the stored-product insects is essential. Different insects require different atmospheres for their control. Generally, it is recognized that O_2 concentration should be depleted below 1% or CO_2 concentration should be raised above 20%, and in the latter case, however, the effect is expected to take several weeks. For instance, 4-6 wk were required for effective control of the rusty grain beetle, *Cryptolestes ferrugineus* (Stephens), when the CO_2 level was 20% (White et al. 1990). The CO_2 concentrations higher than 60% are lethal to insects in 4-10 d. Rameshbabu et al. (1991) observed complete kill of *C. ferrugineus* in 4 d in 88-92% CO_2 atmospheres. Based on a review of 70-years of literature (1900-1970) Annis (1986) stated that the majority of species showed 95% or greater mortality in less

than 10 d at CO_2 levels of 40 to 60% at an optimum temperature range 20-29°C. Only the red flour beetle, *Tribolium castaneum* (Herbst), and the khapra beetle, *Trogoderma granarium* (Everts), required more than 10 d. Declines in CO_2 concentration during treatment occur in non-airtight structures, but even under such conditions 95% mortality can be obtained in 15 d when concentrations decline from 70 to 35%. Also, CO_2 concentrations of 60±10%, even down to 35% give a good control of insects in stored grain (Jay 1980).

Exposure time is highly related to the gas concentrations. For a particular atmospheric composition, there is a linear increase in the mortality of *C. ferrugineus* adults and eggs with an increase in exposure time (Rameshbabu et al. 1991). The minimum exposure time to effectively control this insect is 4 d with a CO_2 concentration greater than 70% under warm conditions (>20°C) (Banks and Annis 1977). The Australian recommendation for the control of stored-product insects is the maintenance of a CO_2 concentration of more than 35% for a period of 10 to 14 d (Barry 1984).

The mortality of *C. ferrugineus* and other insects increases with an increase in exposure time for the particular atmospheric composition, but the minimum required exposure time should be decided based on the minimum temperature and maximum moisture content in a large grain bulk (Banks and Annis 1977; Navarro and Calderon 1980).

Although low-O_2 in N_2 or air atmospheres have been found to be effective in controlling stored-product pests (Bailey and Banks 1980; Shejbal et al. 1973), a high-CO_2 atmosphere is a better alternative because nearly complete elimination of O_2 is not

necessary (White and Jayas 1993), and it causes not only simple suffocation, but also desiccation of insects (Nicholas and Sillans 1989). Moreover creating and maintaining low-O_2 atmosphere is more difficult and uneconomical in non-airtight structures (Jay 1980).

Carbon dioxide is a colourless and odourless gas with density 1.47 times greater than air. Density of CO_2 is 1.963 kg/m^3, and density of air is 1.334 kg/m^3 at standard temperature and pressure. The CO_2 does not leave chemical residues in food. It can be easily used in all possible forms: as gas, liquid, or solid. It is also less likely of produce highly resistant insects.

3.2 Leakage of CO_2 from the storage bins

3.2.1 Transport phenomena which govern the CO_2 movement in the bins

Leakage of the CA gases from the bins is one of the most significant problems in CA fumigation. If the CA gases leak out before uniform distribution is obtained and the necessary exposure time has elapsed, the treatment will be ineffective (Alagusundaram 1993). The maintenance of the desirable composition, uniformly distributed for the required time depends, to a major extent, on the level of leakage. Transport phenomena, which govern the CO_2 movement in the grain mass and influence the uniform distribution and retention of CA gas inside the bin are: diffusion (Singh et al. 1983; Jayas et al. 1988); natural convection (Bond et al. 1977; Navarro et al. 1986; Bundus et al. 1996; Peck 1994); adsorption and desorption by grain (Yamamoto and Mitsuda 1980; Cofie-Agblor et al. 1992); respiration of the grain, insects, and microorganisms (Sinha et al. 1986;

White et al. 1982); and forced distribution, when fans are used for the treatment.

In the absence of pressure gradients, the movement of introduced gases through the grain bulk is mainly due to molecular diffusion caused by concentration gradients. The diffusion coefficient of gases through bulk grain is about 1/3 of the diffusion coefficient of gases in air (Henderson and Oxley 1944; Bailey 1959; Haugh and Isacs 1967). Singh et al. (1984) studied the effects of flow direction, grain bulk porosity, grain moisture content, and temperature on the diffusion coefficient of CO_2 through wheat, rapeseed, corn, and oats. They found quadratic relationship between diffusion coefficient of CO_2 and temperature. There was no significant difference in the diffusion coefficient of CO_2 through wheat and rapeseed for the three flow directions (horizontal, vertically upward, vertically downward), but in the case of CO_2 movement in the air, the diffusion coefficient was higher in the downward direction than in the other two directions. Guiffre and Segal (1984) stated that the CO_2 molecules being heavier than the molecules of N_2 or O_2 settle to the bottom portion of the grain bulk creating higher concentrations there.

Gas losses from the grain bins depend mainly on convective flows that exist in the grain bulk. A convective flow may be caused by several uncontrollable external factors: wind, temperature variations, barometric pressure fluctuations, and chimney effects (Banks and Annis 1984). These factors create pressure drops across the wall of the bin and act as driving forces for the exchange of internal gases with the external ambient air through any existing leaks in the wall (Sherman et al. 1980). If a bin contains cracks or holes in the walls, the CA gases will leak out of the bin and will subsequently be replaced by infiltrating ambient air. Also, when a CO_2 concentration gradient across the wall

exists, CO_2 diffusion through the existing leaks toward the lower concentration takes place.

3.2.2 Criteria for airtightness In Australia most of the grain storage structures are 'airtight'. What does it mean by 'airtight'? It means that they meet pressurization test criterion. A structure is regarded as satisfactorily sealed, if a structure has half life time of 5 min for applied excessive pressure to drop from 2500 to 1250 Pa, 1500 to 750 Pa, or 500 to 250 Pa (Banks and Annis 1984). In Western Australia, a pressure test specification is written into contracts for construction of sealed grain storages or sealing of existing structures (Ripp 1984). Ripp (1984) reports that a contract for sealing specified that the shed be sealed to a level such that, when full, an applied excess pressure of 200 Pa would decay to 100 Pa in not less than 30 min under stable conditions. For a 25 000-t horizontal storage the established criterion for well sealing was that the pressure decayed from 200 to 100 Pa in not less than 15 min (Barry 1984). There were attempts made in getting a standard on pressure decay test, but first it should be decided that how many fumigation failures can be tolerated, then it is possible to go for very stringent standard of gas tightness and specification for different types and sizes of storage structures (Calverley 1984).

The on-farm storage bins in Canada are not airtight (White et al. 1990). In North America, two thirds of all grain storage facilities are bolted galvanized-steel bins which contain many leaks and do not meet the Australian pressurization guideline (McGaughey and Akins 1989). Sealing these farm bins to make them airtight will interfere with the natural ventilation that helps in reducing temperature gradients and the moisture

migration that may occur in large grain bulks (McGaughey and Akins 1989).

Even in well-sealed (to a level giving a 5 min pressure decay time for the pressure drop from 500 to 250 Pa) bins, gas losses are present (Banks and Annis 1984). Banks and Annis (1984) divided the effects of different forces causing these losses into two groups: the leak-dependent (wind, chimney effect, diffusion), and the leak-independent (temperature and barometric pressure fluctuations). The maximum contribution to the ventilation rate (d^{-1}) of each individual phenomenon causing gas loss from the bin is given in Table 3.1 (Banks and Annis 1984).

Table 3.1 Ventilation rates (d^{-1}) for a bin (5-t capacity) calculated for individual phenomenon for a sealing level giving a 5 min pressure decay time (500 - 250 Pa) (Banks and Annis 1984).

Phenomenon	Ventilation rate* (d^{-1})
Leak-independent components:	
- Temperature variation 10-40°C	0.025
- Short term temperature fluctuations in head space	0.034
- Barometric pressure variation	0.006
Leak-dependent components:	
- Steady wind 6.4 m/s	0.041
- Wind pulsation	0.008
- Chimney effect	0.01
- Diffusion	0.001
Total	0.125

*Ventilation rate is a measure of loss rate of a gaseous component from a system. It is the portion of the inside gas volume exchanged with the outside air in a day (d^{-1}).

Table 3.2 Ventilation rates (d^{-1}) tolerable in CA processes (Banks and Annis 1984).

CA process	Ventilation rate (d^{-1})
Hermetic storage	0.026
N_2 - based CA (long-term exposure)	0.05
CO_2 - based CA	0.07
Phosphine fumigation	0.10

The ventilation rates for both leak-independent, and leak-dependent components are quite similar, 0.065 d^{-1} and 0.06 d^{-1}, respectively. Although the total value of 0.125 d^{-1} is comparable with ventilation rates tolerable in the controlled atmosphere processes (Banks and Annis 1984), it is still too large even for phosphine fumigation (Table 3.2). It appears unlikely, that the gas loss rate in storage structures can be reduced to a level which would permit hermetic storage without very efficient sealing (Table 3.2). Moreover, the contribution to gas loss from leak-independent components cannot be reduced by sealing. It must be done by some other strategy, like reduction of temperature variations by thermal insulation, and use of breather bag systems (Banks and Annis 1984). The relative importance of leak-dependent and leak-independent interchange rates varies with type of storage structure. Banks and Annis (1984) concluded that a single pressure decay test to cover all storage structures is inappropriate. It should be set to meet the needs of particular storage types and environmental circumstances.

3.2.3 Sealing of bins There is no ideal solution for the leakage of CO_2 from the bins. The sealing of the structures is one way, but as it has been stated above, it is not a

totally effective method. Woodcock (1984) lists following criteria for the sealing systems which will make sealing very expensive:

a) must be flexible and able to bridge and seal gaps up to 2 mm; b) must withstand broad range of temperatures; c) must have good adhesion; d) must be suitable for use with foodstuffs; e) must not creep or perish; f) must be ultra violet (UV) radiation resistant; g) must have good abrasion resistance; h) must be stable to fumigants; and i) must have at least 10 year working life.

For the sealing of the storage structures polyurethane foam (foamed in situ), acrylic resin, bituminous primer (e.g. Eubit-Plast, VAT Baustofftechnik, Hamburg, Germany), polychloroprene coating (e.g. Wastolan-A, VAT Baustofftechnik, Hamburg, Germany) or polymeric vinyl membrane (e.g. Envelon 441,Dominion Plastics Industries, Shepparton, Victoria, Australia) are most commonly used (Sutherland and Thomas 1984). Sealing method depends on the design of storage structures. Design changes to assist sealing after construction are very often necessary as well (Ellis 1984).

3.2.4 Optimization of the CA technology Another possible solution for avoiding CA-fumigation failures and obtaining high effectiveness of the treatments is the optimization of the CA technology. An understanding of the distribution and loss of CA gases in non-airtight bins should assist in efficient design and successful application of the CA storage for control of pests in grain stored in such bins (Alagusundaram 1993). There is a recommended method of application with compensation for any gas loss during fumigation. McGaughey and Akins (1989) successfully carried out a two stage

process for controlling insects in leaky grain bins. The initial stage purges the bin to the required CA composition. The second stage is the maintenance stage which compensates for any gas loss that occurs during the required exposure time. Currently the only method of quantifying the loss rate of CA gases is by continuous monitoring of the gas concentration. It is not practical to measure concentration decay under the field conditions.

The potential solution is to predict what losses are expected under particular environmental conditions for any bin (Peck 1994). From these predictions, guidelines for compensation of the CA-gas losses could be developed. Mathematical models may be used for predicting the loss of CA gases from the bins. It is essential to collect the experimental data for validating the mathematical models and for understanding the distribution of gases in the grain bulks and loss of gases from grain bins.

3.3 Mathematical models

To mathematically describe the movement of gases in stored-grain bulks, an axisymmetric finite element model for predicting the CO_2 diffusion (Singh et al. 1983, Jayas et al. 1988) and a three dimensional model for predicting the distribution of CO_2 in a stored-wheat bulk (Alagusundaram et al.1996) have been developed. Alagusundaram et al. (1996) assumed the bin wall to be impermeable to the flow of CO_2 gas. Singh et al. (1983) assumed the bin wall to be infinitely permeable to CO_2, or impermeable to CO_2. These two extreme cases could occur in the field depending on the amount of leakage through the bin wall. Probably most steel bins would be somewhere between the two

extremes. The rates of diffusion of CO_2 through bin walls was not known, therefore the two extreme possibilities were considered.

Peck (1994) studied the loss of CA gases through walls of bolted metal bins caused by wind, temperature, and chimney effect. He evaluated two mathematical models from literature: Lawerance Berkeley Laboratory (LBL) model (Sherman 1987), and Banks and Annis (BA) model (Banks and Annis 1984) for their capability in predicting gas loss from a pilot bin (1.42 m diameter x 1.47 m height) and a full size bin (5.56 m diameter x 6.60 m height). Experimental tests were conducted to provide validation data for the model. The effective leakage area (ELA) of the bin, needed in a power law function in the LBL model for predicting air leakage from buildings, were determined using fan pressurization tests. Accurate determination of the ELA of a structure was paramount in using the mathematical models to predict the loss of CA gases from an enclosure.

His work indicates that neither the LBL nor the BA model predicted the loss of CO_2 from bolted metal bins caused by wind, temperature, and chimney effects with desired accuracy. The LBL model over predicted the wind effect by an average of 58 times compared to average rate of the experimental gas loss. In addition to other factors, overestimation of the ELA could cause significant differences between predicted and experimental data. There is a need for accurate experimental data on gas loss through the leaks in bolted metal bins, which would serve as input data for the mathematical models.

3.4 Summary

I have presented one of the most significant problems of the controlled atmosphere storage. To obtain adequate insect control, the CA-gas should be injected to the storage at optimum temperatures, moisture content and concentration, and it should be distributed uniformly, and maintained for the required exposure time. The leakage of CO_2 from the bins is the main obstacle to practical implementation of the CA technology.

There are generally two ways to manage the leakage problem: first to seal structures, second to optimise the CA technology. The CA technology may be optimised and CA treatment failures may be reduced without resorting to unnecessarily high standards of sealing and often costly modifications to storages if the CA-gas losses can be predicted using mathematical models. Therefore, my research was concentrated to enhance the understanding of gas loss from vertical and horizontal joints in a typical farm bin because most of the farm bins are assembled by bolting sections of galvanized steel (Fig.3.1).

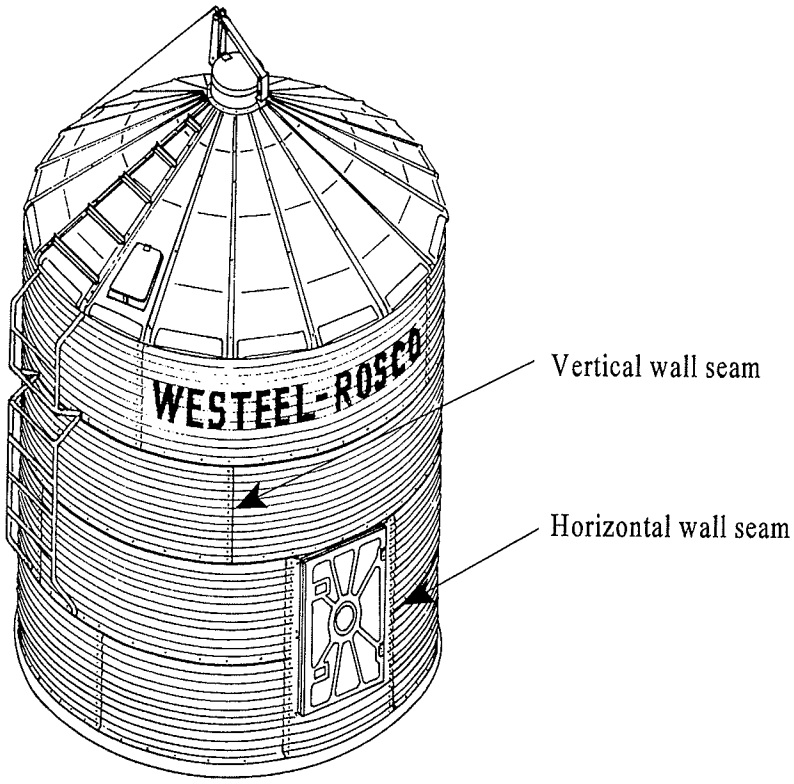


Figure 3.1 Typical bolted-metal farm bin.

4. MATERIALS AND METHODS

4.1 Experimental design

The experiments were conducted to determine the influence of the sealing methods of wall seams, the initial concentrations of CO_2, and the presence of grain in the bin on the gauge pressure decay time, and the CO_2 retention coefficient. The experimental design was Completely Randomized Design (CRD).

The treatment structure in this experiment was a 3-way factorial with the factors as follows:

- sealing method (3 levels + control):

  - sample 0 (control) - without any seam;
  - sample 1 - vertical seam with 2 row caulking;
  - sample 2 - vertical seam with 1 row caulking;
  - sample 3 - horizontal seam without caulking;

- initial CO_2 concentration (3 levels + control) created by the various purging times of the compressed CO_2 from the tank into the bin:

  - 0% - control;
  - about 15% (corresponding to 15 min purging time);
  - about 30% (corresponding to 30 min purging time);
  - about 60% (corresponding to 60 min purging time);

- grain presence in the bin (2 levels):

  - bin filled with wheat;
  - bin empty.

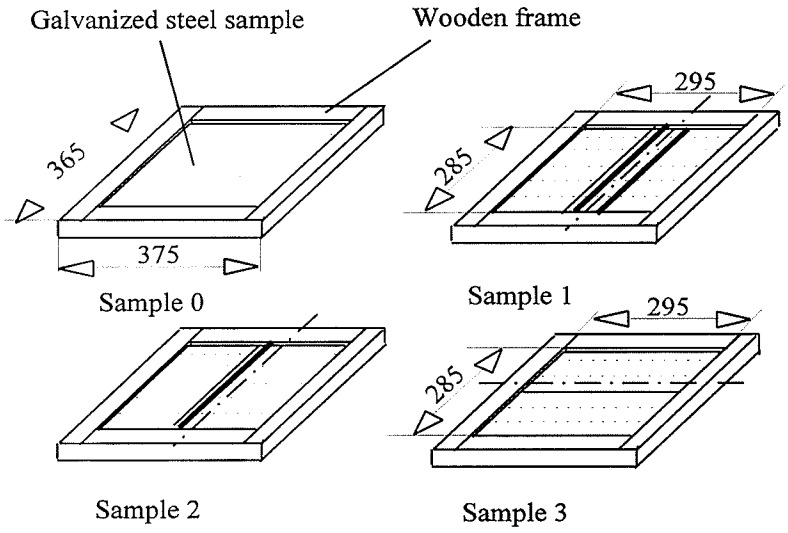
4.2 Samples, experimental set up, and procedure

4.2.1 Samples of the seams Four types of seams representing different methods of sealing of typical joints in bolted-metal bin walls were prepared for testing (Fig.4.1):

sample 0 - control sample without any seam, sample 1 - sample from the vertical seam (285 mm long) with double row-type Westeel butyl caulking, sample 2 - sample from the vertical seam (285 mm long) with single row-type Westeel butyl caulking, and sample 3 - sample from the horizontal seam (295 mm long) without caulking. Four replicate samples were used for each seam. For the samples 1 and 2, the joints were tightened with 5 bolts spaced 65 mm apart. For the sample 3, the joint was tightened with 2 bolts spaced 250 mm apart. The torque applied on every bolt was 24 N•m according to recommendations of a local manufacturer (Westeel, Winnipeg). The metal samples were framed with wood. The wooden frames were bolted using 12 bolts to the top of the test bin. The silicone was applied to the junction between the frame and the bin prior to tightening of the bolts. Additional silicone was applied to the joints around the tightened frame and to all exposed surface of the frame.

4.2.2 Experimental setup The model bin was a covered steel barrel (oil drum) 0.585 m in diameter and 0.870 m tall (Fig.4.2). The bin was filled with 160 kg of Canadian hard red spring wheat, cultivar 'Katepwa', graded No.1 by the Canadian Grain Commission. The wheat had 0.5% dockage by mass and 11.8% moisture content (m.c.) (on a wet mass basis). The bin was filled manually by pouring the wheat from buckets. The bin was placed on 0.5 m high platform to ensure gravity unloading of the grain.

The bin was connected through a flowmeter (Series 50, Advanced Specialty Gas Equipment Corp., South Plainfield, NJ) to the compressed CO_2 tank to create desired initial CO_2 concentrations inside the bin. The flowmeter was adjusted to give a constant flow rate of 2.44 L/min of CO_2.



All dimensions are in mm.

Fig. 4.1 The samples of the vertical and horizontal seams of a typical bolted-metal bin wall:
Sample 0 - without seam;
Sample 1 - vertical seam with double row-type Westeel butyl caulking;
Sample 2 - vertical seam with single row-type Westeel butyl caulking;
Sample 3 - horizontal seam without caulking.

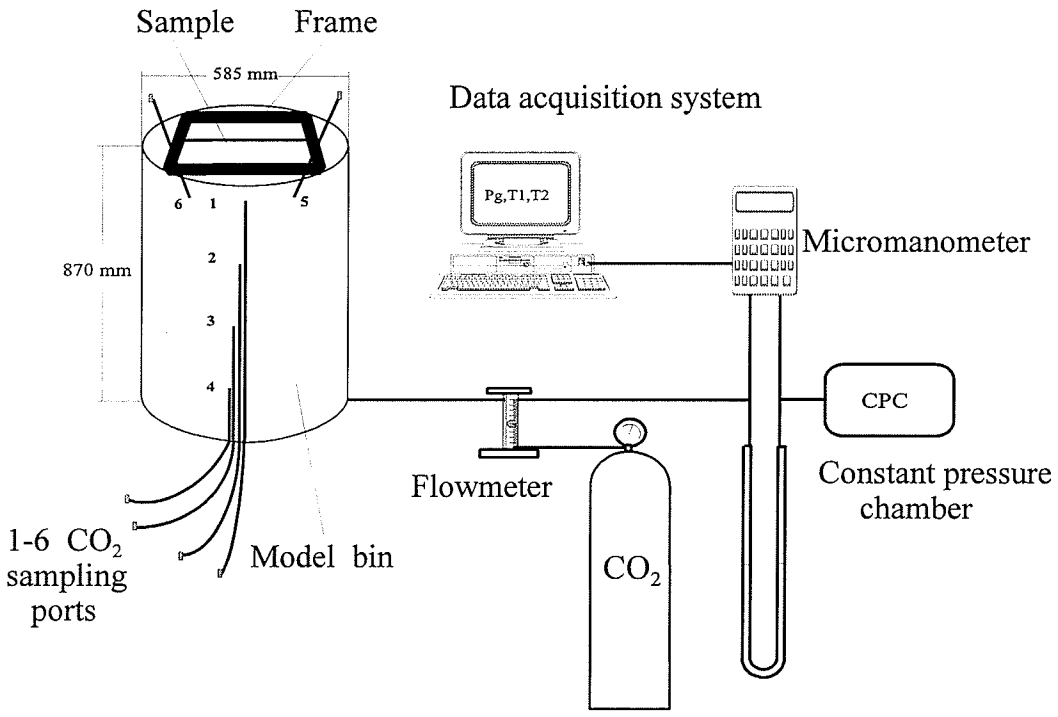


Fig. 4.2 Schematic diagram of the experimental setup.

To ensure a constant reference pressure, a constant pressure chamber (CPC) was used. The barometric pressure caught in the CPC at the beginning of each test remained constant for the duration of the whole test. The difference, called the gauge pressure, between the pressure in the bin and the reference pressure in the CPC, was measured. The effect of sudden variations in the atmospheric pressure on the gauge pressure during every test was eliminated by the CPC.

For the gauge pressure measurements a U-tube manometer, filled with water, and a micromanometer (MP6KSR, Neotronics, Oxford, England) with electrical output were connected to the bottom of the bin. The U-tube served as a check on the micromanometer. The accuracy of the micromanometer was 2.5%. All the connections of the tubing were additionally sealed with the silicone.

The temperatures at the two points, one inside the bin (100 mm below the sample), and one outside the bin, were measured using copper-constantan thermocouples. A 12-bit data acquisition system with output linearization and thermocouple cold junction compensation was used for monitoring the gauge pressure decay and the temperatures. The data was recorded by the computer on a disk.

To draw samples of intergranular air for determining CO_2 concentration in the bin, semirigid nylon tubing, 3.2 mm outside diameter, was installed at four levels, spaced 210 mm apart in the vertical direction along the central axis of the bin, and at two points 10 mm below the sample. The outer ends of the gas sampling tubes were fitted with rubber septa. Before collecting gas samples, the gas sampling tubes were flushed out by drawing 10 mL of gas, and discharging it into the room air. After flushing, the 10 mL of gas samples were withdrawn for analysis. Gas samples were collected using 10 mL

syringes, and analysed for CO_2 concentrations using a gas chromatograph (Model 5890A) with integrator (Model 3396A, Hewlett-Packard Company, Avondale, PA).

4.2.3 Procedure The experiments were carried out according to a schedule given in Table 4.1. In addition to those experiments, two test trials were conducted for three methods of sealing (samples 1, 2, and 3):

1. The CO_2 concentration decay was monitored for long-term (5 d), for the CO_2 purging time of 60 min in the bin filled with wheat, and

2. The time of gauge pressure decay and the CO_2 concentration decay in 24 h were measured when the joints were covered with a protective coating (PC tests), a new unnamed product of the Niagara Protective Coatings (7071 Oakwood Drive, Niagara Falls, ON), for the CO_2 purging time of 60 min in the empty bin.

The samples for testing were chosen at random. For each particular replicate of the sample, first, the tests with grain were carried out for four different initial CO_2 concentrations, then, after unloading the bin, the empty bin tests were conducted for four different initial CO_2 concentrations, as well. To obtain an initial uniform distribution of gas inside the bin every test began 1 h after the CO_2 atmosphere creation in the bin.

In each test the measurements of two variables were taken:

1. The gauge pressure measurement - The initial gauge pressure in the bin was set at 2.5 kPa according to requirements of the pressurization tests for airtight bins (Banks and Annis 1984). To create the initial pressure the hand pump was used. The gauge pressure decay to one-half the initial value was recorded by data acquisition system , every 15 min for sample 0, every 1 min for sample 1 and sample 2, and every 1 s for sample 3.

2. The CO_2 concentration measurement - The initial CO_2 concentrations in the bin were: 0%, about 15%, about 30%, and about 60%. The initial concentrations were obtained by replacing the internal atmosphere in the bin with CO_2 gas by purging it with the flow rate of 2.44 L/min from a CO_2 tank for various durations: 0, 15, 30, and 60 min. The CO_2 concentration was measured before the bin pressurization, which was considered as the initial concentration, and at 1, 3, 6, and 24 h after the initial sampling. For the long-term tests, which lasted 5 d, the CO_2 concentration was continued to measure every 24 h.

Table 4.1 Experimental schedule

Sample	Rep	Bin filled with wheat				Empty bin			
		CO_2 purging time (min)							
		0	15	30	60	0	15	30	60
0	1	G01-0*	G01-15	G01-30	G01-60	E01-0	E01-15	E01-30	E01-60
	2	G02-0	G02-15	G02-30	G02-60	E02-0	E02-15	E02-30	E02-60
	3	G03-0	G03-15	G03-30	G03-60	E03-0	E03-15	E03-30	E03-60
	4	G04-0	G04-15	G04-30	G04-60	E04-0	E04-15	E04-30	E04-60
1	1	G11-0	G11-15	G11-30	G11-60	E11-0	E11-15	E11-30	E11-60
	2	G12-0	G12-15	G12-30	G12-60	E12-0	E12-15	E12-30	E12-60
	3	G13-0	G13-15	G13-30	G13-60	E13-0	E13-15	E13-30	E13-60
	4	G14-0	G14-15	G14-30	G14-60	E14-0	E14-15	E14-30	E14-60
2	1	G21-0	G21-15	G21-30	G21-60	E21-0	E21-15	E21-30	E21-60
	2	G22-0	G22-15	G22-30	G22-60	E22-0	E22-15	E22-30	E22-60
	3	G23-0	G23-15	G23-30	G23-60	E23-0	E23-15	E23-30	E23-60
	4	G24-0	G24-15	G24-30	G24-60	E24-0	E24-15	E24-30	E24-60
3	1	G31-0	G31-15	G31-30	G31-60	E31-0	E31-15	E31-30	E31-60
	2	G32-0	G32-15	G32-30	G32-60	E32-0	E32-15	E32-30	E32-60
	3	G33-0	G33-15	G33-30	G33-60	E33-0	E33-15	E33-30	E33-60
	4	G34-0	G34-15	G34-30	G34-60	E34-0	E34-15	E34-30	E34-60

* In the test code number the first character is G for bin filled with grain and E for empty bin; the first digit refers to the sample number, second refers to the sample replicate number, the last two digits refer to CO_2 purging time.

5. RESULTS AND DISCUSSION

5.1 Pressure decay times to half level

The pressure decay times to the half level of the initial pressure, from 2.5 to 1.25 kPa, from the tests on 4 samples for the bins filled with wheat at 11.8% m.c. and for empty bins are summarized in Table 5.1, and in the Appendix A. The pressure decay times were measured for four replicates of the sample, and for four different CO_2 concentrations in the bin, corresponding to 0, 15, 30, and 60 min purging times. The results are given for sample 0 (control - no seam) in Figs. 5.1 and 5.2, for sample 1 (2 row caulking) in Figs. 5.3 and 5.4, for sample 2 (1 row caulking) in Figs. 5.5 and 5.6, and for sample 3 (no caulking) in Figs. 5.7 and 5.8. In the odd numbered figures, the pressure decay times for four replicates of a sample for the same CO_2 concentration are drawn in each graph. In the even numbered figures, the decay times for four tests with different CO_2 concentrations for the same sample are given.

For the tests conducted in the bin filled with wheat, the times for the gauge pressure to decay to one-half the initial pressure varied among the samples, from 285 to 540 min for the control sample 0 (no seam), from 17 to 68 min for the sample 1 (2 row caulking), from 1.96 to 409 min for the sample 2 (1 row caulking), and from 0.15 to 0.72 min for the sample 3 (no caulking).

For the tests carried out using the empty bin, the pressure decay times were generally longer than for tests done using the bin filled with grain. The range was 420-870 min for the control sample 0 (no seam), 19 - 239 min for sample 1 (2 row caulking), 3.5 - 427 min for sample 2 (1 row caulking), and 0.23 - 1.22 min for sample 3 (no

Table 5.1 Pressure decay times (min) to half level using bin filled with wheat (11.8% m.c.) and empty bin. The bin was purged with carbon dioxide and after an hour pressurized with air.

Filling of the bin		Filled up						Empty						PC*
Purging time,min	Replicates	0	15	30	60	Mean	SD	0	15	30	60	Mean	SD	60
Sample 0	S01**	540	405	405	405	**439**	68	645	840	870	510	**716**	170	
no seam	S02	450	285	315	285	**334**	79	510	435	465	450	**465**	32	
control	S03	465	375	420	390	**413**	40	540	480	615	555	**548**	55	
	S04	480	390	360	345	**394**	60	435	435	435	420	**431**	8	
	Mean	**484**	**364**	**375**	**356**	**395**	**60**	**533**	**548**	**596**	**484**	**540**	**46**	
	SD	39	54	47	54	**45**		87	196	199	60	**127**		
Sample 1	S11	39	64	40	68	**53**	15	239	144	144	164	**173**	45	163
2 row caulking	S12	53	51	48	37	**47**	7	69	52	142	46	**77**	44	60
	S13	18	19	19	17	**18**	1	19	22	30	24	**24**	5	19
	S14	67	45	45	49	**52**	11	116	129	119	122	**122**	6	112
	Mean	**44**	**45**	**38**	**43**	**42**	**3**	**111**	**87**	**109**	**89**	**99**	**13**	**89**
	SD	21	19	13	21	**16**		94	59	54	65	**63**		63
Sample 2	S21	19	17	15	16	**17**	2	35	26	35	29	**31**	5	29
1 row caulking	S22	1.96	2.06	2.25	2.38	**2**	0.19	3.92	3.5	4.08	4.17	**4**	0.30	30
	S23	409	341	174	124	**262**	135	427	383	278	218	**327**	96	238
	S24	288	159	110	71	**157**	94	256	208	214	195	**218**	26	290
	Mean	**179**	**130**	**75**	**53**	**109**	**57**	**180**	**155**	**133**	**112**	**145**	**30**	**147**
	SD	201	158	81	56	**123**		199	177	134	111	**154**		137
Sample 3	S31	0.33	0.32	0.33	0.35	**0.33**	0.01	0.53	0.53	0.57	0.63	**0.57**	0.05	55
no caulking	S32	0.12	0.2	0.22	0.23	**0.19**	0.05	0.33	0.3	0.4	0.42	**0.36**	0.06	63
	S33	0.13	0.15	0.15	0.17	**0.15**	0.02	0.23	0.27	0.27	0.28	**0.26**	0.02	15
	S34	0.68	0.72	0.7	0.65	**0.69**	0.03	1.15	1.18	1.22	1.17	**1.18**	0.03	4
	Mean	**0.32**	**0.35**	**0.35**	**0.35**	**0.34**	**0.02**	**0.56**	**0.57**	**0.62**	**0.63**	**0.59**	**0.03**	**34.3**
	SD	0.26	0.26	0.24	0.21	**0.24**		0.41	0.42	0.42	0.39	**0.41**		29.1

*The wall's seam covered with the additional protective coating.

** Replicates of the wall's seam sample.

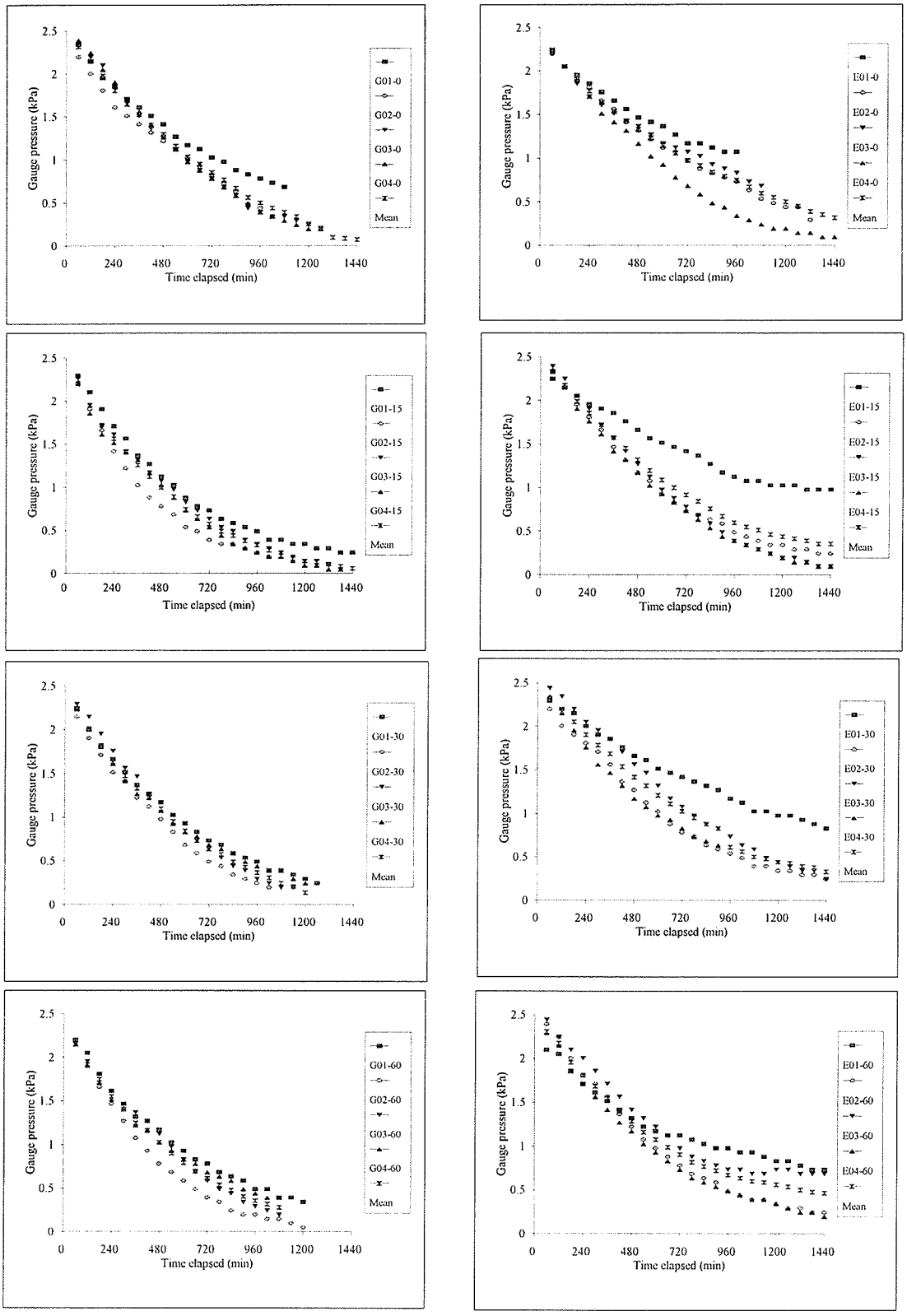


Fig. 5.1 Gauge pressure (kPa) versus time (min) for sample 0 (control - no seam) for four different initial concentrations of carbon dioxide (purging time - 0, 15, 30, and 60 min) in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side). Data from four replicates of the sample are plotted in each graph.

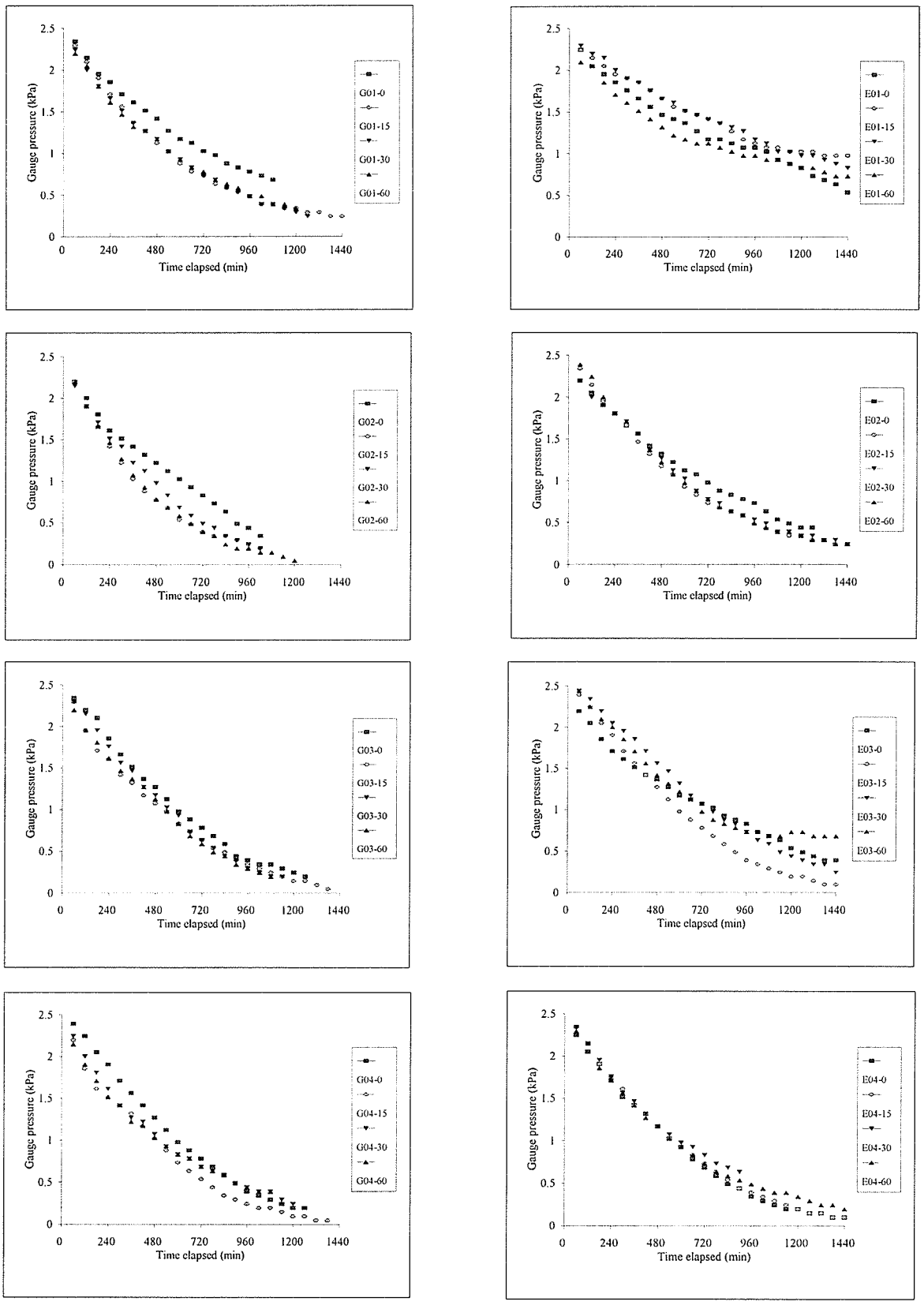
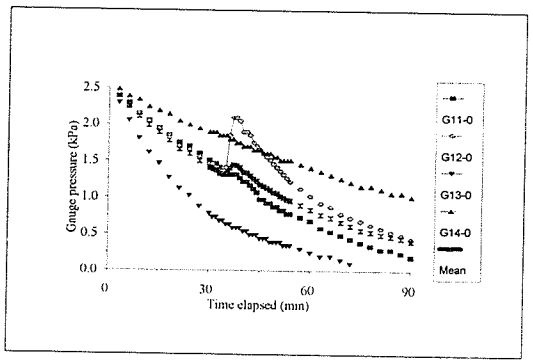
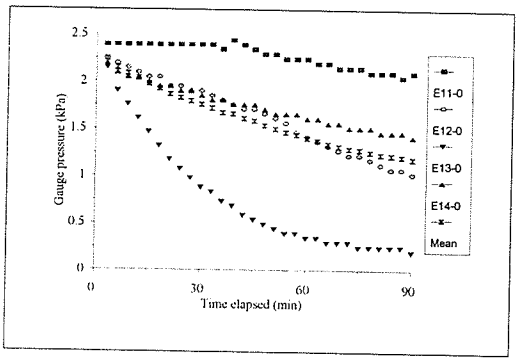
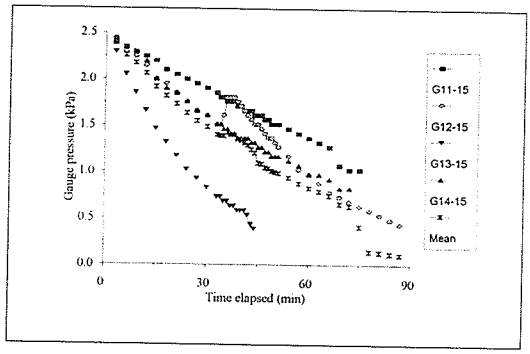
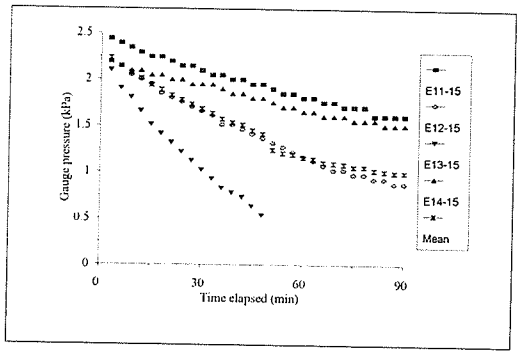


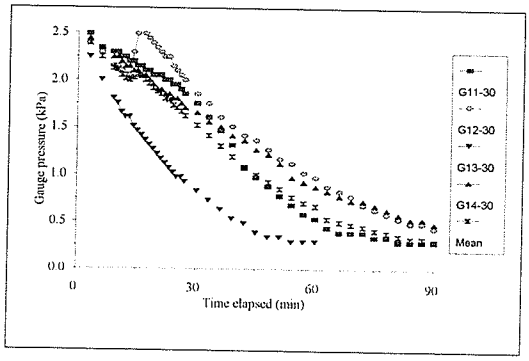
Fig. 5.2 Gauge pressure (kPa) versus time (min) for sample 0 (control - no seam) for four replicates of the sample in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side). Data from four tests at four different initial concentrations of carbon dioxide are plotted in each graph.

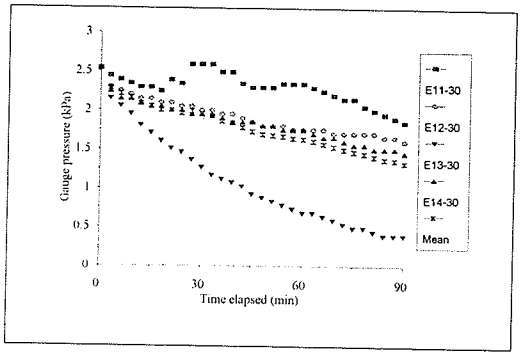


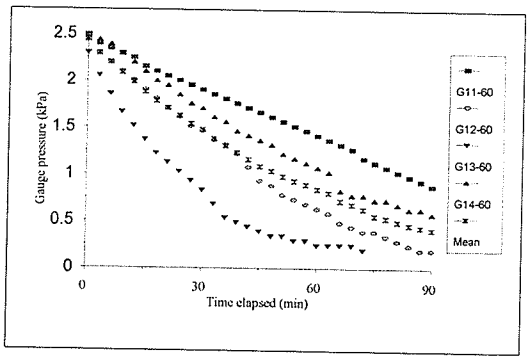


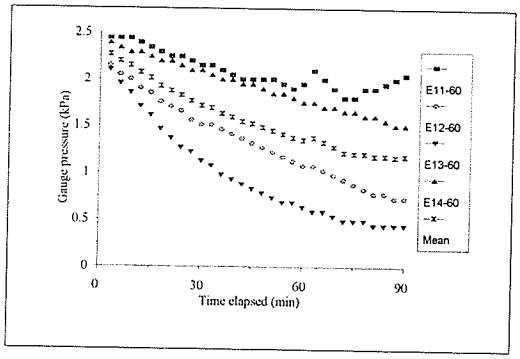












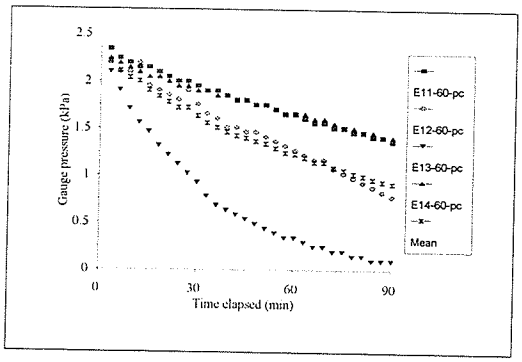


Fig. 5.3 Gauge pressure (kPa) versus time (min)
for sample 1 (2 row caulking)
for four different initial concentrations of carbon dioxide (purging time - 0, 15, 30, and 60 min) in the wheat (11.8% m.c.) filledbin (left side) and empty bin (right side).
Data from four replicates of the sample are plotted in each graph.

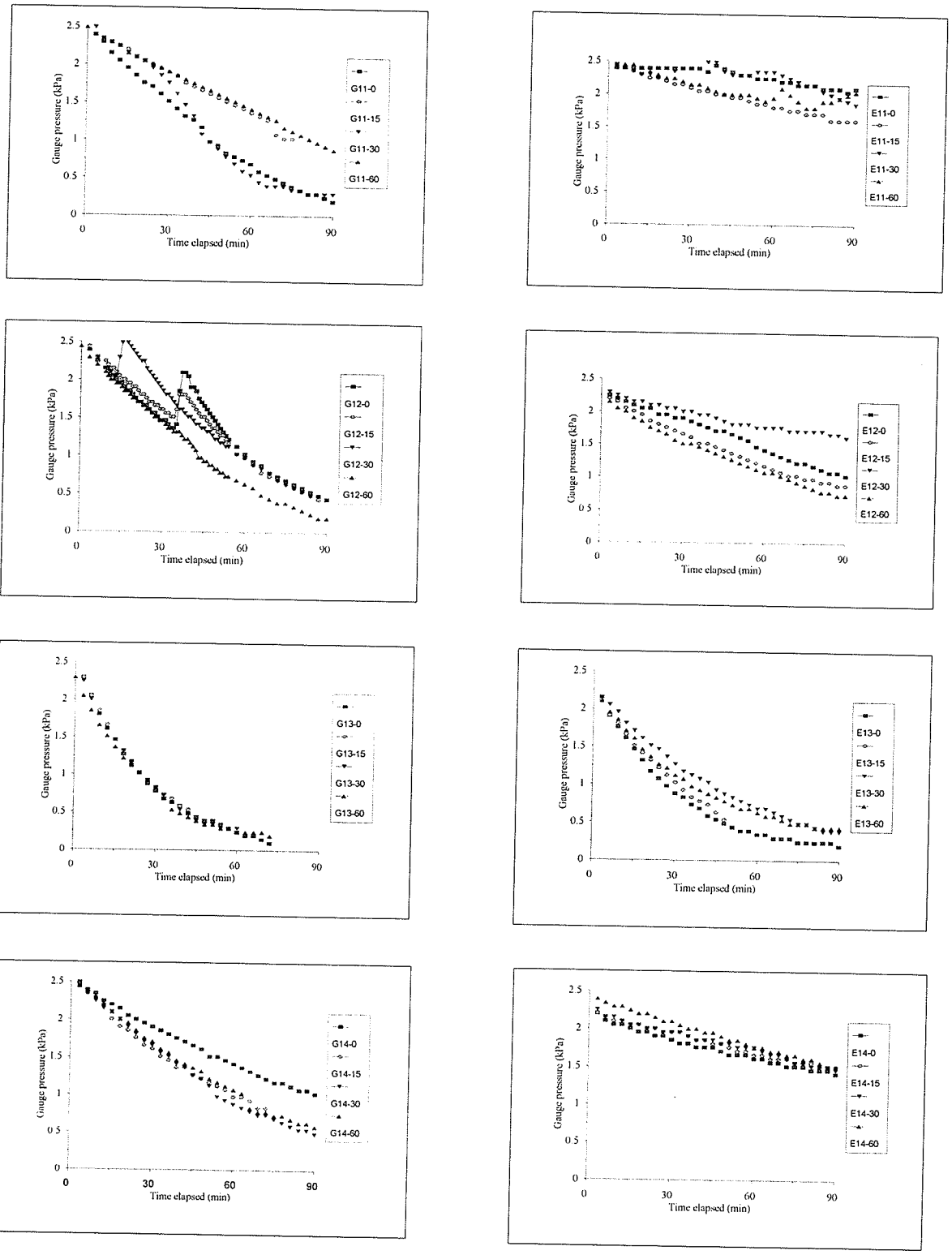
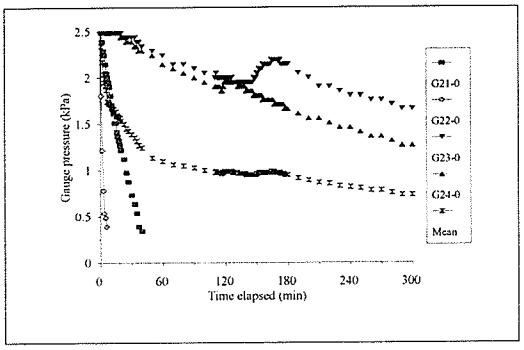
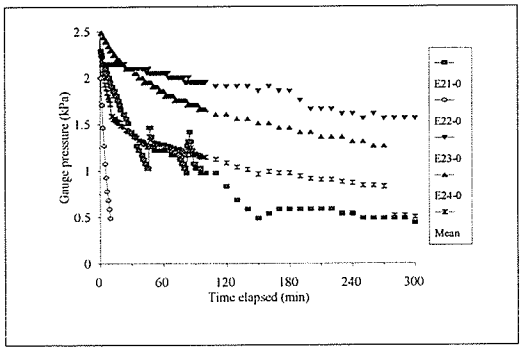
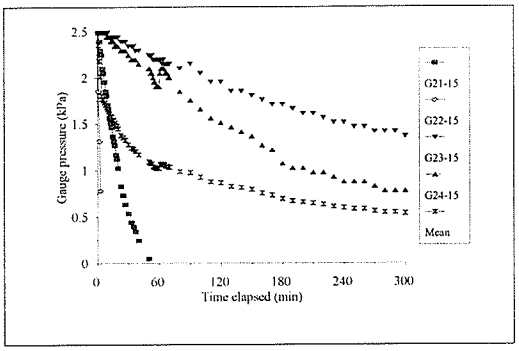
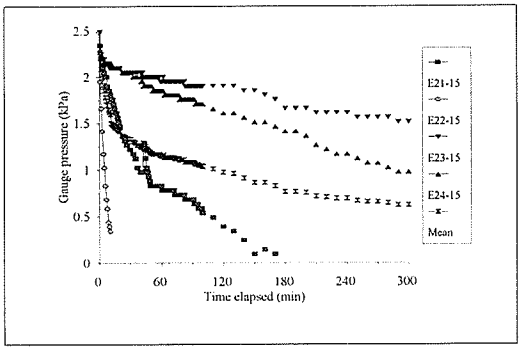


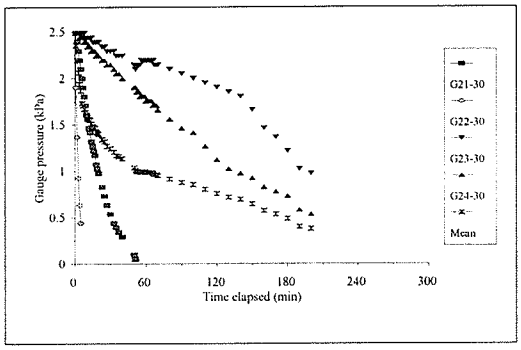
Fig. 5.4 Gauge pressure (kPa) versus time (min) for sample 1 (2 row caulking) for four replicates of the sample in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side).
Data from four tests at four different initial concentrations of carbon dioxide are plotted in the each graph.

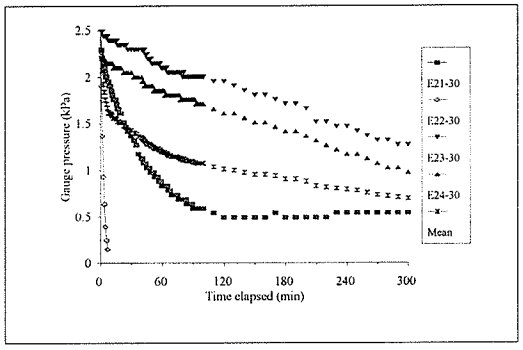


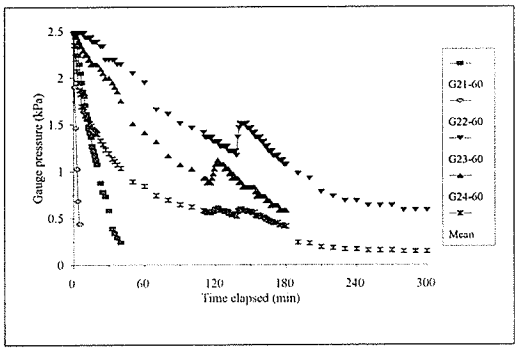


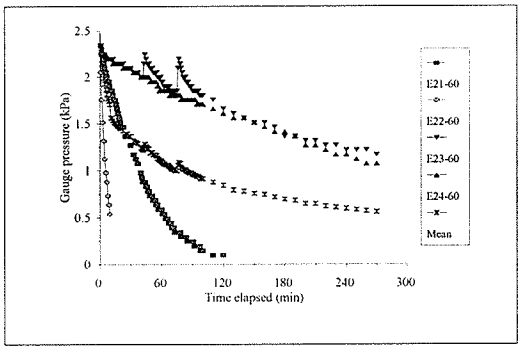












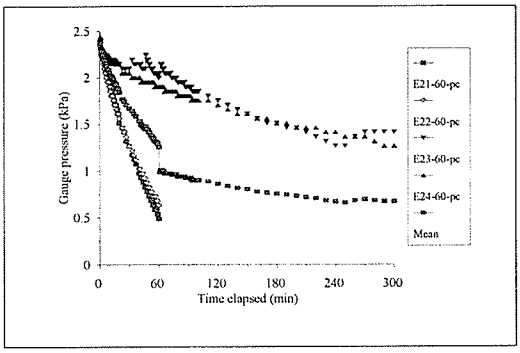


Fig. 5.5 Gauge pressure (kPa) versus time (min)
for sample 2 (1 row caulking)
for four different initial concentrations of carbon dioxide (purging time - 0, 15, 30, and 60 min) in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side).
Data from four replicates of the sample are plotted in each graph.

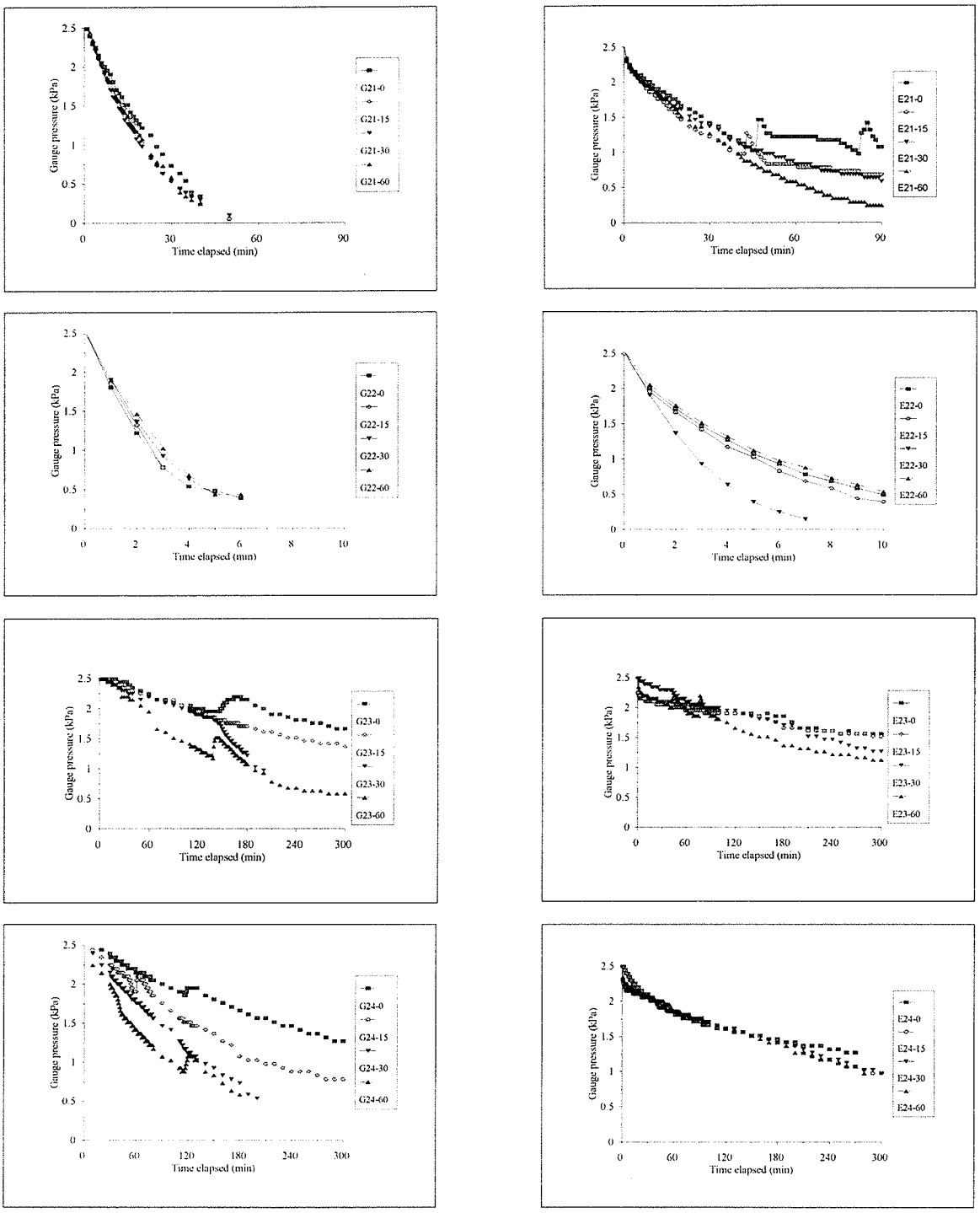
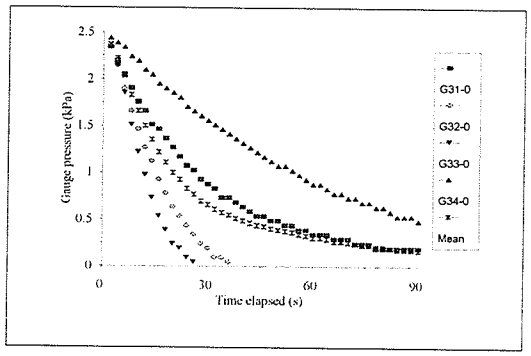
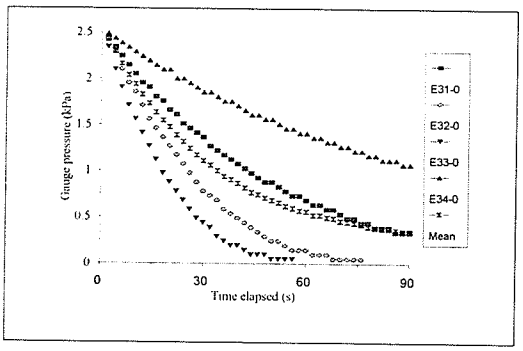
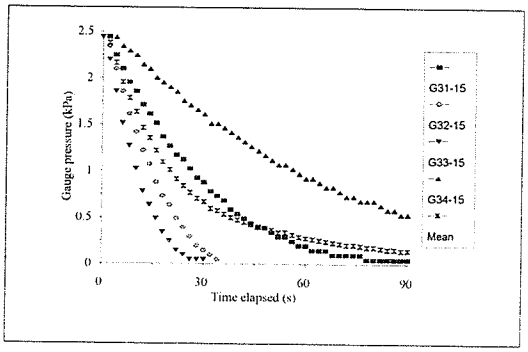
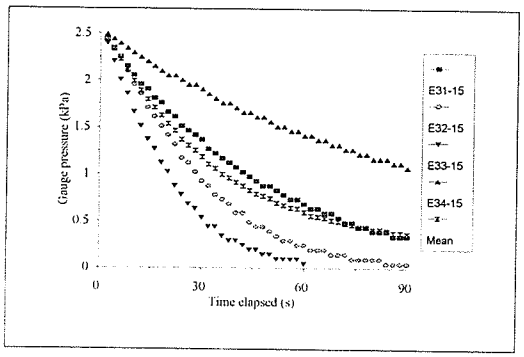


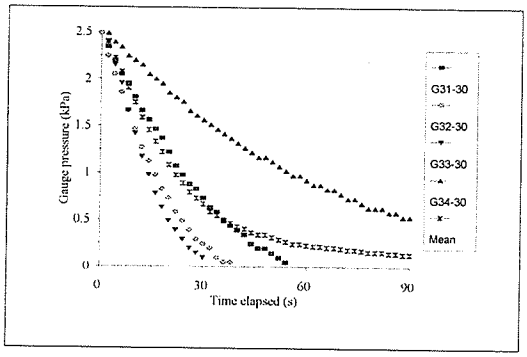
Fig. 5.6 Gauge pressure (kPa) versus time (min) for sample 2 (1 row caulking) for four replicates of the sample in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side).
Data from four tests at four different initial concentrations of carbon dioxide are plotted in each graph.

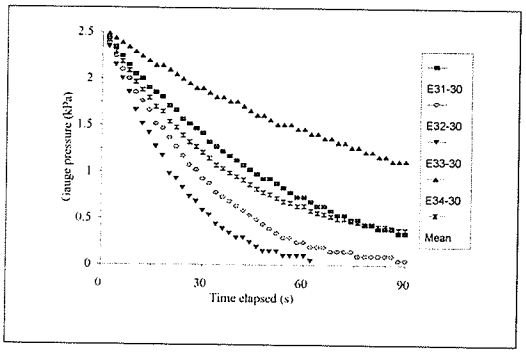


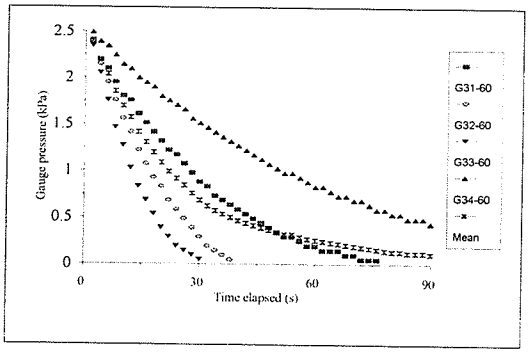


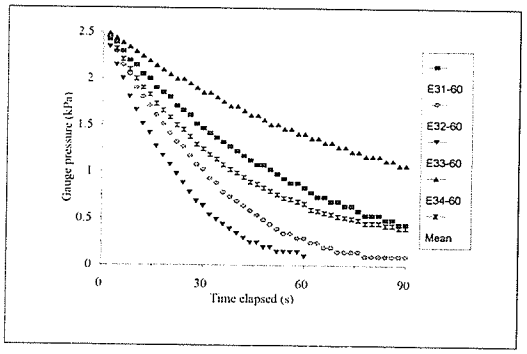












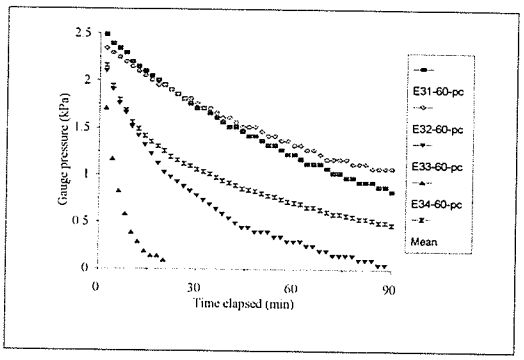


Fig. 5.7 Gauge pressure (kPa) versus time (s)
for sample 3 (no caulking)
for four different concentrations of carbon dioxide (purging time - 0, 15, 30, and 60 min) in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side).
Data from four replicates of the sample are plotted in each graph.

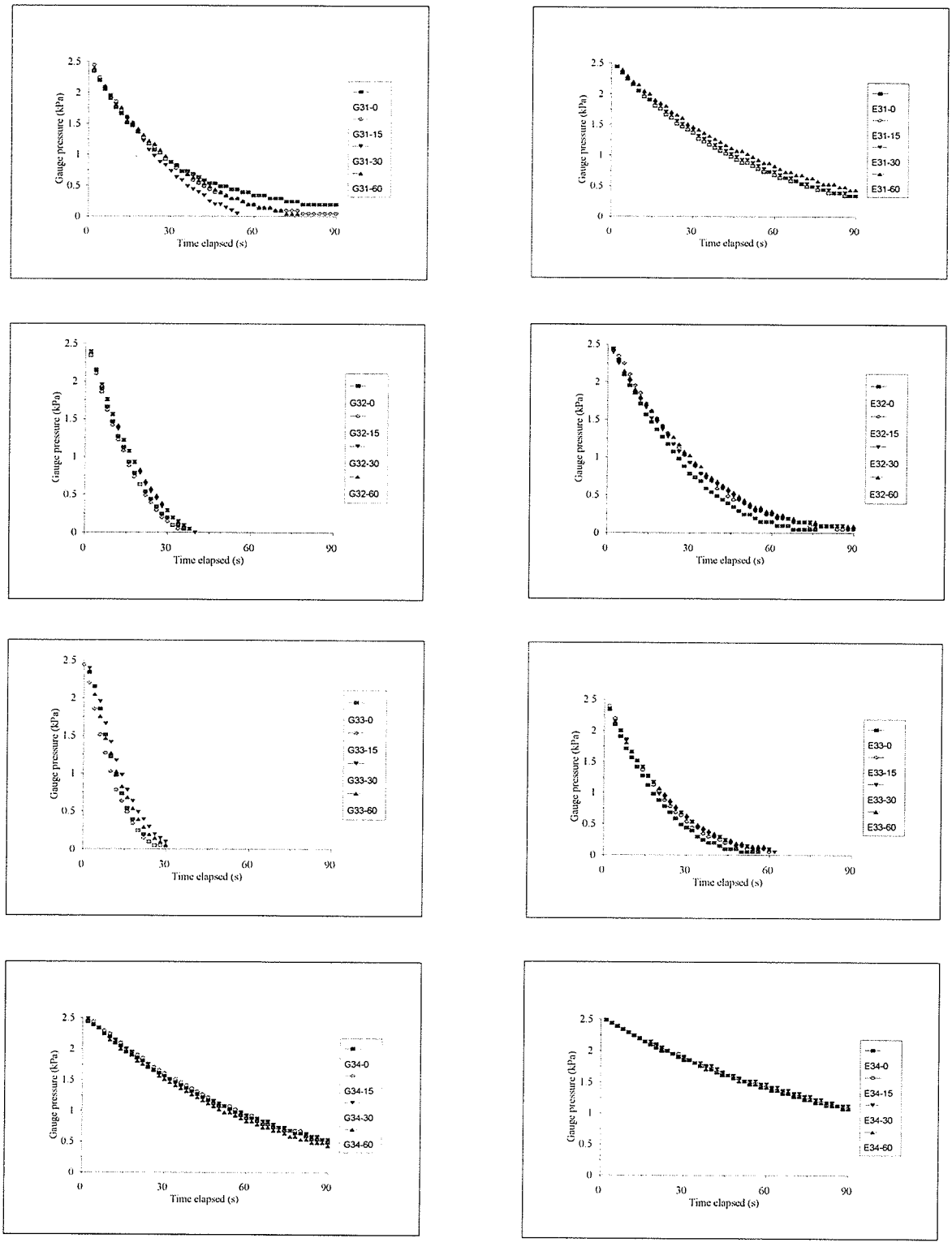


Fig. 5.8 Gauge pressure (kPa) versus time (s) for sample 3 (no caulking) for four replicates of the sample in the wheat (11.8% m.c.) filled bin (left side) and empty bin (right side).
Data from four tests at four different initial concentrations of carbon dioxide are plotted in each graph.

caulking).

Unexpectedly, for the sample 2 (1 row caulking) the means of pressure decay times were larger than for the sample 1 (2 row caulking). The variability among replicates for sample 2 was very high. Although the same torque was used to tighten the bolts, it was probably caused by the unpredictable cracks in the bolts' washers. The row of caulking was placed outside the row of bolts (Fig.4.1) so the caulking did not protect from the leakage through the bolts' openings.

The analysis of variance was performed on the pressure decay times data set (Table 5.1) using the General Linear Model (GLM) Procedure from the Statistical Analysis System (SAS 5.16, 1986 SAS Institute Inc., Cary, NC 27511) software package. The experiment was designed as the Completely Randomized Design (CRD) with 3-way factorial treatment structure (4x4x2). There were a total of 128 treatments consisting of all combinations of four replicates, four methods of sealing (S0, S1, S2, S3), four initial CO_2 concentrations (C0, C15, C30, C60), and 2 levels of the grain presence in the bin (G-grain, E-empty). The model of the experiment was as follows:

$$Y_{ijk} = \mu + S_i + C_j + G_k + (S_i \times C_j) + (S_i \times G_k) + (C_j \times G_k) + (S_i \times C_j \times G_k) + \varepsilon_{ijk} \qquad (5.1)$$

where: μ = the mean value for the experimental unit,
S_i = the effect of the ith method of sealing,
C_j = the effect of the jth initial CO_2 concentration,
G_k = the effect of the kth level of the grain presence in the bin,
$(S_i \times C_j)$, $(S_i \times G_k)$, $(C_j \times G_k)$, and $(S_i \times C_j \times G_k)$ = the interactions between the factors,
ε_{ijk} = the random error associated with the experimental unit.

An analysis of variance of the pressure decay times as influenced by the method of sealing, initial CO_2 concentration, and presence of grain is presented in Table 5.2.

Table 5.2 Analysis of variance of the pressure decay times (min) to half level as influenced by the method of sealing, initial CO_2 concentration and presence of grain in the bin.

Source of variation	Degrees of freedom (DF)	Sum of squares (SS)	Mean square (MS)	F value	Pr>F
S_i	3	4121865	1373955	148.47	0.01% **
C_j	3	38929	12976	1.4	24.7% ns
G_k	1	112756	112756	12.18	0.7% **
S_i x C_j	9	41353	4595	0.5	87.4% ns
S_i x G_k	3	91678	30559	3.3	2.36% *
C_j x G_k	3	13729	4576	0.49	68.7% ns
S_i x C_j x G_k	9	25861	2873	0.31	96.98% ns
Error	96	888395	9254		
Total	127	5334567			
Contrast	**DF**	**Contrast SS**	**Contrast MS**	**F value**	**Pr>F**
S0 vs Others	1	3863787	3863787	417	0.01% **
S1 vs S2	1	51264	51264	5.54	2.06% *
S2 vs S3	1	257098	257098	27.78	0.01%**
C0 vs Others	1	26872	26872	2.9	9.16% ns
C15 vs C30	1	0.570	0.570	0.00	99.38% ns
C30 vs C60	1	8971	8971	0.97	32.73% ns

** =highly significant effect at 1% significance level.
* =significant effect at 5% significance level.
ns =not significant effect.

The experiment was reliable because the variations in the results were reasonably taken into account by the model (83.4%) as it is indicated by the coefficient of

determination (r^2) value of 0.834. The tested null hypotheses were that there were no differences between means. In case of rejection of the null hypotheses, the alternative hypotheses, that the means were significantly different, were accepted. The analysis of variance showed that the main effects of the method of sealing, and presence of grain in the bin were highly significant at 1% significance level, which means that there are significant differences between the means of the pressure decay times for various methods of sealing for both full and empty bins. Therefore, the null hypotheses can be rejected. On the contrary the null hypothesis can be accepted for the main effect of the initial CO_2 concentration. The means of the pressure decay times obtained for various initial CO_2 concentrations are not significantly different. The interactions between the factors were not significant at 1% significance level.

The comparisons of the effects of the methods of sealing indicate that there is highly significant difference between a control sample (no seam) and the remaining samples, as well as between sample 3 (no caulking) and samples 1 and 2 (2 and 1 row caulking). The means of the pressure decay times between sample 1 and sample 2 are different at 5% significance level. The comparisons of the effects of the initial CO_2 concentration on the pressure decay times indicate insignificant differences between different levels of the initial CO_2 concentration created in the bins.

The results obtained for sample 0 (no seam) indicate the imperfections in the sealing of the whole experimental setup so they should be considered as a reference base for the interpretation of the results obtained for the remaining samples.

5.2 Effect of the differences between internal and external temperatures of the bin and the barometric pressure on the repeatability of the gauge pressure decay tests

During the experiments sudden changes in the gauge pressure in the bins were observed in some tests (Fig.5.4 and Fig.5.6). With the assumption made at the beginning of the experiment that the temperatures inside and outside the bin are constant (the experiment was conducted in a heated building), and the reference pressure is constant (the barometric pressure caught at the beginning of each test in the constant pressure chamber (CPC) remained constant during the test), it should not have happened.

To investigate this problem, the additional tests on the repeatability of an experiment were performed in a constant temperature chamber: Test 1 on the sample 1 (2 row caulking) (Fig.5.9) and Test 2 on the sample 2 (1 row caulking) (Fig.5.10) (Appendix B). The inside and outside temperatures were equal and constant: 20.0 ±1.0 °C for Test 1, and 29.5 ± 0.5 °C for Test 2. The barometric pressure during every test was constant in the range ±0.02 kPa with the mean values different for each test. The gauge pressure decay time to half level for four replicates of the Test 1 was 72 ±2 min. Sudden changes were not observed in the gauge pressure during the tests. The gauge pressure decay time to half level for six replicates of Test 2 was 144 ± 17 min. Although the repeatability of the test in this case was worse than in Test 1 there were no sudden changes in the gauge pressure during the tests either. Considering the above, it can be concluded that the gauge pressure decay test is repeatable when conducted under the constant conditions without instantaneous changes in the temperature and barometric pressure.

The analysis of the recorded temperatures and the barometric pressure (Appendix

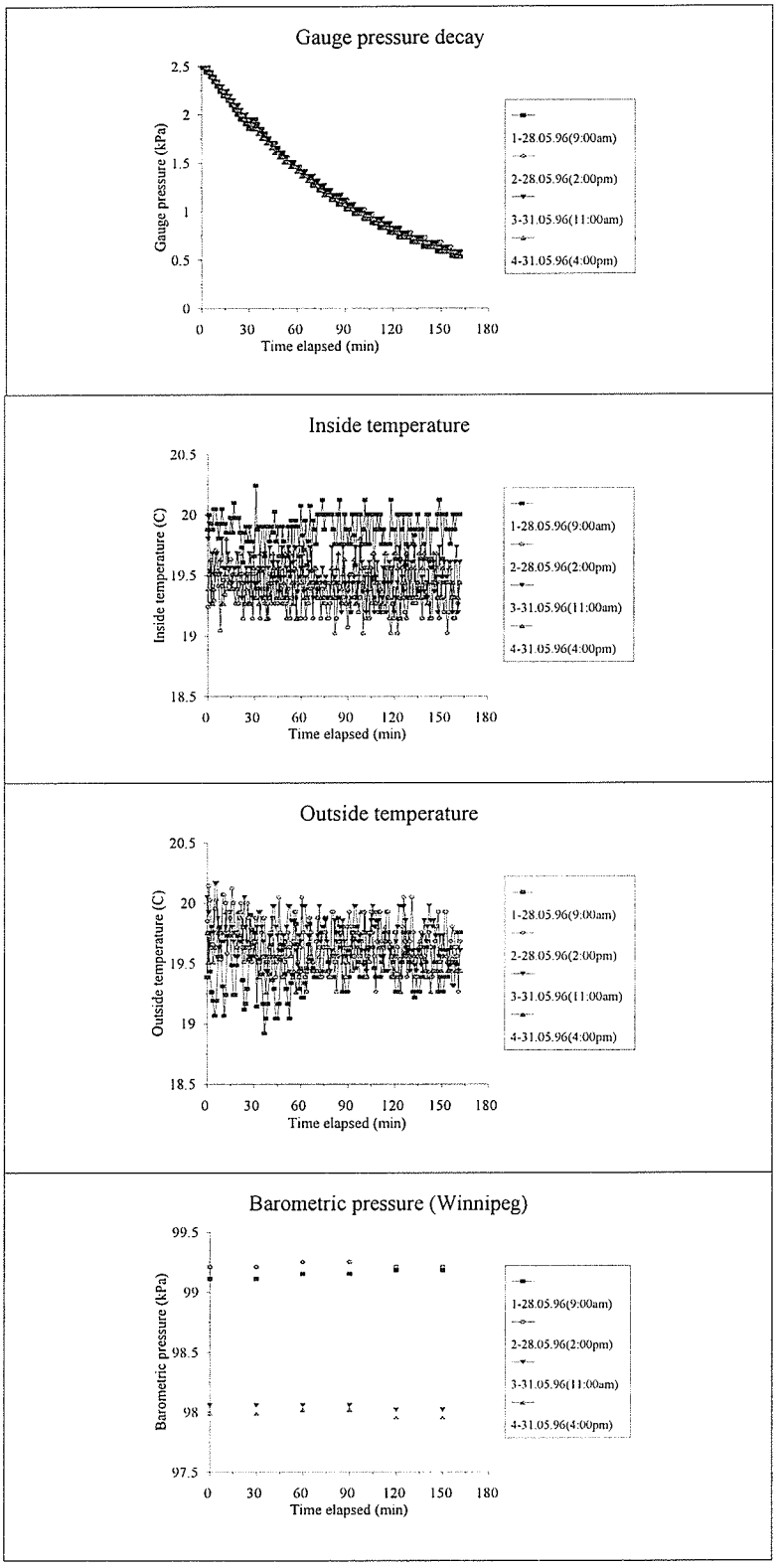


Fig. 5.9 Repeatability of the experiment for sample 1 (2 row caulking) when no carbon dioxide was added, bin was filled with grain, and four replicates were conducted in a temperature-controlled chamber.

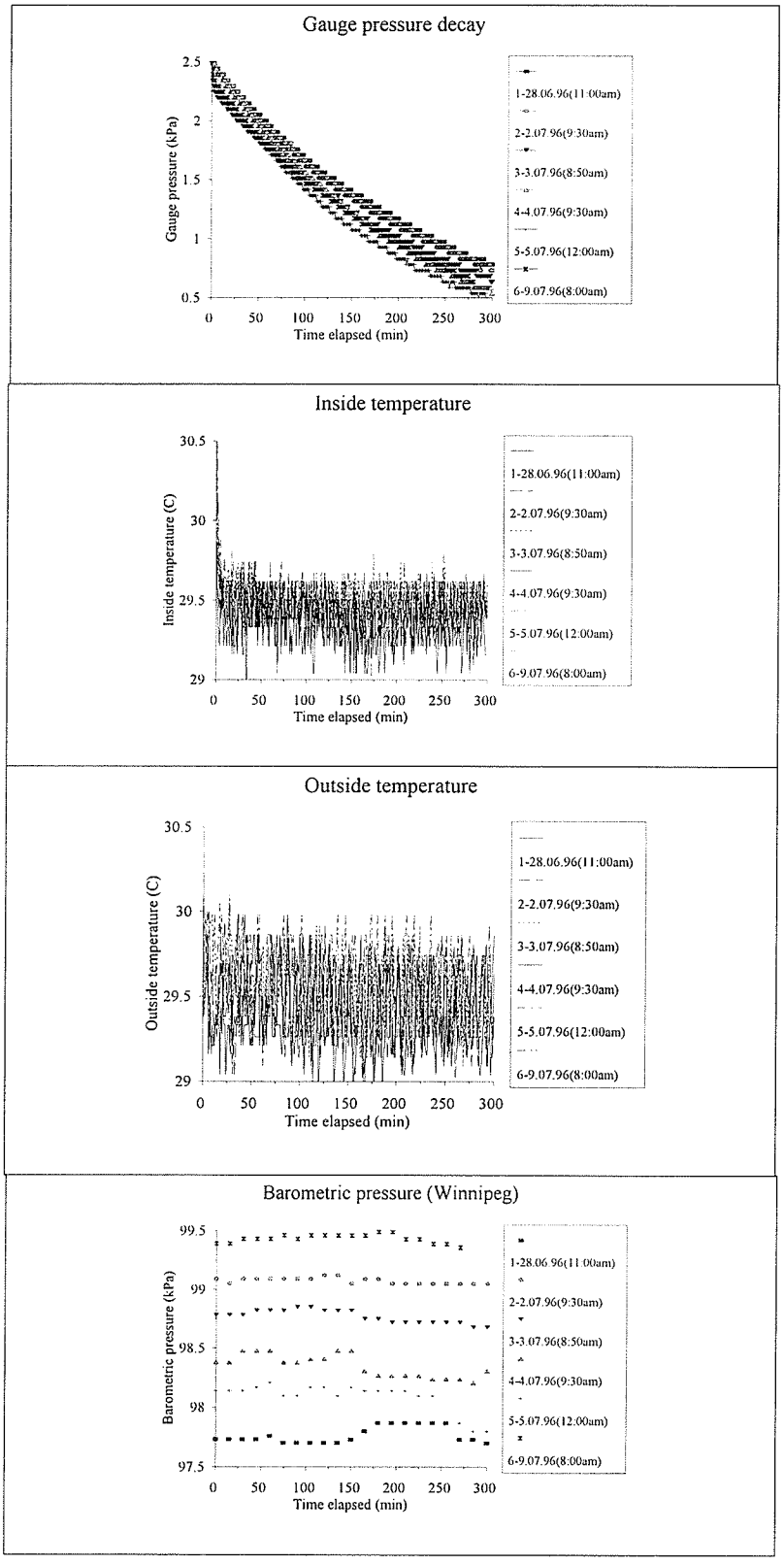


Fig. 5.10 Repeatability of the experiment for sample 2 (1 row caulking) when no carbon dioxide was added, bin was empty, and six replicates were conducted in a temperature-controlled chamber.

A) revealed that during some tests sudden changes in the outside temperature had occurred. It probably was a reason for the sudden increase in the gauge pressure during the decay tests. The sudden decrease in the outside temperature caused the sudden drop in the temperature followed by the drop in reference pressure in the CPC. The reference pressure drop in the CPC was the reason for the increase of the gauge pressure between the CPC and the test bin. The CPC had smaller volume than the test bin and was lying on the floor so was exposed to the changes in the ambient temperatures easier than the test bin. Using the equation based on the perfect gas law when volume and gas mass remain constant:

$$\frac{P_1}{P_2} = \frac{T_1}{T_2} \qquad (5.2)$$

we can explain how much of the pressure changes was caused by the temperature changes. For instance, in the 36th minute of the test G12-15 the gauge pressure rose from 1.61 to 1.81 kPa when the ambient temperature dropped from 19.6 to 16.6°C. If we assume that the drop in the outside temperature caused the equal drop in the temperature in the CPC, the reference pressure in the CPC should have decreased 273+19.6/273+16.6 = 1.0104 times, from 99.61 kPa to 99.61/1.0104= 98.59 kPa, i.e. by 1.02 kPa. In fact the gauge pressure changed only by 0.2 kPa. Even with the compensation for the pressure decrease in the test bin, caused by the inside temperature change from 20.1 to 19.6°C, and equal to (99.61+1.61) - (99.61+ 1.61)/(273+20.1/273+19.6) = 0.172 kPa, the gauge pressure should increased by 1.02 - 0.172 = 0.848 kPa. Nevertheless, the calculations did

not prove the assumption about temperature changes in the CPC to be valid; however, the interpretation of this process is true.

Although sudden variations in the barometric pressure for the duration of the tests were not observed the continuous decay or rise of the barometric pressure could contribute to the pattern of the gauge pressure decay (Appendix A, Tables A.4-A.7).

5.3 Carbon dioxide retention

5.3.1 Carbon dioxide retention after 24 h The CO_2 concentration remaining in the bin after 24 h as a percentage of the initial concentration from four replicates on four samples for the bin filled with wheat at 11.8% m.c. and for empty bin are summarized in Table 5.3, and in the Appendix C. The values of retention coefficients ($\eta_{retention}$) for four replicates of the sample, and for three different CO_2 concentrations in the bin, corresponding to 15, 30, and 60 min purging times were plotted for sample 0 (control - no seam) in Fig. 5.11, for sample 1 (2 row caulking) in Fig. 5.12, for sample 2 (1 row caulking) in Fig. 5.13, and for sample 3 (no caulking) in Fig. 5.14. To estimate and compare the efficiency of CO_2 retention among various experiments I have used the coefficient of retention ($\eta_{retention}$), i.e. the ratio of the CO_2 concentration after 24 h to the initial concentration. The coefficient of retention ($\eta_{retention}$) was calculated as:

$$\eta_{retention} = \frac{C_{24h}}{C_{0h}} x100 \qquad (5.3)$$

Table 5.3 The retention coefficients (%) after 24 h using bin filled with wheat (11.8% m.c.) and empty bin. The bin was purged with carbon dioxide and after an hour pressurized with air.

Filling of the bin		Filled up					Empty					PC*
Purging time, min	Replicates	15	30	60	Mean	SD	15	30	60	Mean	SD	60
Sample 0	S01**	97.8	97.2	96.6	**97.2**	0.6	105.8	102.1	99.5	**102.5**	3.2	
no seam	S02	100.8	97.4	96.5	**98.2**	2.3	100.3	101.1	99.5	**100.3**	0.8	
control	S03	99.7	97.5	98.2	**98.5**	1.1	99.6	99.2	98.5	**99.1**	0.6	
	S04	99.5	99.7	97.4	**98.9**	1.3	97.7	98.5	98.9	**98.4**	0.6	
	Mean	**99.5**	**98.0**	**97.2**	**98.2**	**1.2**	**100.9**	**100.2**	**99.1**	**100.1**	**0.9**	
	SD	1.2	1.2	0.8	**0.7**		3.5	1.7	0.5	**1.8**		
Sample 1	S11	97.3	99.0	92.8	**96.4**	3.2	100.3	91.5	87.5	**93.1**	6.5	95.7
2 row caulking	S12	95.4	90.8	92.2	**92.8**	2.4	99.7	101.3	94.0	**98.3**	3.8	94.0
	S13	97.3	94.3	97.2	**96.3**	1.7	105.6	93.5	90.9	**96.7**	7.8	98.7
	S14	96.1	94.2	83.9	**91.4**	6.6	97.2	99.8	97.4	**98.1**	1.4	93.3
	Mean	**96.5**	**94.6**	**91.5**	**94.2**	**2.5**	**100.7**	**96.5**	**92.5**	**96.6**	**4.1**	**95.4**
	SD	0.9	3.4	5.6	**2.5**		3.5	4.8	4.2	**2.4**		2.4
Sample 2	S21	95.0	94.0	90.8	**93.3**	2.2	96.6	95.4	93.3	**95.1**	1.7	95.3
1 row caulking	S22	94.6	93.3	91.8	**93.2**	1.4	97.4	93.2	91.8	**94.1**	2.9	96.1
	S23	98.8	98.3	94.1	**97.1**	2.6	101.7	98.3	97.4	**99.1**	2.3	99.7
	S24	98.8	96.8	95.6	**97.1**	1.6	101.2	104.5	100.3	**102.0**	2.2	96.3
	Mean	**96.8**	**95.6**	**93.1**	**95.2**	**1.9**	**99.2**	**97.9**	**95.7**	**97.6**	**1.8**	**96.9**
	DS	2.3	2.4	2.2	**2.2**		2.6	4.9	3.9	**3.7**		1.9
Sample 3	S31	95.3	84.5	90.9	**90.2**	5.4	93.1	90.2	88.1	**90.5**	2.5	91.3
no caulking	S32	94.0	91.9	94.0	**93.3**	1.2	104.8	96.3	94.8	**98.6**	5.4	95.8
	S33	96.3	86.4	91.7	**91.5**	5.0	91.2	87.7	94.9	**91.3**	3.6	102.3
	S34	95.8	83.9	87.5	**89.1**	6.1	96.3	95.2	94.5	**95.3**	0.9	95.3
	Mean	**95.4**	**86.7**	**91.0**	**91.0**	**4.3**	**96.4**	**92.4**	**93.1**	**93.9**	**2.1**	**96.2**
	DS	1.0	3.6	2.7	**1.8**		6.0	4.1	3.3	**3.8**		4.6

*The wall's seam covered with the additional protective coating.

**Replicates of the wall's seam sample.

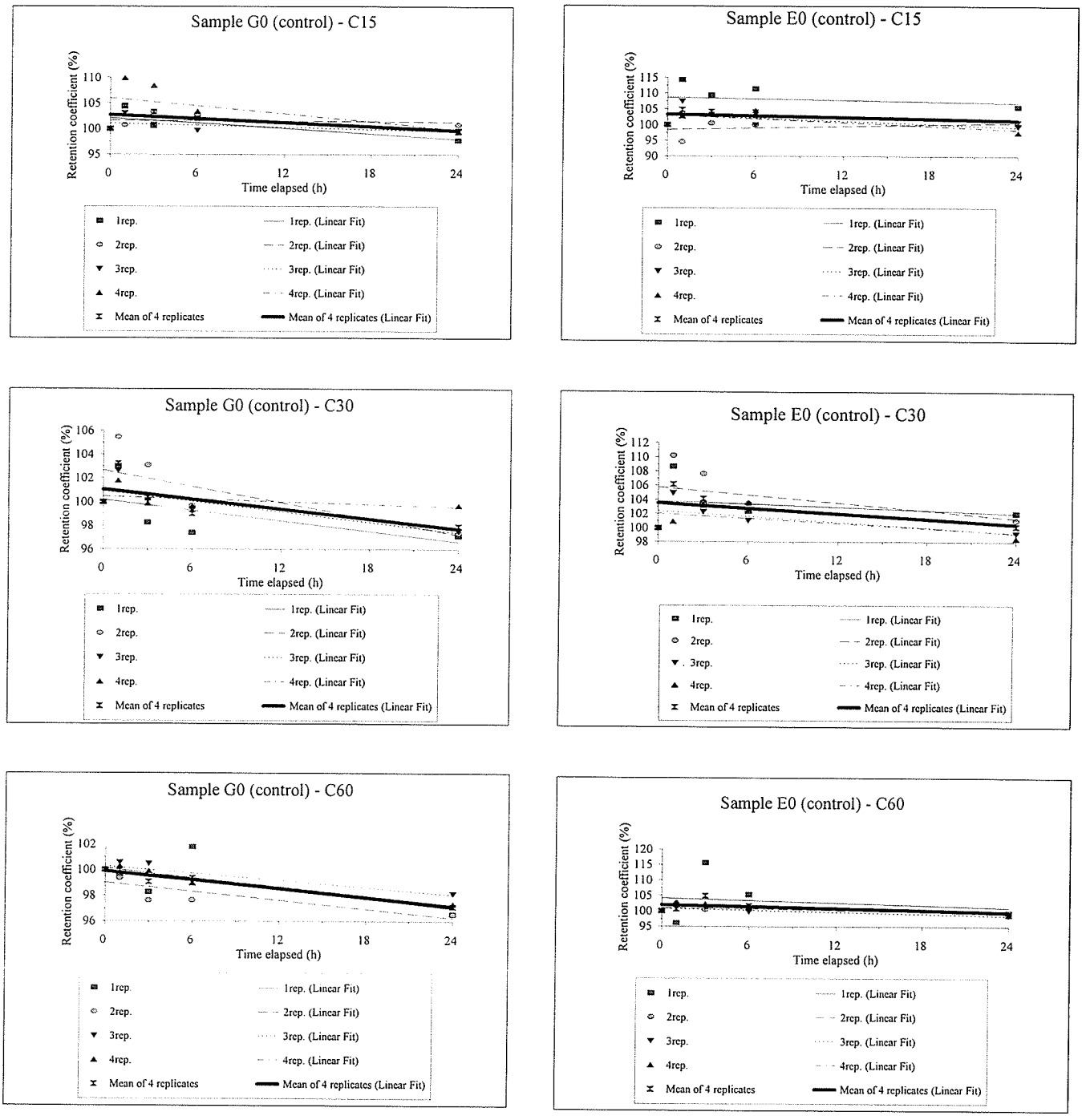
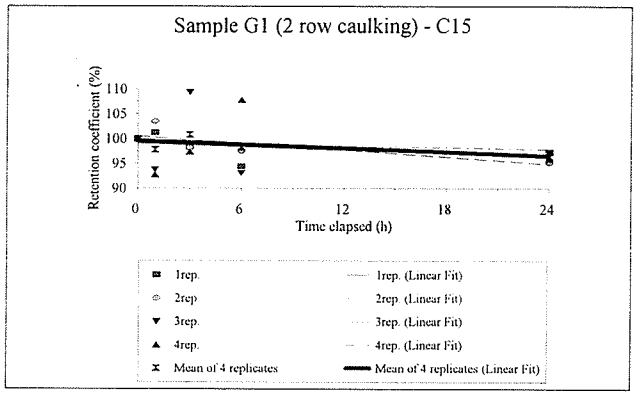
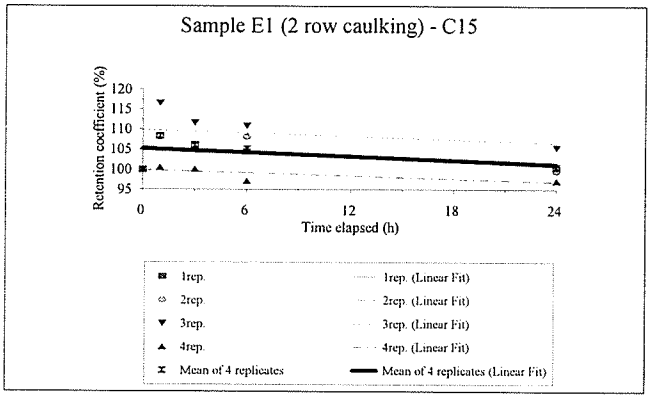
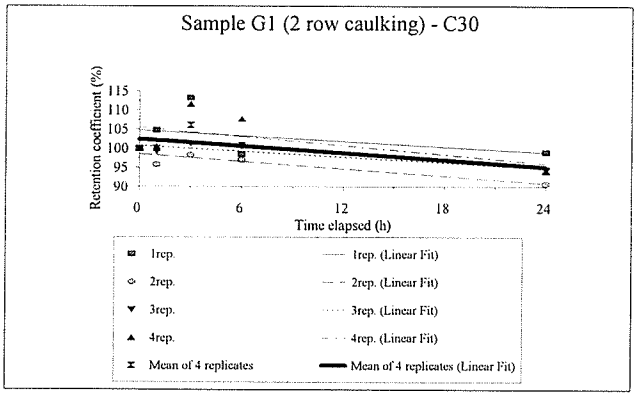
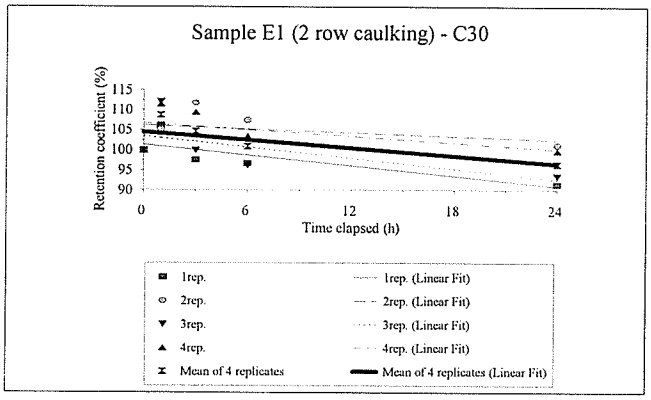


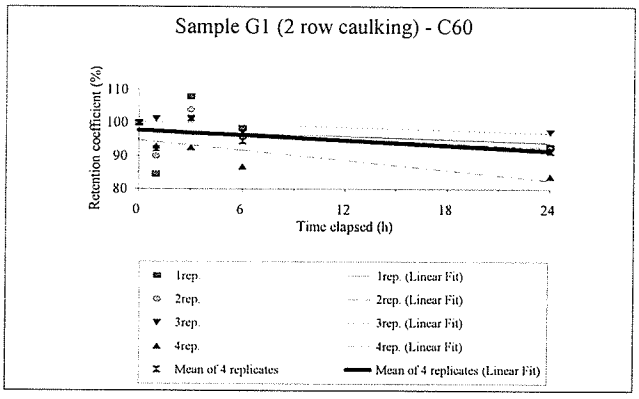
Fig. 5.11 The retention coefficient (%) for sample 0 (no seam - control) for three different initial concentrations using wheat (11.8% m.c.) filled bin and empty bin.

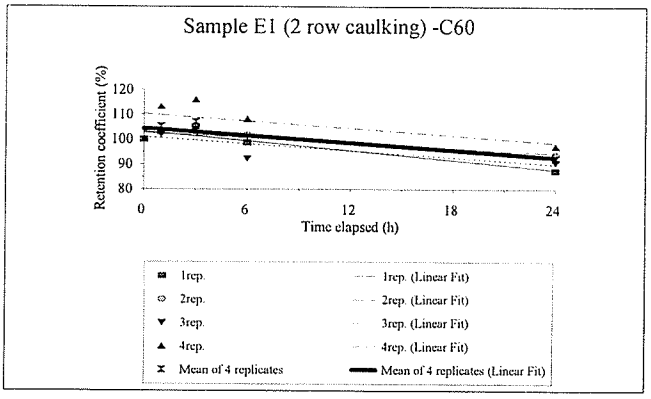












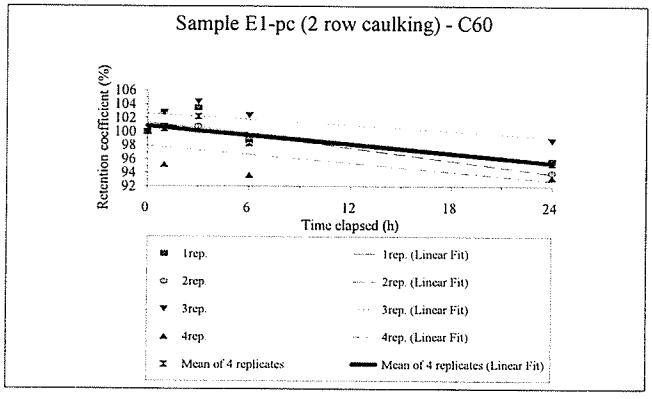
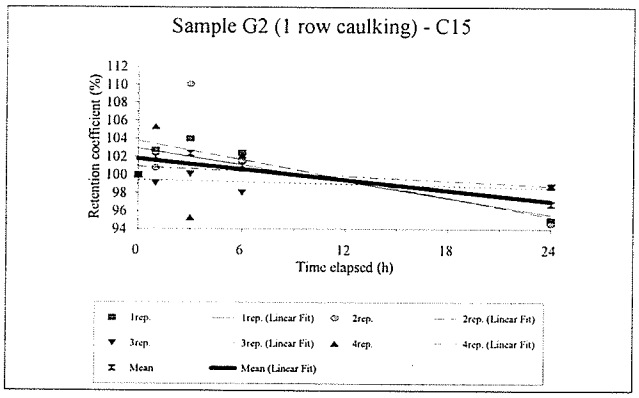
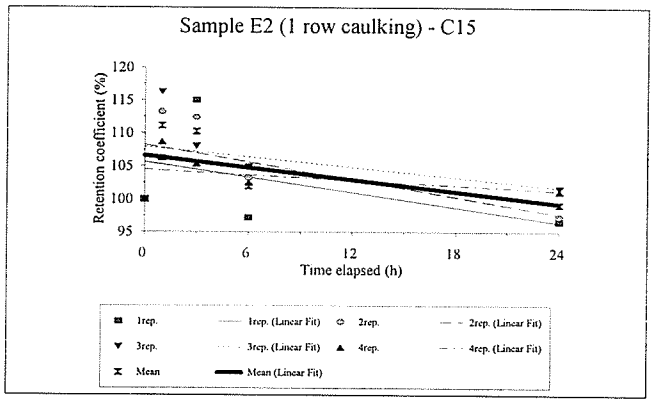
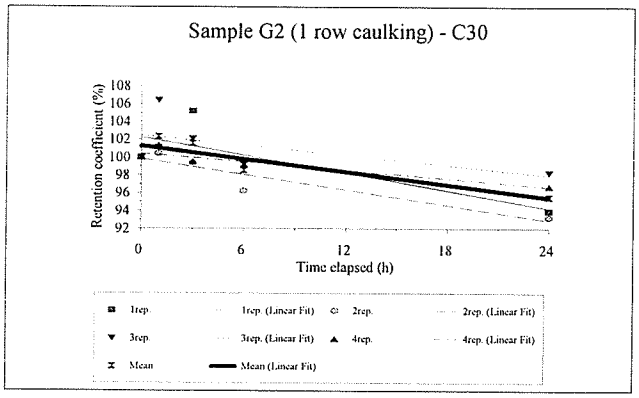
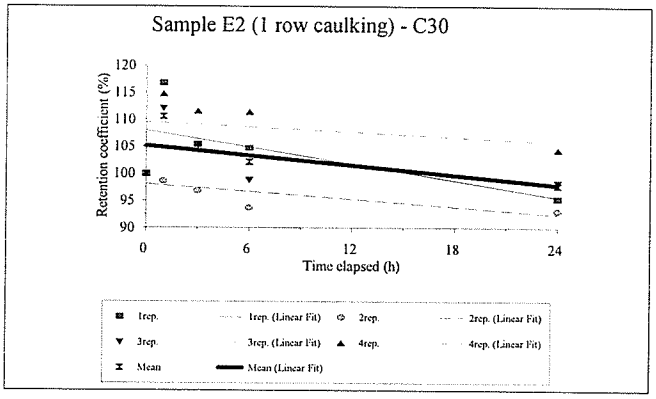


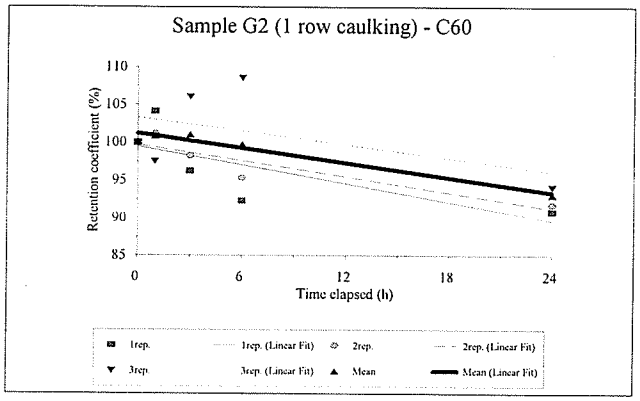
Fig. 5.12 The retention coefficient (%) after 24 h for sample 1 (2 row caulking) for three different initial concentrations using wheat (11.8% m.c.) filled bin and empty bin.

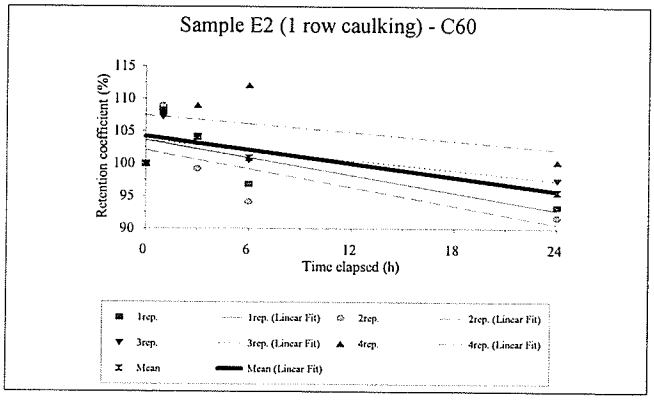












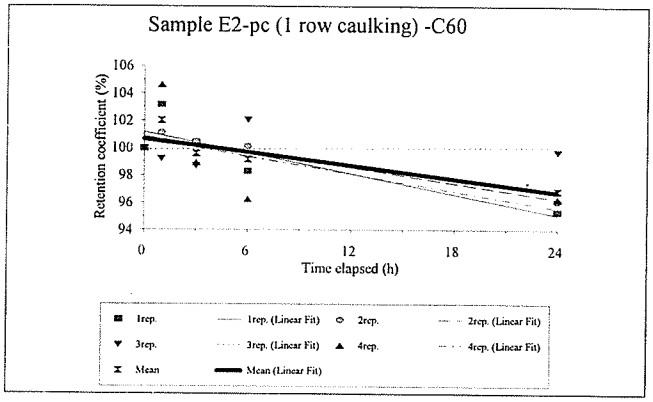
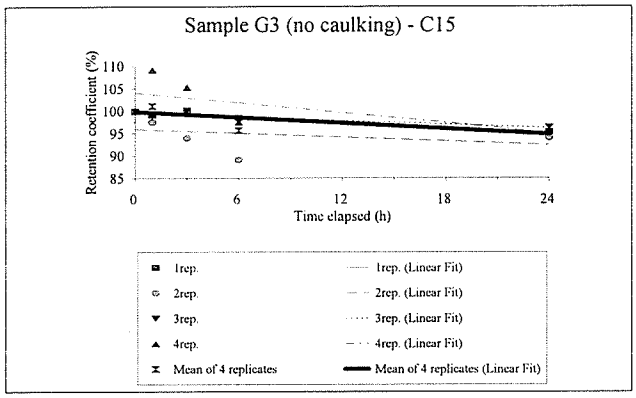
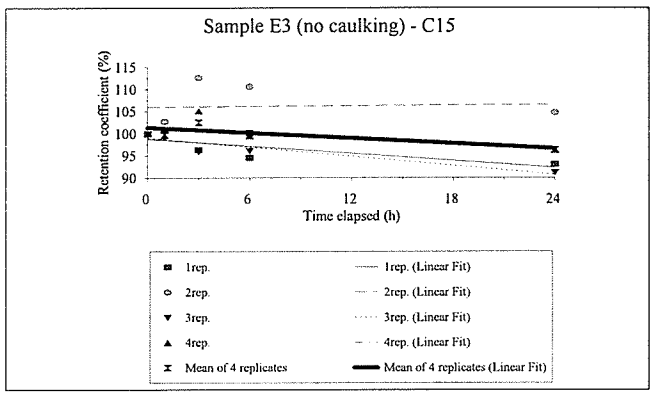
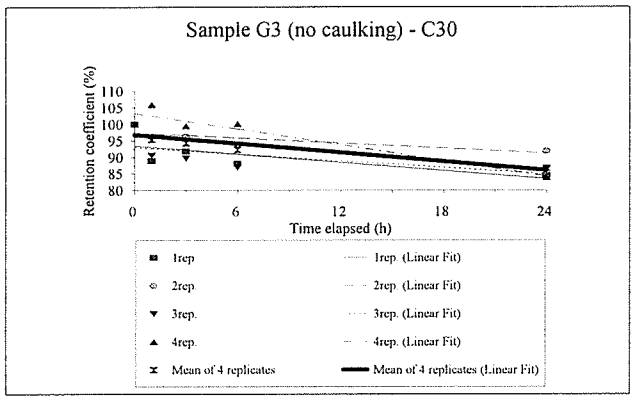
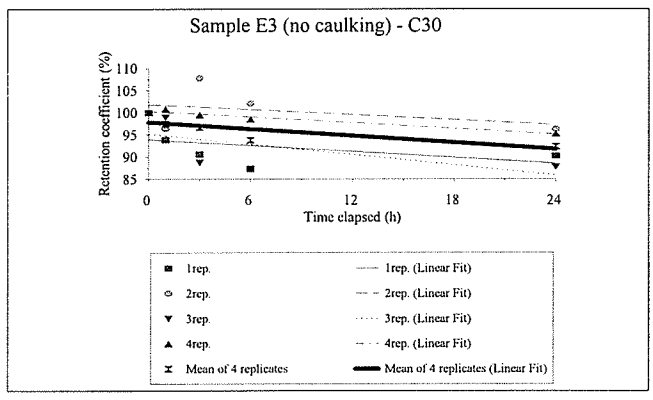


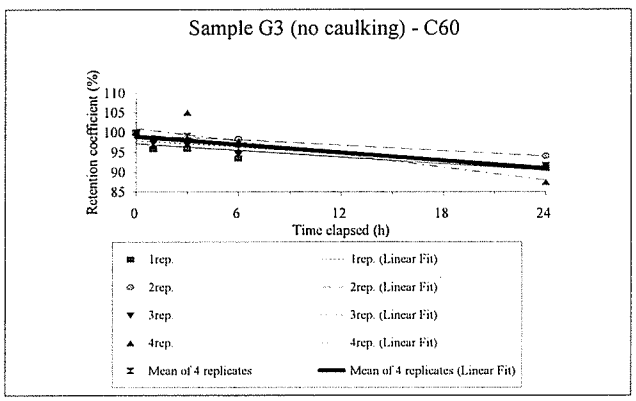
Fig. 5.13 The retention coefficient (%) after 24 h for sample 2 (1 row caulking) for three different initial concentrations using wheat (11.8% m.c.) filled bin and empty bin.

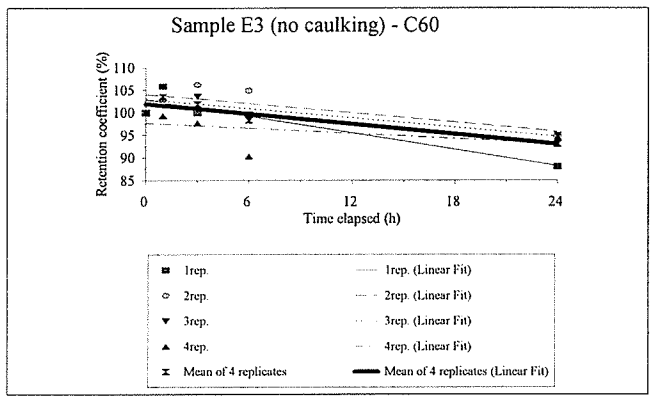












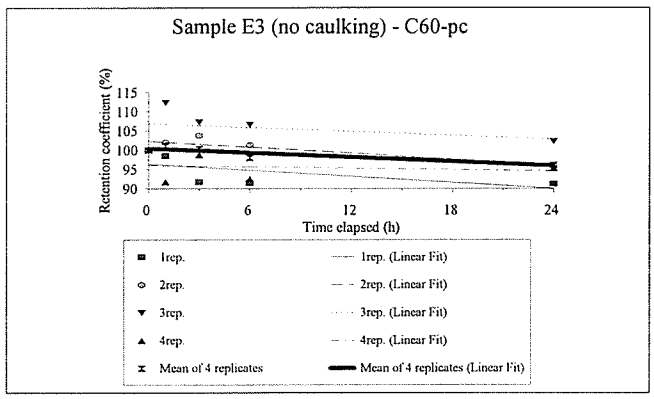


Fig. 5.14 The retention coefficient (%) after 24 h for sample 3 (no caulking) for three different initial concentrations using wheat (11.8% m.c.) filled bin and empty bin.

where: $\eta_{retention}$ = amount of CO_2 remaining in the bin after 24 h as a percentage of initial concentration (%),
C_{24h} = CO_2 concentration after 24 h (%),
C_{0h} = initial CO_2 concentration (%).

The lowest coefficient of retention $\eta_{retention}$ for all the tests was 83.9%, and varied among samples in the range of 96.5 to 100.8% (mean 98.2%) for control sample 0 (no seam), 83.9 to 97.2% (mean 94.2%) for sample 1 (2 row caulking), 91.8 to 98.8% (mean 95.2%) for sample 2 (1 row caulking), and 83.9 to 96.3% (mean 91.0%) for sample 3 (no caulking), for the tests carried out on the bins filled with wheat.

For the tests carried out using the empty bin, the retention coefficient of CO_2 was greater than for the tests carried out using the bin filled with wheat. The coefficient of CO_2 retention ranged from 97.7 to 105.8% (mean 100.1%) for the control sample (no seam), from 87.5 to 105.6% (mean 96.6%) for the sample 1 (2 row caulking), from 93.2 to 104.5% (mean 97.6%) for the sample 2 (1 row caulking), and from 88.1 to 104.8% (mean 93.9%) for the sample 3 (no caulking).

The sample 2 (1 row caulking) had mean retention coefficients that were only slightly higher than for the sample 1 (2 row caulking). This confirmed the pressure decay test results which showed that one and two rows of caulking sealing performed similarly. A decrease in the retention coefficients with an increase in initial CO_2 concentrations was observed especially at CO_2 initial concentrations corresponding to 15 and 60 min purging times.

The analysis of variance was performed on the CO_2 concentration decay time data set (Table 5.3) using the General Linear Model (GLM) Procedure from the Statistical

Analysis System (SAS 5.16, 1986 SAS Institute Inc., Cary, NC 27511) software package.

The experiment was designed as the Completely Randomized Design (CRD) with 3-way factorial treatment structure (4x3x2). There were a total of 96 treatments including combinations of four replicates, four methods of sealing (S0, S1, S2, S3), three initial CO_2 concentrations (C15, C30, C60), and two levels of the presence of grain in the bin (G-grain, E-empty). The model of this experiment was similar to gauge pressure decay tests (equation 5.1). The experiment was reliable because the variations in the results were reasonably taken into account by the model as indicated by the coefficient of variation (CV) which had a very small value of 3.45, although the coefficient of determination (r^2) was only 0.59. The tested null hypotheses were that there were no differences between means. In case of rejection of the null hypotheses, the alternative hypotheses, that the means were significantly different, were accepted.

An analysis of variance of the coefficient of retention as influenced by the method of sealing, initial CO_2 concentration, and presence of grain in the bin is presented in Table 5.4. The analysis of variance shows that the main effects of the method of sealing, the initial CO_2 concentration, and grain presence in the bin were highly significant at 1% significance level, which means that there are significant differences between the means of the coefficients of the CO_2 retention for various methods of sealing and for various initial concentrations in the empty bins as well as in the bins filled with wheat, therefore the null hypotheses can be rejected. The interactions between the factors are not significant at 1% significance level.

Table 5.4 Analysis of variance of the coefficients of CO_2 retention (%) after 24 h as influenced by the method of sealing, initial CO_2 concentration and presence of grain in the bin.

Source of variation	Degrees of freedom (DF)	Sum of squares (SS)	Mean square (MS)	F value	Pr>F
S_i	3	535.45	178.48	16.35	0.01% **
C_j	2	280.55	140.27	12.85	0.01% **
G_k	1	134.19	134.19	12.29	0.08% **
$S_i \times C_j$	6	130.87	21.81	2.00	7.71% ns
$S_i \times G_k$	3	3.95	1.32	0.12	94.77% ns
$C_j \times G_k$	2	6.22	3.11	0.28	75.29% ns
$S_i \times C_j \times G_k$	6	29.85	4.98	0.46	83.86% ns
Error	72	786.02	10.92		
Total	95	1907.10			
Contrast	**DF**	**Contrast SS**	**Contrast MS**	**F value**	**Pr>F**
S0 vs Others	1	337.78	337.78	30.94	0.01% **
S1 vs S2	1	11.80	11.80	1.08	30.20% ns
S2 vs S3	1	182.91	182.91	16.75	0.01% **
C15 vs C30	1	138.06	138.06	12.65	0.07% **
C30 vs C60	1	19.91	19.91	1.82	18.11% ns
C15 vs C60	1	262.84	262.84	24.08	0.01% **

** =highly significant effect at 1% significance level.
ns =not significant effect.

The comparisons of the effects of the methods of sealing on the CO_2 retention in the bin indicate that there is highly significant difference between a control sample (no seam) and the remaining samples, as well as between sample 3 (no caulking) and samples 1 and 2 (2 and 1 row caulking). There is no difference between sealing with 1 and 2 row

caulking in terms of CO_2 retention. The comparisons of the effects of the initial CO_2 concentration on the retention coefficent indicate that there are significant differences between initial CO_2 concentrations created in 15 and 30 min, and between initial CO_2 concentrations created in 15 and 60 min, but between initial CO_2 concentrations created in 30 and 60 min there is no difference in their influence on the retention coefficient.

5.3.2 Carbon dioxide retention after 120 h (5 days) The CO_2 concentrations after 120 h from the three replicates of the tests on three samples, representing three different methods of sealing, for the bins filled with wheat at 11.8% m.c. were determined (Appendix D). The amount of CO_2 retained after 120 h as percentage of the initial concentration was used to compare the efficiency of CO_2 retention ($\eta_{retention}$) among three methods of sealing.

After 120 h, the retention coefficient for the sample with two rows caulking was 83.7% (Fig.5.15.a), with one row caulking was 73.0% (Fig.5.15.b), and without any caulking 66.0 % (Fig.5.15.c). Comparing these values to the values of the retention coefficient means (from 3 replicates) after 24 h, which were 94.1, 92.2, and 92.2%, respectively for samples 1, 2, and 3, it is apparent that after 24 h, coefficients of retention are very close to each other, and the method of sealing effects the rate of the CO_2 decay to a very small degree, but after 120 h the differences between samples are more reasonable, and the conclusion about differences between methods of sealing can be made. In this case, the method of sealing with two rows caulking was better in retaining CO_2 than one row caulking, and much better than when no caulking was applied.

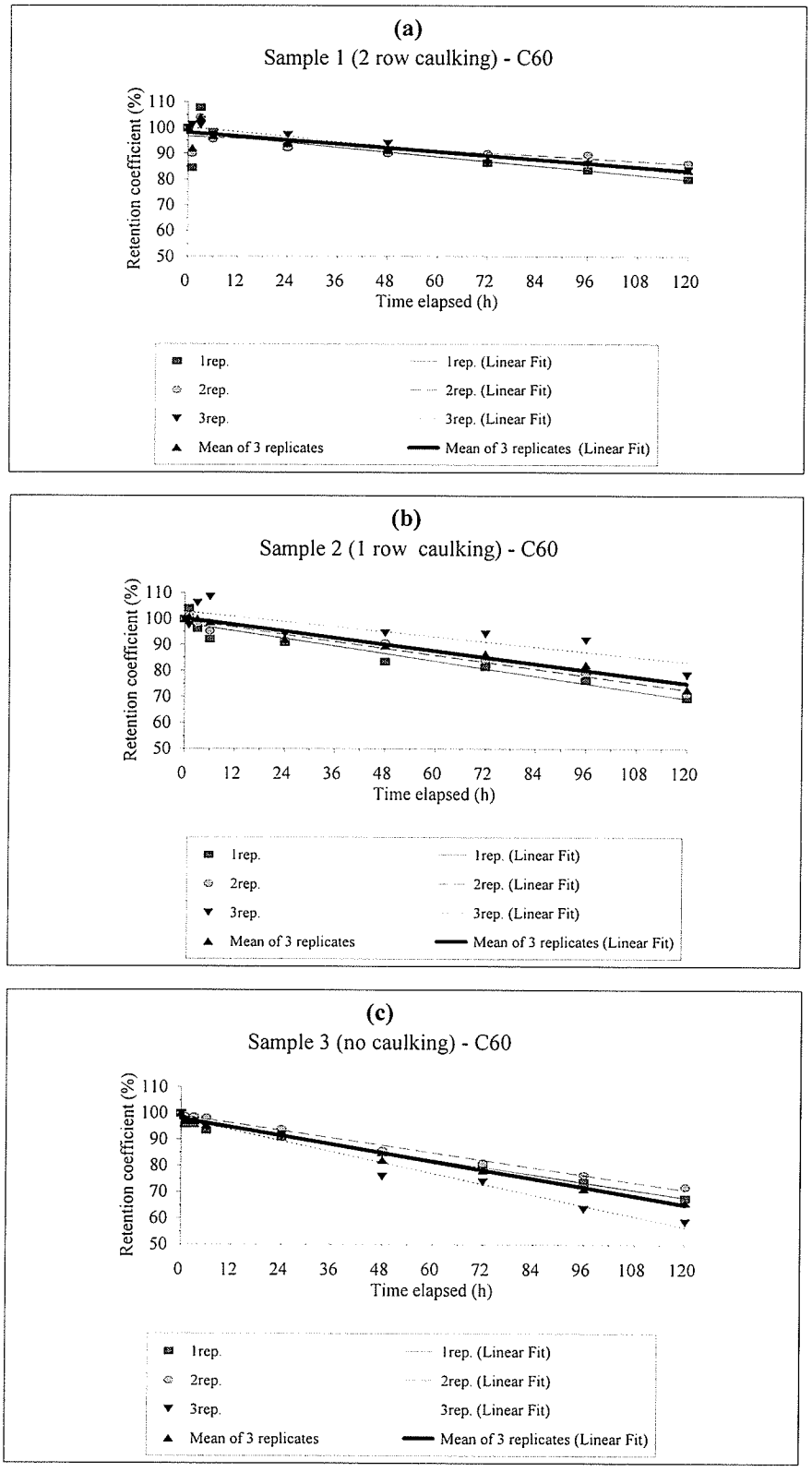


Fig. 5.15 The retention coefficient (%) after 120 h for samples 1, 2, and 3 using wheat (11.8% m.c.) filled bin.

5.4 Analysis of covariance of the relationship between pressure decay times to half level and CO_2 retention coefficients after 24 h

The relationship between pressure and CO_2 can be explained using analysis of covariance. A linear regression line was fitted which in its general form is:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \qquad (5.4)$$

where:

Y_i = the observation at the ith interval of X_i with a residual error of ε_i,
β_0 = the intercept,
β_1 = the slope or regression coefficient.

The linear relationship found between the pressure decay time to half level, chosen arbitrarily as the independent variable, and the CO_2 retention coefficient after 24 h is given below :

$$\mathbf{Y = 93.86 + 0.013\ X} \qquad (5.5)$$

Analysis of covariance showed a highly significant linear relationship between pressure decay times and CO_2 retention coefficients, because T-value for the regression coefficient was highly significant (T = 183.82, Prob > |T|=0.0001). Significance of the intercept value was also high (T = 6.281, Prob>|T|=0.0001). The high F-value of 39.45 at the 1% significance level of the regression model indicates that model was chosen correctly. A low CV value of 3.9 indicates that the experiment was reliable. An estimate of the closeness of the regression is found from the coefficient of determination (r^2). Unfortunately the r^2-value is only 32.75%, which indicates the large unexplained variation in Y. The graph showing the predicted linear relationship using the mean data values is given in Figure 5.16.

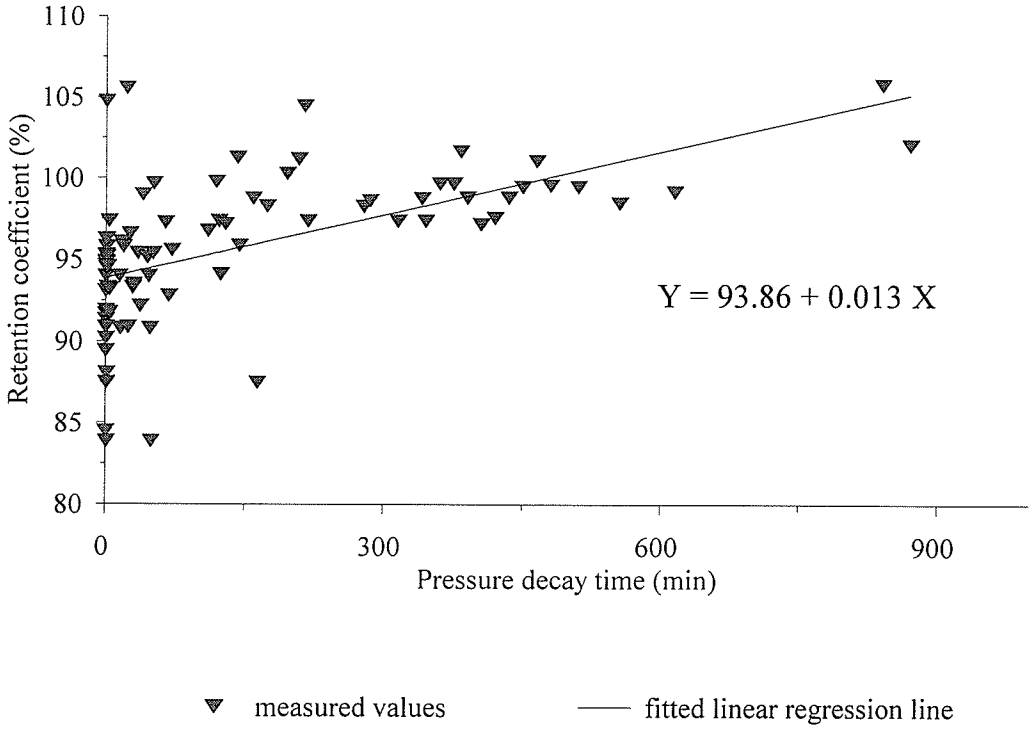


Fig. 5.16 Plot of the fitted linear regression line of the relationship between retention coefficient (%) after 24 h and pressure decay times to half level (min).

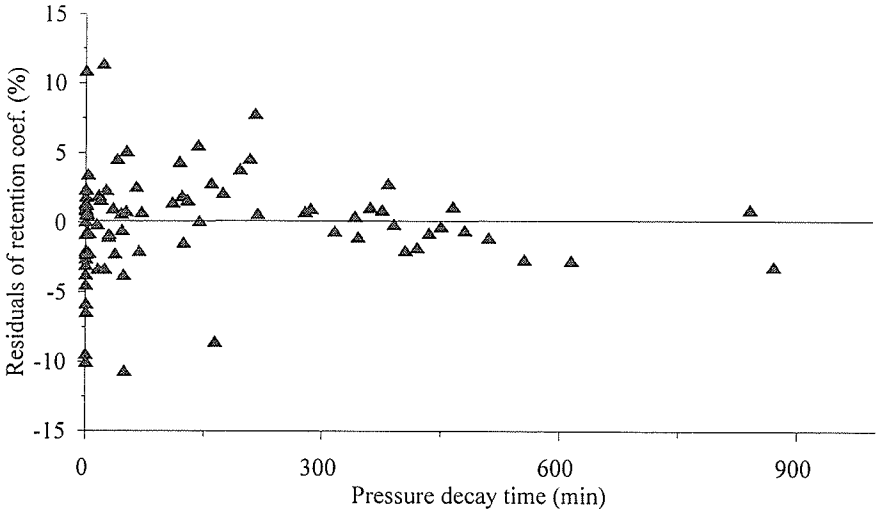


Fig. 5.17 Plot of the residuals of the fitted linear regression line of the relationship between retention coefficients (%) after 24 h and pressure decay times to half level (min).

The predicted residuals of the mean values were computed using the SAS GLM procedure from the Statistical Analysis System (SAS 5.16, 1986 SAS Institute Inc., Cary, NC 27511) and the plot is given in Figure 5.17. The residuals were plotted evenly above and below the zero residual line indicating that there was a significant correlation between the data.

If we assume that the variables are not expressed as a function of the other, and they are not one dependent and one independent variables, we can do a correlation analysis, whose goal is to determine whether two variables are related or not. I did a correlation analysis using the SAS CORR procedure between gauge pressure decay times to half level, and the mean of the CO_2 retention coefficient (after 24 h). The Pearson Correlation Coefficient was found to be 0.5723 which shows that there is a positive correlation between variables. The value of the correlation coefficient is highly significant (Prob>|R| = 0.0001).

5.5 Effect of additional protective coating (flexible membrane resin) on the CO_2 leakage from the bins

For the CO_2 purging time of 60 min in the empty bins, the gauge pressure decay (Table 5.1) and the CO_2 concentration decay (Table 5.3) tests were conducted for three methods of sealing when the seams were covered with additional protective coating (PC-tests) i.e. covered with the flexible membrane resin, a new product of the Niagara Protective Coatings (7071 Oakwood Drive, Niagara Falls, ON).

The comparison of the results of the pressure decay tests conducted on the

samples with the seam covered and not covered with the protective coating (Table 5.1) reveals that effectiveness of the additional coating is not significant for samples which have been already previously sealed with the double or single row-type Westeel butyl caulking (sample 1 and 2), but is significant when no caulking has been used before (sample 3). The means of the four replicates of the pressure decay time to half level when the sample is not covered and covered with additional coating are respectively: for sample with double row-type caulking 89 min and 89 min, for sample with single row-type caulking 112 min and 147 min, for sample without caulking 0.63 min and 34.3 min.

The results of the CO_2 decay tests indicate that the coefficients of retention for all samples increased by 1-3% when an additional coating was used. The means of the CO_2 retention coefficient in four replicates when the sample is not covered and covered with an additional coating are: for sample with double row-type caulking 92.5% and 95.4%, for sample with single row-type caulking 95.7 and 96.9%, for sample without caulking 93.1% and 96.2%, respectively.

It was expected that performance of the additional protective coating would be better. The reason for insufficient sealing by the flexible membrane resin is its high liquidity. It is very difficult to obtain a proper coating layer on the vertical bin walls.

6. CONCLUSIONS

The following conclusions can be drawn from this study:

1. Both the pressure decay and the CO_2 concentration decay tests are useful for estimating of the degree of sealing of bolted metal bins.
2. The effect of sealing was significantly different for methods with and without caulking. The effects of two methods of sealing the vertical seams of the bin walls, using single or double row-type Westeel butyl caulking, were not significantly different, but both of them were significantly different from the effect of sealing horizontal seams of the walls where no caulking was applied.
3. The pressure decay times to the half level of the initial pressure were not affected by the initial level of the CO_2 concentration in the bin, but the CO_2 retention inside the bin highly depended on it. The CO_2 retention coefficient was lower for higher initial concentrations.
4. The presence of grain in the bin affected both the pressure decay times as well as the CO_2 retention coefficients. The pressure decay times were shorter in the bin filled with grain than in the empty bin. Also the CO_2 retention coefficients were lower when the bin was filled up with grain than when the bin was empty. This pattern is explained by the phenomenon of CO_2 sorption by the grain.
5. The CO_2 retention coefficients and the pressure decay times to the half level of the initial pressure were positively correlated. The linear relationship between them has been found: $\mathbf{Y= 93.86 + 0.013\ X}$.
6. The long-term (120 h) CO_2 decay test would be more valuable than the 24 h test

for defining the relationship between pressure decay and CO_2 retention in the storage bin.

7. The effectiveness of the additional protective coating obtained by covering the seams with the flexible membrane resin was not significant when other caulking material was previously applied but was reasonable where no caulking was used.

7. RECOMMENDATIONS

The following recommendations are made from this study:

1. The experimental data obtained from this study can be used as input data for existing or newly developed mathematical models of CO_2 leakage from bolted-metal bins.

2. From a practical point of view, sealing of the horizontal seams of the bin's walls should be done during the production phase by the manufacturers because the horizontal seams are the main passage through the wall for the CO_2 gas. The flexible membrane resin is not recommended for the sealing of existing storage bins because its viscosity is too low for its application.

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Appendix A.

Experimental Data on Gauge Pressure Decay Time Tests.

Table A.0-1 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was filled with wheat (11.8% m.c.) and no carbon dioxide was added.

						Replicate No.																
Sample No.	G01-0					G02-0					G03-0					G04-0					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.6	22.3	1.3	253.9	2.539	21.2	22.0	-0.8	253.9	2.539	22.9	22.1	0.8	258.8	2.588	22.9	23.7	-0.8	255.1	2.4
15	249.1	2.491	23.8	22.5	1.3	239.3	2.393	21.0	22.0	-1.0	244.1	2.441	23.0	22.2	0.8	254.6	2.546	22.6	23.7	-1.1	246.8	6.6
30	244.1	2.441	23.7	22.5	1.2	229.5	2.295	20.9	22.0	-1.1	244.1	2.441	23.0	22.4	0.6	249.0	2.490	22.9	23.9	-1.0	241.7	8.5
45	239.3	2.393	23.5	22.5	1.0	224.6	2.246	20.8	21.8	-1.0	239.3	2.393	23.0	22.5	0.5	244.1	2.441	22.6	23.7	-1.1	236.8	8.5
60	234.4	2.344	23.5	22.7	0.8	219.7	2.197	21.0	22.0	-1.0	234.4	2.344	22.9	22.7	0.2	239.3	2.393	22.5	23.8	-1.3	231.9	8.5
75	229.5	2.295	23.8	22.9	0.8	214.8	2.148	21.0	21.8	-0.8	229.5	2.295	22.9	22.8	0.1	234.4	2.344	22.6	23.7	-1.1	227.1	8.5
90	224.6	2.246	23.5	22.9	0.6	210.0	2.100	20.8	21.8	-1.0	224.6	2.246	23.0	22.9	0.1	229.5	2.295	22.5	23.7	-1.2	222.2	8.5
105	219.7	2.197	23.7	23.2	0.5	205.1	2.051	20.8	21.8	-1.0	224.6	2.246	23.0	23.0	0.0	224.6	2.246	22.5	23.7	-1.2	218.5	9.2
120	214.8	2.148	23.7	23.1	0.6	200.2	2.002	20.8	21.8	-0.9	219.7	2.197	23.1	23.4	-0.2	224.6	2.246	22.5	23.5	-1.1	214.8	10.5
135	210.0	2.100	23.6	23.4	0.2	195.3	1.953	20.8	21.6	-0.8	219.7	2.197	23.0	23.3	-0.2	219.7	2.197	22.1	23.3	-1.2	211.2	11.5
150	205.1	2.051	23.7	23.4	0.2	190.4	1.904	21.0	21.6	-0.6	214.8	2.148	22.9	23.3	-0.4	214.8	2.148	22.0	23.1	-1.1	206.3	11.5
165	205.1	2.051	23.6	23.4	0.2	185.5	1.855	20.8	21.6	-0.7	214.8	2.148	23.1	23.6	-0.5	210.0	2.100	21.7	22.6	-1.0	203.9	12.8
180	195.3	1.953	23.7	23.7	0.0	180.7	1.807	21.0	21.6	-0.6	210.0	2.100	23.0	23.5	-0.5	205.1	2.051	21.7	22.6	-1.0	197.8	12.9
195	195.3	1.953	23.6	23.8	-0.2	175.8	1.758	21.0	21.6	-0.6	205.1	2.051	23.1	23.8	-0.7	200.2	2.002	22.0	22.9	-0.8	194.1	12.8
210	190.4	1.904	23.7	24.0	-0.4	170.9	1.709	20.8	21.7	-0.8	195.3	1.953	23.0	23.7	-0.7	195.3	1.953	22.2	23.1	-0.8	188.0	11.6
225	185.5	1.855	23.7	24.2	-0.5	166.0	1.660	20.8	21.6	-0.7	190.4	1.904	23.0	23.9	-1.0	195.3	1.953	22.0	23.1	-1.1	184.3	12.8
240	185.5	1.855	23.6	24.1	-0.5	161.1	1.611	20.8	21.7	-0.8	185.5	1.855	23.0	24.1	-1.1	190.4	1.904	22.0	23.0	-1.1	180.7	13.2
255	180.7	1.807	23.6	24.1	-0.5	156.3	1.563	21.0	21.9	-0.8	180.7	1.807	23.1	24.2	-1.1	180.7	1.807	21.7	22.8	-1.1	174.6	12.2
270	175.8	1.758	23.7	24.4	-0.7	156.3	1.563	21.0	21.9	-0.8	170.9	1.709	23.1	24.3	-1.2	180.7	1.807	21.6	22.6	-1.1	170.9	10.5
285	170.9	1.709	23.6	24.6	-1.0	151.4	1.514	21.0	22.1	-1.1	170.9	1.709	23.0	24.2	-1.2	175.8	1.758	21.4	22.5	-1.1	167.2	10.8
300	170.9	1.709	23.7	24.6	-1.0	151.4	1.514	21.2	22.3	-1.1	166.0	1.660	23.0	24.2	-1.2	170.9	1.709	21.7	22.2	-0.5	164.8	9.2
315	166.0	1.660	23.7	24.6	-1.0	146.5	1.465	21.0	22.5	-1.5	161.1	1.611	23.0	24.5	-1.4	166.0	1.660	21.8	22.0	-0.2	159.9	9.2
330	166.0	1.660	23.7	24.8	-1.1	146.5	1.465	21.2	22.5	-1.3	156.3	1.563	23.1	24.3	-1.2	166.0	1.660	21.6	22.0	-0.4	158.7	9.3
345	161.1	1.611	23.8	24.9	-1.1	141.6	1.416	21.2	22.5	-1.4	156.3	1.563	23.0	24.3	-1.3	161.1	1.611	20.9	22.0	-1.1	155.0	9.2
360	161.1	1.611	23.7	25.0	-1.3	141.6	1.416	21.1	22.7	-1.6	151.4	1.514	23.1	24.3	-1.2	156.3	1.563	20.6	21.6	-1.1	152.6	8.3
375	156.3	1.563	23.7	24.9	-1.2	136.7	1.367	21.2	22.9	-1.7	146.5	1.465	23.2	24.6	-1.4	151.4	1.514	20.7	21.5	-0.8	147.7	8.3
390	156.3	1.563	23.7	25.0	-1.3	136.7	1.367	21.2	22.9	-1.7	146.5	1.465	23.2	24.5	-1.3	151.4	1.514	20.8	21.3	-0.5	147.7	8.3
405	151.4	1.514	23.6	25.0	-1.4	136.7	1.367	21.2	23.2	-2.0	141.6	1.416	23.2	24.5	-1.3	146.5	1.465	20.8	21.1	-0.4	144.0	6.3
420	151.4	1.514	23.8	25.3	-1.6	131.8	1.318	21.2	23.1	-1.9	136.7	1.367	23.2	24.6	-1.4	141.6	1.416	20.9	21.1	-0.2	140.4	8.3
435	146.5	1.465	23.8	25.2	-1.4	131.8	1.318	21.1	23.4	-2.3	136.7	1.367	23.2	24.5	-1.3	136.7	1.367	20.9	21.0	-0.0	137.9	6.1
450	146.5	1.465	23.8	25.4	-1.7	127.0	1.270	21.1	23.4	-2.3	131.8	1.318	23.2	24.5	-1.3	136.7	1.367	21.1	21.0	0.2	135.5	8.3
465	141.6	1.416	23.8	25.3	-1.6	127.0	1.270	21.0	23.4	-2.4	127.0	1.270	23.2	24.5	-1.3	131.8	1.318	20.7	20.8	-0.1	131.8	6.9
480	141.6	1.416	23.8	25.2	-1.4	122.1	1.221	21.0	23.7	-2.7	127.0	1.270	23.3	24.5	-1.2	127.0	1.270	20.7	20.8	-0.1	129.4	8.5
495	136.7	1.367	23.6	25.3	-1.7	122.1	1.221	21.0	23.8	-2.9	122.1	1.221	23.2	24.4	-1.2	122.1	1.221	20.8	20.6	0.2	125.7	7.3
510	131.8	1.318	23.8	25.3	-1.6	117.2	1.172	21.0	24.0	-3.0	117.2	1.172	23.3	24.5	-1.2	117.2	1.172	21.1	20.5	0.7	120.8	7.3
525	131.8	1.318	23.8	25.3	-1.6	117.2	1.172	21.0	24.2	-3.2	112.3	1.123	23.4	24.6	-1.2	117.2	1.172	21.2	20.4	0.8	119.6	8.5

540	127.0	1.270	23.5	25.2	-1.7	112.3	1.123	21.0	24.1	-3.1	112.3	1.123	23.3	24.5	-1.2	112.3	1.123	21.0	20.2	0.8	116.0	7.3
555	122.1	1.221	23.3	25.2	-1.9	112.3	1.123	21.0	24.1	-3.1	107.4	1.074	23.5	24.6	-1.1	107.4	1.074	20.1	20.2	-0.1	112.3	6.9
570	122.1	1.221	23.5	25.2	-1.7	107.4	1.074	21.0	24.4	-3.4	102.5	1.025	23.5	24.6	-1.1	102.5	1.025	21.2	20.2	1.0	108.6	9.2
585	122.1	1.221	23.9	25.1	-1.2	107.4	1.074	20.9	24.6	-3.7	102.5	1.025	23.3	24.4	-1.1	102.5	1.025	21.0	20.1	0.9	108.6	9.2
600	117.2	1.172	24.0	25.0	-1.0	102.5	1.025	20.9	24.6	-3.7	97.7	0.977	23.4	24.4	-1.0	97.7	0.977	20.9	20.1	0.9	103.8	9.2
615	117.2	1.172	24.0	24.9	-0.9	102.5	1.025	20.9	24.6	-3.7	92.8	0.928	23.4	24.1	-0.7	92.8	0.928	21.1	19.9	1.2	101.3	11.5
630	117.2	1.172	23.8	24.8	-1.0	97.7	0.977	21.0	24.8	-3.8	92.8	0.928	23.3	24.1	-0.7	92.8	0.928	20.7	19.9	0.8	100.1	11.6
645	112.3	1.123	24.0	24.8	-0.8	97.7	0.977	21.2	24.9	-3.7	87.9	0.879	23.5	24.1	-0.6	92.8	0.928	20.7	19.9	0.9	97.7	10.5
660	112.3	1.123	24.0	24.9	-0.9	92.8	0.928	21.2	25.0	-3.8	87.9	0.879	23.5	24.1	-0.6	87.9	0.879	20.8	19.7	1.1	95.2	11.6
675	107.4	1.074	23.9	24.8	-0.9	92.8	0.928	21.1	24.9	-3.8	83.0	0.830	23.5	24.0	-0.5	83.0	0.830	21.1	19.7	1.5	91.6	11.5
690	107.4	1.074	23.9	24.8	-0.9	87.9	0.879	21.0	25.0	-4.0	83.0	0.830	23.5	23.9	-0.4	83.0	0.830	21.2	19.6	1.6	90.3	11.6
705	102.5	1.025	23.9	24.7	-0.8	87.9	0.879	21.2	25.0	-3.8	78.1	0.781	23.5	23.8	-0.4	78.1	0.781	21.0	19.5	1.5	86.7	11.5
720	102.5	1.025	23.9	24.7	-0.8	83.0	0.830	21.2	25.3	-4.1	78.1	0.781	23.4	23.7	-0.2	78.1	0.781	20.1	19.4	0.7	85.4	11.6
735	97.7	0.977	24.0	24.8	-0.7	83.0	0.830	21.1	25.2	-4.1	73.2	0.732	23.5	23.7	-0.1	73.2	0.732	21.2	19.5	1.7	81.8	11.5
750	97.7	0.977	24.0	24.7	-0.7	78.1	0.781	20.6	25.4	-4.8	73.2	0.732	23.5	23.6	-0.1	73.2	0.732	21.0	19.2	1.9	80.6	11.6
765	97.7	0.977	24.1	24.8	-0.7	78.1	0.781	20.9	25.3	-4.4	68.4	0.684	23.6	23.5	0.1	68.4	0.684	20.9	19.0	1.9	78.1	13.8
780	97.7	0.977	24.0	24.6	-0.6	73.2	0.732	20.8	25.2	-4.4	68.4	0.684	23.6	23.6	0.0	68.4	0.684	21.1	19.2	2.0	76.9	14.0
795	92.8	0.928	24.1	24.6	-0.5	73.2	0.732	21.0	25.3	-4.3	63.5	0.635	23.7	23.6	0.1	63.5	0.635	20.7	19.0	1.7	73.2	13.8
810	92.8	0.928	24.0	24.3	-0.2	68.4	0.684	21.0	25.3	-4.3	63.5	0.635	23.7	23.3	0.4	63.5	0.635	20.7	18.8	1.9	72.0	14.0
825	92.8	0.928	24.0	24.4	-0.4	68.4	0.684	20.8	25.3	-4.5	58.6	0.586	23.5	23.2	0.4	58.6	0.586	20.8	18.8	2.0	69.6	16.1
840	87.9	0.879	24.0	24.2	-0.2	63.5	0.635	20.8	25.2	-4.4	58.6	0.586	23.6	23.3	0.4	58.6	0.586	21.1	18.7	2.5	67.1	14.0
855	87.9	0.879	24.1	24.2	-0.1	63.5	0.635	20.4	25.0	-4.6	53.7	0.537	23.8	23.3	0.5	53.7	0.537	21.2	18.7	2.5	64.7	16.1
870	87.9	0.879	24.2	24.1	0.1	58.6	0.586	20.9	24.9	-3.9	48.8	0.488	23.8	23.2	0.6	48.8	0.488	21.0	18.4	2.6	61.0	18.5
885	83.0	0.830	24.2	24.2	0.0	58.6	0.586	20.8	24.9	-4.1	48.8	0.488	23.7	23.0	0.7	48.8	0.488	21.1	18.5	2.6	59.8	16.1
900	83.0	0.830	24.1	23.9	0.2	48.8	0.488	21.0	24.9	-3.9	43.9	0.439	23.8	23.1	0.7	48.8	0.488	21.2	18.5	2.7	56.2	18.1
915	83.0	0.830	24.3	23.9	0.4	48.8	0.488	21.0	24.8	-3.8	43.9	0.439	23.8	22.8	1.0	48.8	0.488	21.0	18.4	2.7	56.2	18.1
930	83.0	0.830	24.2	23.7	0.5	48.8	0.488	20.8	24.7	-4.0	43.9	0.439	23.8	22.9	0.8	43.9	0.439	20.9	18.3	2.6	54.9	18.9
945	78.1	0.781	24.2	23.7	0.5	43.9	0.439	20.8	24.6	-3.8	39.1	0.391	23.7	22.6	1.1	43.9	0.439	21.1	18.3	2.9	51.3	18.1
960	78.1	0.781	24.3	23.7	0.6	43.9	0.439	21.2	24.7	-3.5	39.1	0.391	23.7	22.6	1.1	39.1	0.391	20.7	18.4	2.3	50.0	18.9
975	73.2	0.732	24.1	23.5	0.6	39.1	0.391	21.2	24.7	-3.5	39.1	0.391	23.7	22.6	1.1	39.1	0.391	20.7	18.4	2.3	47.6	17.1
990	73.2	0.732	24.2	23.5	0.7	39.1	0.391	21.2	24.7	-3.5	39.1	0.391	23.8	22.3	1.4	34.2	0.342	20.8	18.3	2.5	46.4	18.1
1005	73.2	0.732	24.2	23.5	0.7	34.2	0.342	21.2	24.7	-3.5	34.2	0.342	23.8	22.3	1.4	34.2	0.342	21.1	18.1	3.0	43.9	19.5
1020	73.2	0.732	24.3	23.4	1.0	34.2	0.342	21.2	24.7	-3.5	34.2	0.342	23.6	22.0	1.6	34.2	0.342	21.2	18.1	3.1	43.9	19.5
1035	73.2	0.732	24.2	23.4	0.7	29.3	0.293	21.2	24.9	-3.6	34.2	0.342	23.6	22.0	1.6	29.3	0.293	21.0	18.5	2.5	41.5	21.3
1050	73.2	0.732	24.1	23.2	1.0	29.3	0.293	21.2	24.7	-3.5	34.2	0.342	23.7	22.0	1.7	29.3	0.293	21.1	18.2	2.9	41.5	21.3
1065	68.4	0.684	24.2	23.0	1.2	24.4	0.244	21.4	24.8	-3.4	34.2	0.342	23.6	21.8	1.8	29.3	0.293	21.2	18.4	2.8	39.1	19.9
1080	68.4	0.684	24.2	23.2	1.1	24.4	0.244	21.4	24.6	-3.2	34.2	0.342	23.8	22.0	1.8	29.3	0.293	21.0	18.6	2.4	39.1	19.9
1095	68.4	0.684	24.4	23.3	1.1	19.5	0.195	21.4	24.6	-3.2	34.2	0.342	23.7	21.8	1.9	24.4	0.244	20.9	18.9	2.0	36.6	22.0
1110	68.4	0.684	24.2	22.9	1.3	19.5	0.195	21.4	24.3	-2.9	29.3	0.293	23.6	21.8	1.8	24.4	0.244	21.1	18.9	2.2	35.4	22.3
1125	68.4	0.684	24.1	22.7	1.4	19.5	0.195	21.4	24.4	-3.0	29.3	0.293	23.7	21.8	1.9	24.4	0.244	20.7	19.2	1.5	35.4	22.3
1140	68.4	0.684	24.2	22.8	1.4	14.6	0.146	21.4	24.2	-2.8	29.3	0.293	23.7	21.8	1.9	24.4	0.244	21.1	19.4	1.8	34.2	23.6
1155	63.5	0.635	24.2	22.8	1.4	9.8	0.098	21.4	24.2	-2.8	29.3	0.293	23.7	21.6	2.0	19.5	0.195	21.2	19.6	1.6	30.5	23.4
1170	63.5	0.635	24.4	22.7	1.7						24.4	0.244	23.6	21.6	2.0	19.5	0.195	21.0	19.8	1.2	26.9	26.6

Table A.0-2 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 15 min.

						Replicate No.																
Sample No.	G01-15					G02-15					G03-15					G04-15						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.6	23.7	-0.1	253.9	2.539	21.1	20.7	0.4	253.9	2.539	21.5	22.0	-0.5	253.9	2.539	23.0	21.8	1.2	253.9	0.0
15	249.0	2.490	23.8	23.7	0.1	244.1	2.441	21.1	20.8	0.2	239.3	2.393	21.5	22.0	-0.5	244.1	2.441	22.9	21.7	1.2	244.1	4.0
30	239.3	2.393	23.7	23.8	-0.1	234.4	2.344	21.2	20.7	0.5	234.4	2.344	21.5	22.0	-0.5	234.4	2.344	22.9	21.9	1.0	235.6	2.4
45	234.4	2.344	23.5	23.9	-0.4	229.5	2.295	21.1	20.6	0.5	229.5	2.295	21.5	21.8	-0.3	224.6	2.246	22.9	22.0	1.0	229.5	4.0
60	229.5	2.295	23.5	24.0	-0.5	219.7	2.197	21.1	20.5	0.6	229.5	2.295	21.6	22.0	-0.3	219.7	2.197	22.9	21.8	1.1	224.6	5.6
75	224.6	2.246	23.8	24.0	-0.3	210.0	2.100	21.2	20.5	0.7	224.6	2.246	21.6	21.8	-0.1	210.0	2.100	22.9	22.0	1.0	217.3	8.5
90	219.7	2.197	23.5	24.2	-0.7	205.1	2.051	21.0	20.4	0.6	214.8	2.148	21.6	21.8	-0.1	200.2	2.002	22.8	21.8	1.0	210.0	8.9
105	214.8	2.148	23.7	24.4	-0.7	195.3	1.953	21.1	20.3	0.7	205.1	2.051	21.9	21.8	0.1	195.3	1.953	23.1	22.1	1.0	202.6	9.3
120	210.0	2.100	23.7	24.4	-0.7	190.4	1.904	21.1	20.3	0.7	195.3	1.953	21.8	21.8	0.0	185.5	1.855	23.0	22.0	1.0	195.3	10.5
135	205.1	2.051	23.6	24.5	-0.9	180.7	1.807	21.2	20.3	0.9	190.4	1.904	21.9	21.6	0.3	180.7	1.807	23.0	22.0	1.0	189.2	11.5
150	200.2	2.002	23.7	24.5	-0.9	175.8	1.758	21.0	20.5	0.6	180.7	1.807	22.1	21.6	0.5	170.9	1.709	23.0	22.1	0.8	181.9	12.8
165	195.3	1.953	23.6	24.8	-1.2	170.9	1.709	21.1	20.1	1.0	175.8	1.758	22.0	21.6	0.4	166.0	1.660	22.8	22.1	0.7	177.0	12.8
180	190.4	1.904	23.7	24.9	-1.2	166.0	1.660	21.1	20.1	1.0	170.9	1.709	21.9	21.6	0.4	161.1	1.611	22.8	22.0	0.8	172.1	12.8
195	185.5	1.855	23.6	24.9	-1.3	156.3	1.563	21.2	20.1	1.2	166.0	1.660	22.0	21.6	0.4	161.1	1.611	22.8	22.0	0.8	167.2	12.8
210	180.7	1.807	23.7	24.9	-1.3	151.4	1.514	21.0	20.2	0.9	166.0	1.660	22.1	21.7	0.4	156.3	1.563	22.8	22.1	0.7	163.6	12.9
225	175.8	1.758	23.7	25.1	-1.4	146.5	1.465	21.1	20.1	1.0	161.1	1.611	21.9	21.6	0.4	156.3	1.563	22.8	22.1	0.7	159.9	12.2
240	170.9	1.709	23.6	25.3	-1.7	141.6	1.416	21.1	19.9	1.2	161.1	1.611	22.1	21.7	0.4	151.4	1.514	22.8	22.0	0.8	156.3	12.6
255	166.0	1.660	23.6	25.3	-1.6	136.7	1.367	21.2	20.1	1.1	151.4	1.514	22.0	21.9	0.1	151.4	1.514	22.8	22.0	0.8	151.4	12.0
270	166.0	1.660	23.7	25.3	-1.6	131.8	1.318	21.0	19.8	1.3	151.4	1.514	21.9	21.9	0.0	146.5	1.465	22.8	22.0	0.8	148.9	14.1
285	161.1	1.611	23.6	25.3	-1.7	127.0	1.270	21.1	20.0	1.1	146.5	1.465	21.7	22.1	-0.4	146.5	1.465	22.8	22.0	0.8	145.3	14.0
300	156.3	1.563	23.7	25.5	-1.8	122.1	1.221	21.1	19.8	1.3	141.6	1.416	21.6	22.3	-0.6	141.6	1.416	22.8	21.8	1.0	140.4	14.0
315	151.4	1.514	23.7	25.7	-2.1	122.1	1.221	21.2	19.8	1.4	141.6	1.416	21.6	22.5	-0.8	141.6	1.416	22.8	21.8	1.0	139.2	12.3
330	146.5	1.465	23.7	25.6	-1.9	107.4	1.074	21.0	19.8	1.2	136.7	1.367	21.9	22.5	-0.6	136.7	1.367	22.8	21.8	1.0	131.8	16.9
345	141.6	1.416	23.8	25.7	-2.0	107.4	1.074	21.1	19.8	1.3	131.8	1.318	21.8	22.5	-0.7	136.7	1.367	22.8	21.8	1.0	129.4	15.2
360	136.7	1.367	23.7	25.6	-2.0	102.5	1.025	21.1	19.4	1.7	131.8	1.318	21.9	22.7	-0.8	131.8	1.318	22.6	21.8	0.8	125.7	15.6
375	136.7	1.367	23.7	25.8	-2.1	97.7	0.977	21.2	19.4	1.8	127.0	1.270	22.1	22.9	-0.8	131.8	1.318	22.6	21.8	0.8	123.3	17.5
390	131.8	1.318	23.7	25.9	-2.2	97.7	0.977	21.0	19.4	1.7	127.0	1.270	22.1	22.9	-0.8	127.0	1.270	22.5	21.4	1.1	120.8	15.6
405	127.0	1.270	23.6	25.8	-2.2	92.8	0.928	21.1	19.6	1.5	122.1	1.221	22.0	23.2	-1.2	122.1	1.221	22.5	21.5	1.0	116.0	15.6
420	127.0	1.270	23.8	25.8	-2.0	87.9	0.879	21.1	19.6	1.5	117.2	1.172	21.9	23.1	-1.2	117.2	1.172	22.6	21.5	1.1	112.3	16.9
435	122.1	1.221	23.8	25.8	-2.0	87.9	0.879	21.2	19.6	1.6	117.2	1.172	22.0	23.4	-1.4	117.2	1.172	22.6	21.5	1.1	111.1	15.6
450	117.2	1.172	23.8	25.7	-1.9	83.0	0.830	21.0	19.5	1.5	112.3	1.123	22.1	23.4	-1.3	112.3	1.123	23.0	21.3	1.7	106.2	15.6
465	117.2	1.172	23.8	25.8	-2.0	78.1	0.781	21.1	19.2	1.9	107.4	1.074	21.9	23.4	-1.4	107.4	1.074	22.9	21.3	1.7	102.5	16.9
480	112.3	1.123	23.8	26.0	-2.2	78.1	0.781	21.1	19.6	1.5	107.4	1.074	22.1	23.7	-1.6	102.5	1.025	22.9	21.4	1.5	100.1	15.2
495	107.4	1.074	23.6	26.0	-2.3	73.2	0.732	21.2	19.2	2.0	102.5	1.025	22.1	23.8	-1.7	97.7	0.977	22.9	21.2	1.7	95.2	15.2
510	107.4	1.074	23.8	25.8	-2.0	73.2	0.732	21.0	19.4	1.6	97.7	0.977	21.9	24.0	-2.1	92.8	0.928	22.9	21.4	1.6	92.8	14.4
525	102.5	1.025	23.8	25.8	-2.0	68.4	0.684	21.1	19.3	1.8	97.7	0.977	21.7	24.2	-2.5	92.8	0.928	22.9	21.5	1.4	90.3	15.2
540	102.5	1.025	23.5	25.7	-2.2	68.4	0.684	21.1	19.3	1.8	97.7	0.977	21.6	24.1	-2.4	87.9	0.879	22.8	21.4	1.4	89.1	15.1

555	97.7	0.977	23.3	25.8	-2.5	63.5	0.635	21.2	19.1	2.1	92.8	0.928	21.6	24.1	-2.5	83.0	0.830	23.1	21.3	1.8	84.2	15.1
570	92.8	0.928	23.5	25.5	-2.0	63.5	0.635	21.0	18.9	2.1	87.9	0.879	21.9	24.4	-2.5	78.1	0.781	23.0	21.2	1.8	80.6	12.9
585	92.8	0.928	23.9	25.5	-1.6	58.6	0.586	20.7	19.1	1.6	83.0	0.830	21.8	24.6	-2.8	78.1	0.781	23.0	21.3	1.7	78.1	14.4
600	87.9	0.879	24.0	25.3	-1.4	53.7	0.537	21.1	19.0	2.1	83.0	0.830	21.9	24.6	-2.7	73.2	0.732	23.0	21.1	1.8	74.5	15.1
615	87.9	0.879	24.0	25.2	-1.2	53.7	0.537	21.1	19.3	1.8	83.0	0.830	22.1	24.6	-2.5	73.2	0.732	22.8	21.1	1.7	74.5	15.1
630	83.0	0.830	23.8	25.2	-1.4	53.7	0.537	21.2	19.0	2.2	78.1	0.781	22.0	24.8	-2.8	68.4	0.684	22.8	21.0	1.8	70.8	12.9
645	83.0	0.830	24.0	25.0	-1.0	48.8	0.488	21.0	19.3	1.8	73.2	0.732	21.9	24.9	-2.9	68.4	0.684	22.8	21.0	1.8	68.4	14.4
660	78.1	0.781	24.0	24.7	-0.7	48.8	0.488	21.1	19.0	2.1	73.2	0.732	22.0	25.0	-3.0	63.5	0.635	22.8	20.7	2.1	65.9	12.9
675	78.1	0.781	23.9	24.7	-0.8	43.9	0.439	21.1	19.1	2.0	73.2	0.732	22.1	24.9	-2.8	58.6	0.586	22.8	21.0	1.8	63.5	15.4
690	73.2	0.732	23.9	24.7	-0.8	43.9	0.439	21.2	19.2	2.0	68.4	0.684	21.9	25.0	-3.1	58.6	0.586	22.8	20.6	2.2	61.0	12.9
705	73.2	0.732	23.9	24.4	-0.4	43.9	0.439	21.0	19.4	1.6	68.4	0.684	22.1	25.0	-2.9	53.7	0.537	22.8	20.6	2.2	59.8	13.4
720	73.2	0.732	23.9	24.4	-0.4	39.1	0.391	21.1	19.4	1.7	63.5	0.635	22.1	25.3	-3.2	53.7	0.537	22.8	20.4	2.4	57.4	14.6
735	68.4	0.684	24.0	24.2	-0.2	39.1	0.391	21.1	19.2	1.9	63.5	0.635	21.9	25.2	-3.3	48.8	0.488	22.8	20.3	2.5	54.9	13.4
750	68.4	0.684	24.0	24.2	-0.2	39.1	0.391	21.2	19.1	2.1	58.6	0.586	21.7	25.4	-3.7	48.8	0.488	22.8	20.2	2.6	53.7	12.6
765	68.4	0.684	24.1	24.1	-0.0	39.1	0.391	21.0	18.9	2.1	58.6	0.586	21.6	25.3	-3.7	43.9	0.439	22.8	20.1	2.7	52.5	13.4
780	63.5	0.635	24.0	24.1	-0.1	34.2	0.342	21.1	18.8	2.3	53.7	0.537	21.6	25.2	-3.6	43.9	0.439	22.8	19.9	2.9	48.8	12.6
795	63.5	0.635	24.1	24.0	0.1	34.2	0.342	21.1	18.9	2.2	53.7	0.537	21.9	25.3	-3.4	39.1	0.391	22.8	19.9	2.9	47.6	13.4
810	63.5	0.635	24.0	23.8	0.2	34.2	0.342	21.2	18.9	2.3	48.8	0.488	21.8	25.3	-3.5	39.1	0.391	22.6	19.8	2.9	46.4	12.9
825	58.6	0.586	24.0	24.0	0.1	34.2	0.342	21.0	19.0	2.0	48.8	0.488	21.9	25.3	-3.4	39.1	0.391	22.6	19.8	2.8	45.2	10.8
840	58.6	0.586	24.0	23.7	0.3	34.2	0.342	20.7	19.0	1.7	48.8	0.488	22.1	25.2	-3.1	34.2	0.342	22.5	19.6	2.8	43.9	12.0
855	58.6	0.586	24.1	23.7	0.4	34.2	0.342	21.1	19.4	1.6	43.9	0.439	22.0	25.0	-3.0	34.2	0.342	22.5	19.8	2.7	42.7	11.5
870	58.6	0.586	24.2	23.4	0.8	34.2	0.342	21.1	19.3	1.8	43.9	0.439	21.9	24.9	-2.9	29.3	0.293	22.6	19.5	3.1	41.5	12.9
885	53.7	0.537	24.2	23.3	0.9	29.3	0.293	21.2	19.2	2.0	39.1	0.391	22.0	24.9	-2.9	29.3	0.293	22.6	19.6	3.0	37.8	11.5
900	53.7	0.537	24.1	23.1	1.0	29.3	0.293	21.0	19.4	1.7	39.1	0.391	22.1	24.9	-2.8	29.3	0.293	22.6	19.5	3.2	37.8	11.5
915	48.8	0.488	24.3	23.1	1.2	29.3	0.293	21.1	19.5	1.6	39.1	0.391	21.9	24.8	-2.9	29.3	0.293	22.6	20.1	2.5	36.6	9.3
930	48.8	0.488	24.2	23.0	1.2	29.3	0.293	21.1	19.7	1.4	34.2	0.342	22.1	24.7	-2.7	24.4	0.244	22.6	19.6	3.0	34.2	10.5
945	48.8	0.488	24.2	22.9	1.3	24.4	0.244	21.2	19.9	1.3	34.2	0.342	22.1	24.6	-2.5	24.4	0.244	22.7	19.7	3.0	33.0	11.5
960	48.8	0.488	24.3	22.9	1.4	24.4	0.244	21.0	19.5	1.5	34.2	0.342	21.9	24.7	-2.8	24.4	0.244	22.8	19.5	3.3	33.0	11.5
975	43.9	0.439	24.1	22.9	1.2	24.4	0.244	21.1	20.0	1.1	34.2	0.342	21.7	24.7	-3.0	24.4	0.244	22.8	19.5	3.3	31.7	9.3
990	43.9	0.439	24.2	22.6	1.6	24.4	0.244	21.1	20.0	1.1	29.3	0.293	21.6	24.7	-3.1	19.5	0.195	22.8	19.7	3.1	29.3	10.5
1005	43.9	0.439	24.2	22.6	1.6	24.4	0.244	21.2	20.1	1.1	29.3	0.293	21.6	24.7	-3.1	19.5	0.195	22.8	19.8	3.0	29.3	10.5
1020	39.1	0.391	24.3	22.7	1.6	19.5	0.195	21.0	20.3	0.7	29.3	0.293	21.9	24.7	-2.8	19.5	0.195	22.8	19.7	3.1	26.9	9.3
1035	39.1	0.391	24.2	22.5	1.6	19.5	0.195	21.1	20.5	0.6	29.3	0.293	21.8	24.9	-3.1	19.5	0.195	22.8	20.0	2.8	26.9	9.3
1050	39.1	0.391	24.1	22.4	1.7	19.5	0.195	21.1	20.5	0.6	24.4	0.244	21.9	24.7	-2.8	19.5	0.195	22.8	20.0	2.8	25.6	9.2
1065	39.1	0.391	24.2	22.4	1.8						24.4	0.244	22.1	24.8	-2.7	19.5	0.195	22.8	20.2	2.5	20.8	16.1
1080	39.1	0.391	24.2	22.5	1.7						24.4	0.244	22.0	24.6	-2.7	19.5	0.195	22.8	20.2	2.5	20.8	16.1
1095	39.1	0.391	24.4	22.5	1.8						24.4	0.244	21.9	24.6	-2.6	14.6	0.146	22.8	20.2	2.5	19.5	16.4
1110	34.2	0.342	24.2	22.5	1.7						24.4	0.244	22.0	24.3	-2.3	14.6	0.146	22.8	20.5	2.3	18.3	14.6
1125	34.2	0.342	24.1	22.5	1.6						19.5	0.195	22.1	24.4	-2.3	14.6	0.146	22.8	20.4	2.4	17.1	14.1
1140	34.2	0.342	24.2	22.4	1.9						19.5	0.195	21.9	24.2	-2.3	14.6	0.146	22.8	20.6	2.2	17.1	14.1
1155	34.2	0.342	24.2	22.5	1.8						19.5	0.195	22.1	24.2	-2.1	14.6	0.146	22.8	20.9	1.9	17.1	14.1
1170	34.2	0.342	24.4	22.5	1.9						19.5	0.195	22.1	24.1	-2.0	9.8	0.098	22.8	21.0	1.8	15.9	14.6
1185	34.2	0.342	24.2	22.5	1.7						19.5	0.195	21.9	24.2	-2.3	9.8	0.098	22.8	20.8	2.0	15.9	14.6

Table A.0-3 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 30 min.

Sample No.	G01-30					G02-30					G03-30					G04-30						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.3	20.4	2.9	253.9	2.539	21.3	22.8	-1.4	253.9	2.539	20.9	18.8	2.0	253.9	2.539	21.6	22.8	-1.2	253.9	0.0
15	244.1	2.441	23.5	20.7	2.8	224.6	2.246	21.1	22.8	-1.8	244.1	2.441	20.9	18.7	2.2	249.0	2.490	21.6	22.8	-1.2	240.5	10.8
30	234.4	2.344	23.6	21.5	2.2	224.6	2.246	21.2	23.0	-1.8	239.3	2.393	20.8	18.5	2.3	244.1	2.441	21.6	23.0	-1.4	235.6	8.3
45	229.5	2.295	23.3	21.3	2.0	214.8	2.148	21.0	23.0	-2.0	234.4	2.344	20.7	18.4	2.3	229.5	2.295	21.5	23.0	-1.5	227.1	8.5
60	224.6	2.246	23.5	21.6	1.9	214.8	2.148	21.2	23.0	-1.9	229.5	2.295	20.7	18.4	2.3	224.6	2.246	21.5	23.0	-1.5	223.4	6.1
75	219.7	2.197	23.6	21.7	1.9	205.1	2.051	21.4	23.4	-2.0	224.6	2.246	20.7	18.2	2.6	214.8	2.148	21.5	23.4	-1.9	216.1	8.3
90	214.8	2.148	23.8	21.8	1.9	200.2	2.002	21.2	23.2	-1.9	219.7	2.197	20.7	18.2	2.5	210.1	2.101	21.5	23.2	-1.7	211.2	8.3
105	200.2	2.002	23.8	21.6	2.2	195.3	1.953	21.2	23.3	-2.2	214.8	2.148	20.7	18.2	2.5	205.1	2.051	21.5	23.3	-1.8	203.9	8.3
120	200.2	2.002	23.9	22.0	1.9	190.4	1.904	21.2	23.3	-2.1	214.8	2.148	20.7	18.0	2.6	200.2	2.002	21.5	23.3	-1.8	201.4	10.1
135	195.3	1.953	23.3	22.2	1.1	185.5	1.855	21.3	23.4	-2.1	210.0	2.100	20.7	18.0	2.7	195.3	1.953	21.4	23.4	-2.0	196.5	10.1
150	190.4	1.904	23.5	22.2	1.4	180.7	1.807	21.4	23.5	-2.1	205.1	2.051	20.7	18.0	2.7	190.4	1.904	21.4	23.5	-2.1	191.7	10.1
165	185.5	1.855	23.6	22.1	1.6	175.8	1.758	21.6	23.4	-1.8	200.2	2.002	20.7	18.0	2.7	185.5	1.855	21.4	23.4	-2.0	186.8	10.1
180	180.7	1.807	23.8	22.0	1.8	170.9	1.709	21.3	23.6	-2.3	195.3	1.953	20.7	17.9	2.8	180.7	1.807	21.4	23.6	-2.2	181.9	10.1
195	175.8	1.758	23.8	22.1	1.7	170.9	1.709	21.5	23.7	-2.2	190.4	1.904	20.6	17.9	2.7	175.8	1.758	21.4	23.7	-2.3	178.2	8.5
210	175.8	1.758	23.9	22.3	1.5	166.0	1.660	21.7	23.7	-2.0	185.5	1.855	20.6	17.9	2.7	170.9	1.709	21.4	23.7	-2.3	174.6	8.3
225	170.9	1.709	23.3	22.5	0.8	156.3	1.563	21.5	23.9	-2.3	180.7	1.807	20.6	17.8	2.8	166.0	1.660	21.3	23.9	-2.5	168.5	10.2
240	166.0	1.660	23.5	22.3	1.2	151.4	1.514	21.4	23.9	-2.5	175.8	1.758	20.6	17.8	2.8	161.1	1.611	21.3	23.9	-2.5	163.6	10.2
255	161.1	1.611	23.6	22.1	1.6	146.5	1.465	21.5	23.7	-2.2	170.9	1.709	20.6	17.6	3.0	156.3	1.563	21.3	23.7	-2.4	158.7	10.2
270	161.1	1.611	23.8	22.2	1.5	146.5	1.465	21.6	23.7	-2.1	166.0	1.660	20.5	17.5	3.0	151.4	1.514	21.3	23.7	-2.4	156.3	8.9
285	156.3	1.563	23.8	22.1	1.7	141.6	1.416	21.6	23.9	-2.3	161.1	1.611	20.5	17.5	3.0	146.5	1.465	21.3	23.9	-2.5	151.4	8.9
300	151.4	1.514	23.9	22.0	1.9	141.6	1.416	21.7	23.8	-2.1	156.3	1.563	20.5	17.5	3.0	141.6	1.416	21.3	23.8	-2.5	147.7	7.3
315	151.4	1.514	23.5	21.8	1.7	127.0	1.270	21.6	23.9	-2.2	156.3	1.563	20.5	17.5	3.0	136.7	1.367	21.3	23.9	-2.5	142.8	13.4
330	146.5	1.465	23.5	21.7	1.8	127.0	1.270	21.4	23.8	-2.5	151.4	1.514	20.5	17.5	3.0	136.7	1.367	21.3	23.8	-2.5	140.4	10.8
345	141.6	1.416	23.4	21.8	1.6	122.1	1.221	21.5	24.0	-2.5	146.5	1.465	20.5	17.5	2.9	131.8	1.318	21.3	24.0	-2.7	135.5	10.8
360	136.7	1.367	23.2	21.7	1.4	122.1	1.221	21.4	23.8	-2.5	146.5	1.465	20.5	17.5	2.9	127.0	1.270	21.3	23.8	-2.5	133.1	10.8
375	136.7	1.367	23.0	21.5	1.4	122.1	1.221	21.4	24.0	-2.6	141.6	1.416	20.5	17.5	2.9	127.0	1.270	21.3	24.0	-2.7	131.8	8.9
390	131.8	1.318	23.0	21.4	1.6	117.2	1.172	21.2	23.8	-2.5	136.7	1.367	20.5	17.5	2.9	127.0	1.270	21.3	23.8	-2.5	128.2	8.3
405	127.0	1.270	23.0	21.5	1.4	117.2	1.172	21.2	23.8	-2.6	131.8	1.318	20.5	17.5	3.0	122.1	1.221	21.3	23.8	-2.5	124.5	6.3
420	127.0	1.270	23.1	21.4	1.7	112.3	1.123	21.2	23.8	-2.5	127.0	1.270	20.4	17.5	2.9	122.1	1.221	21.3	23.8	-2.5	122.1	6.9
435	127.0	1.270	23.1	21.3	1.8	107.4	1.074	21.3	23.8	-2.5	122.1	1.221	20.4	17.4	3.0	117.2	1.172	21.3	23.8	-2.5	118.4	8.3
450	122.1	1.221	23.2	21.2	1.9	102.5	1.025	21.4	23.6	-2.2	122.1	1.221	20.4	17.4	3.0	112.3	1.123	21.2	23.6	-2.4	114.7	9.3
465	122.1	1.221	23.3	21.4	1.9	102.5	1.025	21.6	23.6	-2.1	117.2	1.172	20.4	17.4	3.0	107.4	1.074	21.2	23.6	-2.4	112.3	8.9
480	117.2	1.172	23.0	21.1	1.9	97.7	0.977	21.3	23.6	-2.3	117.2	1.172	20.4	17.4	3.0	107.4	1.074	21.2	23.6	-2.3	109.9	9.3
495	112.3	1.123	23.3	20.9	2.4	92.8	0.928	21.5	23.6	-2.1	112.3	1.123	20.4	17.4	3.0	102.5	1.025	21.2	23.6	-2.4	105.0	9.3
510	107.4	1.074	23.5	20.6	2.9	92.8	0.928	21.7	23.6	-1.8	107.4	1.074	20.4	17.4	3.0	97.7	0.977	21.2	23.6	-2.4	101.3	7.3
525	107.4	1.074	23.6	20.5	3.1	87.9	0.879	21.5	23.6	-2.1	102.5	1.025	20.4	17.4	3.0	97.7	0.977	21.2	23.6	-2.4	98.9	8.3
540	102.5	1.025	23.3	20.2	3.1	83.0	0.830	21.4	23.5	-2.1	102.5	1.025	20.4	17.3	3.1	92.8	0.928	21.1	23.5	-2.3	95.2	9.3

555	97.7	0.977	23.5	20.4	3.1	78.1	0.781	21.5	23.3	-1.8	102.5	1.025	20.4	17.3	3.0	92.8	0.928	21.1	23.3	-2.2	92.8	10.5
570	97.7	0.977	23.6	20.2	3.4	73.2	0.732	21.6	23.4	-1.8	97.7	0.977	20.3	17.3	3.0	87.9	0.879	21.1	23.4	-2.3	89.1	11.5
585	92.8	0.928	23.3	19.7	3.6	73.2	0.732	21.6	23.3	-1.7	92.8	0.928	20.3	17.3	3.0	87.9	0.879	21.0	23.3	-2.3	86.7	9.2
600	92.8	0.928	23.5	19.6	3.9	68.4	0.684	21.7	23.4	-1.7	92.8	0.928	20.3	17.2	3.1	83.0	0.830	21.0	23.4	-2.4	84.2	11.5
615	87.9	0.879	23.6	19.7	3.9	68.4	0.684	21.6	23.1	-1.5	87.9	0.879	20.2	17.2	3.0	83.0	0.830	21.0	23.1	-2.1	81.8	9.2
630	87.9	0.879	23.8	19.7	4.1	63.5	0.635	21.4	23.1	-1.8	83.0	0.830	20.2	17.2	3.0	83.0	0.830	21.0	23.1	-2.2	79.3	10.8
645	83.0	0.830	23.8	19.6	4.2	63.5	0.635	21.5	23.2	-1.7	78.1	0.781	20.1	17.2	3.0	78.1	0.781	21.0	23.2	-2.3	75.7	8.5
660	83.0	0.830	23.9	19.5	4.4	58.6	0.586	21.4	23.1	-1.7	73.2	0.732	20.1	17.1	3.0	78.1	0.781	21.0	23.1	-2.1	73.2	10.5
675	83.0	0.830	23.3	19.1	4.2	58.6	0.586	21.4	22.9	-1.6	73.2	0.732	20.1	17.0	3.1	73.2	0.732	21.0	22.9	-2.0	72.0	10.1
690	78.1	0.781	23.5	18.9	4.6	53.7	0.537	21.2	22.9	-1.7	68.4	0.684	20.1	17.0	3.1	73.2	0.732	21.0	22.9	-2.0	68.4	10.5
705	78.1	0.781	23.6	19.3	4.3	53.7	0.537	21.2	22.9	-1.7	68.4	0.684	20.1	17.0	3.1	73.2	0.732	21.0	22.9	-1.9	68.4	10.5
720	73.2	0.732	23.8	18.8	4.9	48.8	0.488	21.2	22.6	-1.4	63.5	0.635	20.1	16.9	3.3	68.4	0.684	21.0	22.6	-1.6	63.5	10.5
735	73.2	0.732	23.8	19.1	4.6	48.8	0.488	21.3	22.6	-1.3	63.5	0.635	20.1	16.8	3.3	68.4	0.684	21.0	22.6	-1.6	63.5	10.5
750	73.2	0.732	23.9	19.0	4.8	43.9	0.439	21.4	22.7	-1.3	58.6	0.586	20.0	16.8	3.1	68.4	0.684	21.0	22.7	-1.8	61.0	12.9
765	68.4	0.684	23.3	19.0	4.3	43.9	0.439	21.6	22.7	-1.2	58.6	0.586	20.0	16.8	3.1	63.5	0.635	21.0	22.7	-1.8	58.6	10.5
780	68.4	0.684	23.5	19.1	4.4	43.9	0.439	21.3	22.6	-1.3	53.7	0.537	20.0	16.8	3.1	63.5	0.635	21.0	22.6	-1.6	57.4	10.8
795	68.4	0.684	23.6	19.3	4.4	39.1	0.391	21.5	22.6	-1.0	53.7	0.537	20.0	16.8	3.2	58.6	0.586	21.0	22.6	-1.6	54.9	12.2
810	63.5	0.635	23.8	18.9	4.9	39.1	0.391	21.7	22.5	-0.8	48.8	0.488	20.0	16.7	3.2	58.6	0.586	21.0	22.5	-1.5	52.5	10.8
825	63.5	0.635	23.8	18.7	5.1	34.2	0.342	21.5	22.4	-0.9	48.8	0.488	20.0	16.7	3.2	58.6	0.586	20.8	22.4	-1.5	51.3	12.9
840	58.6	0.586	23.9	18.7	5.2	34.2	0.342	21.4	22.4	-1.0	43.9	0.439	20.0	16.7	3.3	58.6	0.586	20.8	22.4	-1.5	48.8	12.0
855	58.6	0.586	23.5	18.5	5.0	34.2	0.342	21.5	22.2	-0.7	43.9	0.439	20.0	16.7	3.3	53.7	0.537	20.8	22.2	-1.4	47.6	10.8
870	58.6	0.586	23.5	18.5	5.0	29.3	0.293	21.6	22.2	-0.7	43.9	0.439	20.0	16.7	3.3	53.7	0.537	20.8	22.2	-1.4	46.4	12.9
885	58.6	0.586	23.4	18.7	4.7	29.3	0.293	21.6	22.2	-0.7	39.1	0.391	20.0	16.6	3.3	53.7	0.537	20.8	22.2	-1.4	45.2	13.4
900	53.7	0.537	23.2	18.8	4.4	29.3	0.293	21.7	22.3	-0.7	39.1	0.391	20.0	16.6	3.4	48.8	0.488	20.8	22.3	-1.5	42.7	10.8
915	53.7	0.537	23.0	18.7	4.3	24.4	0.244	21.6	22.0	-0.4	34.2	0.342	20.0	16.6	3.4	48.8	0.488	20.8	22.0	-1.3	40.3	13.4
930	53.7	0.537	23.0	18.7	4.3	24.4	0.244	21.4	22.0	-0.7	34.2	0.342	20.0	16.6	3.4	48.8	0.488	20.8	22.0	-1.3	40.3	13.4
945	48.8	0.488	23.0	18.9	4.0	24.4	0.244	21.5	22.2	-0.7	34.2	0.342	20.0	16.5	3.4	43.9	0.439	20.8	22.2	-1.4	37.8	10.8
960	48.8	0.488	23.1	18.7	4.4	24.4	0.244	21.4	22.0	-0.7	29.3	0.293	20.0	16.5	3.4	43.9	0.439	20.8	22.0	-1.3	36.6	11.6
975	48.8	0.488	23.1	18.4	4.8	19.5	0.195	21.4	22.0	-0.7	29.3	0.293	19.9	16.5	3.4	39.1	0.391	20.8	22.0	-1.3	34.2	12.6
990	43.9	0.439	23.2	19.2	4.0	19.5	0.195	21.2	21.9	-0.7	29.3	0.293	19.9	16.5	3.4	39.1	0.391	20.8	21.9	-1.1	33.0	10.8
1005	43.9	0.439	23.3	19.9	3.4	19.5	0.195	21.2	22.0	-0.8	24.4	0.244	19.9	16.5	3.4	39.1	0.391	20.8	22.0	-1.2	31.7	11.6
1020	39.1	0.391	23.0	19.6	3.4	19.5	0.195	21.2	21.9	-0.7	24.4	0.244	19.9	16.4	3.5	39.1	0.391	20.8	21.9	-1.1	30.5	10.1
1035	39.1	0.391	22.6	19.5	3.1	19.5	0.195	21.3	22.0	-0.7	24.4	0.244	19.9	16.3	3.6	39.1	0.391	20.8	22.0	-1.2	30.5	10.1
1050	39.1	0.391	22.6	19.0	3.6	19.5	0.195	21.4	22.0	-0.6	24.4	0.244	19.9	16.3	3.6	39.1	0.391	20.8	22.0	-1.2	30.5	10.1
1065	39.1	0.391	22.6	18.6	4.1		0.000				19.5	0.195	19.9	16.2	3.7	39.1	0.391	20.8	22.1	-1.3	24.4	18.7
1080	39.1	0.391	23.0	18.5	4.6		0.000				19.5	0.195	19.9	16.1	3.8	39.1	0.391	20.8	22.0	-1.2	24.4	18.7
1095	39.1	0.391	23.3	18.4	4.9		0.000				19.5	0.195	19.9	16.1	4.3	34.2	0.342	20.8	22.0	-1.2	23.2	17.5
1110	39.1	0.391	23.5	18.4	5.2		0.000				19.5	0.195	19.7	15.9	4.1	34.2	0.342	20.8	22.1	-1.3	23.2	17.5
1125	39.1	0.391	23.6	18.9	4.7		0.000				19.5	0.195	19.7	15.7	3.8	29.3	0.293	20.8	22.1	-1.3	22.0	16.7
1140	34.2	0.342	23.8	19.6	4.2		0.000				19.5	0.195	19.7	15.7	3.7	29.3	0.293	20.5	22.1	-1.6	20.8	15.1
1155	34.2	0.342	23.8	19.6	4.1		0.000					0.000				29.3	0.293	20.5	22.0	-1.4	15.9	18.4
1170	29.3	0.293	23.9	19.3	4.6		0.000					0.000				29.3	0.293	20.5	22.1	-1.6	14.6	16.9
1185	29.3	0.293	23.3	19.0	4.3		0.000					0.000				24.4	0.244	20.5	22.1	-1.6	13.4	15.6

Table A.0-4 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 60 min.

Sample No.	G01-60					G02-60					G03-60					G04-60					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.2	18.6	2.6	253.9	2.539	22.8	23.8	-1.0	253.9	2.539	23.1	22.8	0.4	253.9	2.539	23.3	23.8	-0.5	253.9	0.0
15	239.3	2.393	21.0	18.7	2.4	244.1	2.441	22.8	23.9	-1.0	244.1	2.441	23.2	22.8	0.4	224.6	2.246	23.5	23.5	0.0	238.0	9.2
30	229.5	2.295	20.9	19.0	1.9	239.3	2.393	22.8	23.8	-1.0	239.3	2.393	23.2	23.0	0.3	224.6	2.246	23.6	23.8	-0.2	233.2	7.3
45	224.6	2.246	20.8	19.2	1.6	229.5	2.295	22.8	24.0	-1.2	229.5	2.295	23.2	23.0	0.2	214.8	2.148	23.3	23.5	-0.2	224.6	6.9
60	219.7	2.197	21.0	19.4	1.5	219.7	2.197	22.8	23.8	-1.0	219.7	2.197	23.2	23.0	0.2	214.8	2.148	23.5	23.5	0.1	218.5	2.4
75	214.8	2.148	21.0	19.5	1.5	214.8	2.148	22.8	24.0	-1.2	214.8	2.148	23.1	23.4	-0.3	205.1	2.051	23.6	23.5	0.2	212.4	4.9
90	210.0	2.100	20.8	19.6	1.2	205.1	2.051	22.8	23.8	-1.0	205.1	2.051	23.1	23.2	-0.0	200.2	2.002	23.3	23.5	-0.2	205.1	4.0
105	205.1	2.051	20.8	19.7	1.1	200.2	2.002	22.8	23.8	-1.0	200.2	2.002	23.1	23.3	-0.2	195.3	1.953	23.5	23.3	0.2	200.2	4.0
120	205.1	2.051	20.8	20.1	0.8	190.4	1.904	22.8	23.8	-1.0	195.3	1.953	23.2	23.3	-0.1	190.4	1.904	23.3	23.3	0.0	195.3	6.9
135	200.2	2.002	20.8	20.4	0.5	180.7	1.807	23.0	23.8	-0.8	190.4	1.904	23.2	23.4	-0.1	185.5	1.855	23.5	23.3	0.2	189.2	8.3
150	190.4	1.904	21.0	20.4	0.6	180.7	1.807	23.0	23.6	-0.7	185.5	1.855	23.2	23.5	-0.3	180.7	1.807	23.5	23.1	0.4	184.3	4.7
165	185.5	1.855	20.8	20.6	0.3	170.9	1.709	22.8	23.6	-0.8	180.7	1.807	23.2	23.4	-0.1	175.8	1.758	23.3	23.1	0.2	178.2	6.3
180	180.7	1.807	21.0	20.8	0.2	166.0	1.660	22.8	23.6	-0.8	180.7	1.807	23.2	23.6	-0.3	170.9	1.709	23.5	23.0	0.6	174.6	7.3
195	175.8	1.758	21.0	20.7	0.4	161.1	1.611	23.0	23.6	-0.6	170.9	1.709	23.2	23.7	-0.4	170.9	1.709	23.8	23.0	0.8	169.7	6.1
210	170.9	1.709	20.8	21.0	-0.1	156.3	1.563	22.8	23.6	-0.8	166.0	1.660	23.1	23.7	-0.6	166.0	1.660	23.3	23.1	0.2	164.8	6.1
225	166.0	1.660	20.8	20.9	-0.0	146.5	1.465	22.8	23.6	-0.8	166.0	1.660	23.1	23.9	-0.7	156.3	1.563	23.5	23.0	0.6	158.7	9.3
240	161.1	1.611	20.8	21.0	-0.2	146.5	1.465	22.9	23.5	-0.5	161.1	1.611	23.3	23.9	-0.6	151.4	1.514	23.5	22.9	0.6	155.0	7.3
255	161.1	1.611	21.0	21.2	-0.2	141.6	1.416	22.8	23.3	-0.5	161.1	1.611	23.3	23.7	-0.4	146.5	1.465	23.6	22.9	0.7	152.6	10.1
270	151.4	1.514	21.0	21.2	-0.2	136.7	1.367	22.8	23.4	-0.6	156.3	1.563	23.3	23.7	-0.4	146.5	1.465	23.8	22.6	1.1	147.7	8.3
285	151.4	1.514	21.0	21.3	-0.3	127.0	1.270	23.0	23.3	-0.3	156.3	1.563	23.3	23.9	-0.6	141.6	1.416	23.3	22.7	0.6	144.0	12.9
300	146.5	1.465	21.2	21.4	-0.2	127.0	1.270	23.0	23.4	-0.4	146.5	1.465	23.4	23.8	-0.4	141.6	1.416	23.5	22.6	0.9	140.4	9.2
315	141.6	1.416	21.0	21.7	-0.7	122.1	1.221	23.0	23.1	-0.1	146.5	1.465	23.4	23.9	-0.4	136.7	1.367	23.5	22.5	1.0	136.7	10.5
330	141.6	1.416	21.2	21.7	-0.5	117.2	1.172	23.0	23.1	-0.1	141.6	1.416	23.4	23.8	-0.4	127.0	1.270	23.5	22.5	1.1	131.8	12.0
345	136.7	1.367	21.2	21.7	-0.5	112.3	1.123	23.0	23.2	-0.2	141.6	1.416	23.4	24.0	-0.6	127.0	1.270	23.4	22.5	1.0	129.4	12.9
360	131.8	1.318	21.1	21.6	-0.6	107.4	1.074	23.0	23.1	-0.1	136.7	1.367	23.1	23.8	-0.7	122.1	1.221	23.2	22.4	0.8	124.5	12.9
375	131.8	1.318	21.2	21.8	-0.6	102.5	1.025	22.8	22.9	-0.1	136.7	1.367	23.2	24.0	-0.7	122.1	1.221	23.0	22.4	0.6	123.3	15.1
390	131.8	1.318	21.2	22.1	-0.9	102.5	1.025	22.8	22.9	-0.1	131.8	1.318	23.1	23.8	-0.6	122.1	1.221	23.0	22.4	0.6	122.1	13.8
405	127.0	1.270	21.2	21.9	-0.7	97.7	0.977	22.8	22.9	-0.1	131.8	1.318	23.2	23.8	-0.5	117.2	1.172	23.0	22.4	0.6	118.4	15.1
420	127.0	1.270	21.2	21.8	-0.7	92.8	0.928	22.8	22.6	0.2	127.0	1.270	23.4	23.8	-0.3	117.2	1.172	23.1	22.2	0.8	116.0	16.1
435	122.1	1.221	21.1	21.8	-0.7	92.8	0.928	22.8	22.6	0.2	127.0	1.270	23.4	23.8	-0.3	112.3	1.123	23.1	22.2	0.9	113.5	15.1
450	122.1	1.221	21.1	21.8	-0.7	87.9	0.879	22.8	22.7	0.1	122.1	1.221	23.2	23.6	-0.4	107.4	1.074	23.2	22.4	0.8	109.9	16.2
465	117.2	1.172	21.0	21.7	-0.7	83.0	0.830	22.8	22.7	0.1	117.2	1.172	23.4	23.6	-0.2	107.4	1.074	23.3	22.2	1.1	106.2	16.1
480	117.2	1.172	21.0	21.7	-0.8	78.1	0.781	22.8	22.6	0.2	112.3	1.123	23.4	23.6	-0.2	102.5	1.025	23.0	22.0	1.1	102.5	17.4
495	112.3	1.123	21.0	21.7	-0.8	73.2	0.732	22.8	22.6	0.2	107.4	1.074	23.4	23.6	-0.2	102.5	1.025	23.3	22.1	1.2	98.9	17.5
510	112.3	1.123	21.0	21.7	-0.7	73.2	0.732	23.2	22.5	0.7	102.5	1.025	23.4	23.6	-0.2	97.7	0.977	23.5	22.1	1.5	96.4	16.6
525	107.4	1.074	21.0	21.7	-0.7	68.4	0.684	23.3	22.4	1.0	102.5	1.025	23.2	23.6	-0.3	97.7	0.977	23.6	22.0	1.6	94.0	17.5
540	102.5	1.025	21.0	21.5	-0.5	68.4	0.684	23.3	22.4	1.0	97.7	0.977	23.4	23.5	-0.0	92.8	0.928	23.3	21.9	1.4	90.3	15.2

555	102.5	1.025	21.0	21.6	-0.6	63.5	0.635	23.2	22.2	1.0	92.8	0.928	23.4	23.3	0.1	92.8	0.928	23.5	22.0	1.5	87.9	16.9
570	97.7	0.977	21.0	21.3	-0.4	63.5	0.635	23.3	22.2	1.1	92.8	0.928	23.4	23.4	0.0	87.9	0.879	23.6	22.0	1.6	85.4	15.2
585	97.7	0.977	20.9	21.3	-0.4	58.6	0.586	23.2	22.2	1.0	87.9	0.879	23.4	23.3	0.1	87.9	0.879	23.3	21.9	1.4	83.0	16.9
600	92.8	0.928	20.9	21.3	-0.4	58.6	0.586	23.2	22.3	0.8	83.0	0.830	23.6	23.4	0.2	83.0	0.830	23.5	21.7	1.8	79.3	14.6
615	92.8	0.928	20.9	21.2	-0.3	53.7	0.537	23.0	22.0	1.0	78.1	0.781	23.4	23.1	0.3	83.0	0.830	23.6	21.7	1.9	76.9	16.6
630	87.9	0.879	21.0	21.2	-0.2	53.7	0.537	23.0	22.0	1.0	73.2	0.732	23.6	23.1	0.5	83.0	0.830	23.3	21.7	1.6	74.5	15.1
645	87.9	0.879	21.2	21.0	0.2	48.8	0.488	23.0	22.2	0.8	73.2	0.732	23.3	23.2	0.1	78.1	0.781	23.6	22.0	1.7	72.0	16.6
660	83.0	0.830	21.2	21.0	0.2	48.8	0.488	23.0	22.0	1.0	68.4	0.684	23.4	23.1	0.4	78.1	0.781	23.3	22.1	1.2	69.6	15.1
675	83.0	0.830	21.1	20.8	0.3	43.9	0.439	23.0	22.0	1.0	68.4	0.684	23.6	22.9	0.6	73.2	0.732	23.5	22.0	1.6	67.1	16.6
690	83.0	0.830	21.0	20.7	0.3	43.9	0.439	22.8	21.9	1.0	63.5	0.635	23.4	22.9	0.5	73.2	0.732	23.6	22.0	1.7	65.9	16.7
705	78.1	0.781	21.2	20.5	0.7	43.9	0.439	22.8	22.0	0.8	63.5	0.635	23.6	22.9	0.7	73.2	0.732	23.3	22.0	1.3	64.7	15.1
720	78.1	0.781	21.2	20.5	0.7	39.1	0.391	22.8	21.9	1.0	58.6	0.586	23.6	22.6	1.0	68.4	0.684	23.5	22.0	1.6	61.0	16.7
735	73.2	0.732	21.1	20.3	0.7	39.1	0.391	22.8	22.0	0.8	58.6	0.586	23.6	22.6	1.0	68.4	0.684	23.6	22.0	1.7	59.8	15.1
750	73.2	0.732	20.6	20.3	0.3	34.2	0.342	22.8	22.0	0.8	53.7	0.537	23.5	22.7	0.7	68.4	0.684	23.3	22.1	1.2	57.4	17.5
765	73.2	0.732	20.9	20.3	0.6	34.2	0.342	22.8	22.1	0.7	53.7	0.537	23.6	22.7	0.9	63.5	0.635	23.3	22.0	1.3	56.2	16.7
780	68.4	0.684	20.8	20.0	0.8	34.2	0.342	22.8	22.0	0.8	48.8	0.488	23.6	22.6	1.0	63.5	0.635	23.5	22.1	1.4	53.7	15.4
795	68.4	0.684	21.0	20.1	0.8	29.3	0.293	22.8	22.0	0.8	48.8	0.488	23.6	22.6	1.0	58.6	0.586	23.6	22.2	1.5	51.3	16.7
810	63.5	0.635	21.0	20.0	1.0	29.3	0.293	22.8	22.1	0.7	43.9	0.439	23.6	22.5	1.1	58.6	0.586	23.6	22.2	1.4	48.8	15.4
825	63.5	0.635	20.8	19.8	1.0	29.3	0.293	23.0	22.1	0.8	43.9	0.439	23.6	22.4	1.2	58.6	0.586	23.3	22.2	1.1	48.8	15.4
840	63.5	0.635	20.8	19.9	0.9	24.4	0.244	23.0	22.1	0.8	43.9	0.439	23.6	22.4	1.2	58.6	0.586	23.5	22.4	1.2	47.6	17.5
855	63.5	0.635	20.4	19.7	0.8	24.4	0.244	22.8	22.0	0.8	39.1	0.391	23.6	22.2	1.4	53.7	0.537	23.6	22.2	1.5	45.2	17.1
870	58.6	0.586	20.9	19.6	1.3	24.4	0.244	22.8	22.1	0.7	39.1	0.391	23.6	22.2	1.4	53.7	0.537	23.3	22.0	1.4	43.9	15.4
885	58.6	0.586	20.8	19.4	1.4	24.4	0.244	23.0	22.1	0.8	34.2	0.342	23.6	22.2	1.4	53.7	0.537	23.5	22.1	1.5	42.7	16.1
900	58.6	0.586	21.0	19.4	1.5	19.5	0.195	22.8	22.0	0.8	34.2	0.342	23.6	22.3	1.2	48.8	0.488	23.6	22.1	1.6	40.3	17.1
915	58.6	0.586	21.0	19.3	1.6	19.5	0.195	22.8	22.1	0.7	34.2	0.342	23.6	22.0	1.5	48.8	0.488	23.3	22.0	1.3	40.3	17.1
930	53.7	0.537	20.8	19.1	1.7	19.5	0.195	22.9	22.1	0.8	29.3	0.293	23.6	22.0	1.5	48.8	0.488	23.0	21.9	1.1	37.8	16.1
945	53.7	0.537	20.8	18.9	1.9	19.5	0.195	22.8	22.1	0.7	29.3	0.293	23.6	22.2	1.4	43.9	0.439	23.0	22.0	0.9	36.6	15.2
960	48.8	0.488	21.2	19.0	2.3	19.5	0.195	22.8	22.1	0.7	29.3	0.293	23.6	22.0	1.5	43.9	0.439	23.1	22.0	1.0	35.4	13.4
975	48.8	0.488	21.2	18.9	2.3	19.5	0.195	23.0	22.1	0.8	24.4	0.244	23.6	22.0	1.5	39.1	0.391	23.1	21.9	1.2	33.0	13.4
990	48.8	0.488	21.2	18.5	2.7	19.5	0.195	23.0	22.0	1.0	24.4	0.244	23.6	21.9	1.7	39.1	0.391	23.2	21.7	1.4	33.0	13.4
1005	48.8	0.488	21.2	18.8	2.5	14.6	0.146	23.0	22.0	1.0	24.4	0.244	23.6	22.0	1.6	39.1	0.391	23.3	21.7	1.6	31.7	15.2
1020	48.8	0.488	21.2	18.5	2.8	14.6	0.146	23.0	22.2	0.8	24.4	0.244	23.6	21.9	1.7	39.1	0.391	23.0	21.7	1.3	31.7	15.2
1035	43.9	0.439	21.2	18.3	3.0	14.6	0.146	23.0	22.0	1.0	19.5	0.195	23.6	22.0	1.6	39.1	0.391	22.6	22.0	0.7	29.3	14.4
1050	43.9	0.439	21.2	18.3	3.0	14.6	0.146	23.0	22.0	1.0	19.5	0.195	23.8	22.0	1.8	39.1	0.391	22.6	22.1	0.5	29.3	14.4
1065	43.9	0.439	21.4	18.3	3.1	14.6	0.146	22.8	21.9	1.0	19.5	0.195	23.8	22.1	1.7	39.1	0.391	22.6	22.0	0.7	29.3	14.4
1080	39.1	0.391	21.4	18.2	3.3	14.6	0.146	22.8	22.0	0.8	19.5	0.195	23.6	22.0	1.6	39.1	0.391	23.0	22.0	1.0	28.1	12.8
1095	39.1	0.391	21.4	17.8	3.6	9.8	0.098	22.8	21.9	1.0	19.5	0.195	23.6	22.0	1.6	34.2	0.342	23.3	22.0	1.3	25.6	13.4
1110	39.1	0.391	21.4	17.8	3.6	9.8	0.098	22.8	22.0	0.8	19.5	0.195	23.8	22.1	1.7	34.2	0.342	23.5	22.0	1.6	25.6	13.4
1125	39.1	0.391	21.4	17.9	3.5	9.8	0.098	22.8	22.0	0.8	19.5	0.195	23.8	22.1	1.6	29.3	0.293	23.6	22.0	1.7	24.4	12.6
1140	39.1	0.391	21.4	17.6	3.8	9.8	0.098	22.8	22.1	0.7		0.000					0.000				12.2	18.5
1155	34.2	0.342	21.4	17.8	3.6	9.8	0.098	22.8	22.0	0.8		0.000					0.000				11.0	16.1
1170	34.2	0.342	21.4	17.6	3.8	4.9	0.049	22.8	22.0	0.8		0.000					0.000				9.8	16.4
1185	34.2	0.342	21.4	17.6	3.8	4.9	0.049	22.8	22.1	0.7		0.000					0.000				9.8	16.4

Table A.0-5 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was empty and no carbon dioxide was added.

Sample No.	E01-0					E02-0					E03-0					E04-0						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	254.6	2.546	21.7	19.4	2.3	253.9	2.539	19.2	15.7	3.6	253.9	2.539	25.0	24.4	0.6	253.9	2.539	24.1	23.2	1.0	254.1	0.3
15	244.1	2.441	21.6	19.3	2.3	249.0	2.490	17.4	15.0	2.3	244.1	2.441	25.0	24.6	0.5	249.0	2.490	23.6	23.3	0.2	246.6	2.8
30	234.4	2.344	21.7	19.5	2.2	229.5	2.295	18.1	17.2	0.9	234.4	2.344	25.2	24.7	0.5	234.4	2.344	23.8	23.6	0.2	233.2	2.4
45	229.5	2.295	21.5	19.3	2.2	224.6	2.246	18.5	17.6	0.9	229.5	2.295	25.0	24.4	0.6	229.5	2.295	23.7	23.4	0.2	228.3	2.4
60	224.6	2.246	21.7	19.4	2.3	219.7	2.197	18.7	17.5	1.1	219.7	2.197	24.7	24.2	0.5	224.6	2.246	24.0	23.7	0.2	222.2	2.8
75	219.7	2.197	21.5	19.6	1.9	214.8	2.148	18.9	17.8	1.1	219.7	2.197	24.7	24.2	0.5	224.6	2.246	24.0	23.7	0.2	219.7	4.0
90	214.8	2.148	21.5	19.7	1.8	210.0	2.100	19.0	18.0	1.0	214.8	2.148	24.7	24.1	0.6	219.7	2.197	24.1	24.0	0.1	214.8	4.0
105	210.0	2.100	21.5	19.6	1.9	205.1	2.051	19.3	18.0	1.3	210.0	2.100	24.4	23.6	0.7	219.7	2.197	24.0	24.0	0.0	211.2	6.1
120	205.1	2.051	21.1	19.3	1.8	205.1	2.051	19.4	18.2	1.2	205.1	2.051	24.2	23.5	0.7	205.1	2.051	24.4	24.2	0.1	205.1	0.0
135	200.2	2.002	21.1	19.3	1.8	200.2	2.002	19.4	18.0	1.3	195.3	1.953	23.9	23.5	0.4	205.1	2.051	24.4	24.4	0.0	200.2	4.0
150	200.2	2.002	21.3	19.5	1.8	195.3	1.953	19.3	17.8	1.5	190.4	1.904	23.5	22.9	0.6	200.2	2.002	24.5	24.5	0.0	196.5	4.7
165	195.3	1.953	21.3	19.3	1.9	190.4	1.904	19.4	18.2	1.2	190.4	1.904	23.5	23.1	0.5	200.2	2.002	24.7	24.7	0.0	194.1	4.7
180	195.3	1.953	21.3	19.5	1.8	190.4	1.904	19.0	17.8	1.2	185.5	1.855	23.5	22.9	0.6	190.4	1.904	24.9	24.9	0.0	190.4	4.0
195	190.4	1.904	21.3	19.6	1.7	185.5	1.855	18.8	17.5	1.3	180.7	1.807	23.3	22.8	0.5	185.5	1.855	25.1	24.9	0.1	185.5	4.0
210	190.4	1.904	20.9	19.1	1.8	185.5	1.855	19.0	17.9	1.1	175.8	1.758	23.2	22.7	0.5	180.7	1.807	25.2	25.0	0.2	183.1	6.3
225	185.5	1.855	21.1	19.2	1.9	180.7	1.807	19.0	17.9	1.1	170.9	1.709	23.2	22.6	0.6	175.8	1.758	25.2	25.0	0.2	178.2	6.3
240	185.5	1.855	21.3	19.2	2.1	180.7	1.807	19.0	17.9	1.1	170.9	1.709	23.0	22.5	0.5	170.9	1.709	25.2	24.9	0.4	177.0	7.3
255	180.7	1.807	21.2	19.2	1.9	175.8	1.758	18.9	18.0	0.9	166.0	1.660	22.7	22.2	0.5	166.0	1.660	25.2	24.9	0.4	172.1	7.3
270	180.7	1.807	21.0	19.1	1.9	175.8	1.758	18.7	17.4	1.2	166.0	1.660	22.8	22.3	0.5	161.1	1.611	25.4	24.8	0.6	170.9	8.9
285	175.8	1.758	21.0	19.3	1.7	170.9	1.709	18.7	17.5	1.1	161.1	1.611	22.8	22.2	0.6	156.3	1.563	25.4	25.2	0.2	166.0	8.9
300	175.8	1.758	21.2	19.3	1.8	166.0	1.660	18.5	17.5	1.0	161.1	1.611	22.6	22.2	0.5	151.4	1.514	25.4	25.2	0.2	163.6	10.2
315	170.9	1.709	21.2	19.1	2.1	166.0	1.660	18.7	17.5	1.1	156.3	1.563	22.5	22.0	0.5	146.5	1.465	25.4	25.2	0.2	159.9	10.8
330	170.9	1.709	21.2	19.2	1.9	161.1	1.611	18.5	17.4	1.1	156.3	1.563	22.3	21.8	0.5	146.5	1.465	25.4	25.2	0.2	158.7	10.2
345	166.0	1.660	21.2	19.2	1.9	161.1	1.611	18.4	17.5	0.9	151.4	1.514	22.3	22.0	0.4	141.6	1.416	25.4	25.3	0.1	155.0	10.8
360	166.0	1.660	21.2	19.2	1.9	156.3	1.563	18.5	17.4	1.1	151.4	1.514	22.1	21.7	0.5	141.6	1.416	25.3	25.3	0.0	153.8	10.2
375	161.1	1.611	20.8	19.1	1.7	151.4	1.514	18.7	17.5	1.1	146.5	1.465	22.3	21.7	0.6	136.7	1.367	25.4	25.3	0.1	148.9	10.2
390	161.1	1.611	21.2	19.3	1.8	146.5	1.465	18.5	17.4	1.1	146.5	1.465	22.1	21.4	0.7	136.7	1.367	25.4	25.2	0.2	147.7	10.1
405	156.3	1.563	20.9	19.0	1.9	146.5	1.465	18.4	17.5	0.9	141.6	1.416	22.1	21.5	0.6	131.8	1.318	25.4	25.2	0.2	144.0	10.2
420	156.3	1.563	21.0	19.2	1.8	141.6	1.416	18.5	17.5	1.0	141.6	1.416	22.1	21.5	0.6	131.8	1.318	25.3	25.0	0.2	142.8	10.1
435	151.4	1.514	20.8	19.0	1.8	141.6	1.416	18.4	17.1	1.2	141.6	1.416	21.7	21.3	0.4	127.0	1.270	25.3	25.2	0.1	140.4	10.1
450	151.4	1.514	20.8	18.9	1.9	136.7	1.367	18.4	17.4	1.0	136.7	1.367	21.6	21.3	0.4	122.1	1.221	24.9	24.8	0.1	136.7	12.0
465	151.4	1.514	20.9	19.0	1.9	136.7	1.367	18.4	17.4	1.0	136.7	1.367	21.6	21.3	0.4	117.2	1.172	25.1	25.0	0.1	135.5	14.0
480	146.5	1.465	21.0	19.1	1.9	131.8	1.318	18.4	17.5	0.9	136.7	1.367	21.8	21.5	0.2	117.2	1.172	25.3	25.2	0.1	133.1	12.2
495	146.5	1.465	21.0	19.2	1.8	131.8	1.318	18.4	17.5	0.9	131.8	1.318	21.8	21.3	0.5	112.3	1.123	25.1	25.0	0.1	130.6	14.0
510	146.5	1.465	21.2	19.1	2.1	127.0	1.270	18.2	15.5	2.7	131.8	1.318	21.9	21.2	0.7	107.4	1.074	25.1	25.0	0.1	128.2	16.1
525	141.6	1.416	21.2	19.5	1.7	127.0	1.270	18.0	17.2	0.9	131.8	1.318	21.5	21.1	0.4	102.5	1.025	25.3	25.2	0.1	125.7	16.6
540	141.6	1.416	21.0	19.1	1.9	122.1	1.221	18.2	17.4	0.7	127.0	1.270	21.5	21.1	0.5	102.5	1.025	25.1	24.9	0.2	123.3	16.1

555	141.6	1.416	21.0	19.3	1.7	122.1	1.221	18.2	17.3	0.9	127.0	1.270	21.4	20.9	0.5	97.7	0.977	24.9	24.8	0.1	122.1	18.3
570	136.7	1.367	21.0	19.3	1.7	117.2	1.172	18.4	17.6	0.7	122.1	1.221	21.3	20.9	0.4	92.8	0.928	24.9	24.7	0.2	117.2	18.3
585	136.7	1.367	21.0	19.1	1.9	117.2	1.172	18.2	17.3	0.9	117.2	1.172	21.4	21.1	0.4	92.8	0.928	24.9	24.5	0.5	116.0	18.0
600	136.7	1.367	21.0	19.0	2.1	112.3	1.123	18.2	17.2	1.0	117.2	1.172	21.4	21.2	0.2	92.8	0.928	24.9	24.3	0.6	114.7	18.1
615	131.8	1.318	20.9	18.4	2.4	112.3	1.123	18.2	17.3	0.9	117.2	1.172	21.4	21.1	0.4	87.9	0.879	24.8	24.3	0.5	112.3	18.3
630	131.8	1.318	20.9	18.8	2.1	107.4	1.074	18.2	17.2	1.0	112.3	1.123	21.4	20.7	0.7	83.0	0.830	24.8	24.2	0.6	108.6	20.1
645	127.0	1.270	20.8	18.4	2.3	107.4	1.074	18.1	17.2	1.0	112.3	1.123	21.3	20.7	0.6	83.0	0.830	24.6	24.0	0.6	107.4	18.3
660	127.0	1.270	20.6	18.5	2.1	107.4	1.074	18.1	17.3	0.9	112.3	1.123	21.4	20.7	0.7	78.1	0.781	24.4	23.7	0.7	106.2	20.5
675	127.0	1.270	20.6	18.6	1.9	102.5	1.025	17.8	16.8	1.0	107.4	1.074	21.2	20.5	0.7	78.1	0.781	24.3	23.7	0.6	103.8	20.1
690	127.0	1.270	20.7	18.6	2.1	102.5	1.025	18.0	16.9	1.1	107.4	1.074	21.1	20.5	0.6	73.2	0.732	24.2	23.5	0.7	102.5	22.2
705	127.0	1.270	20.7	18.6	2.1	97.7	0.977	18.0	17.0	1.0	107.4	1.074	21.0	20.6	0.5	73.2	0.732	24.0	23.4	0.6	101.3	22.3
720	117.2	1.172	20.5	18.5	2.1	97.7	0.977	17.8	16.6	1.2	107.4	1.074	21.0	20.5	0.5	68.4	0.684	24.1	23.4	0.7	97.7	21.1
735	117.2	1.172	20.7	18.6	2.1	92.8	0.928	17.8	16.7	1.1	107.4	1.074	21.1	20.7	0.4	68.4	0.684	23.9	23.2	0.7	96.4	21.2
750	117.2	1.172	20.7	18.8	1.9	92.8	0.928	17.7	16.8	0.9	107.4	1.074	21.2	21.0	0.2	63.5	0.635	23.8	23.1	0.7	95.2	23.4
765	117.2	1.172	20.7	18.4	2.3	92.8	0.928	17.7	16.8	0.9	102.5	1.025	21.3	21.0	0.4	63.5	0.635	23.6	22.9	0.7	94.0	22.7
780	117.2	1.172	20.6	18.4	2.2	87.9	0.879	17.7	17.0	0.7	102.5	1.025	21.4	21.3	0.2	58.6	0.586	23.6	22.7	0.8	91.6	25.0
795	117.2	1.172	20.6	18.3	2.3	87.9	0.879	17.7	17.0	0.7	97.7	0.977	21.5	21.1	0.2	58.6	0.586	23.3	22.6	0.7	90.3	24.4
810	117.2	1.172	20.6	18.5	2.1	87.9	0.879	17.5	16.6	1.0	97.7	0.977	21.6	21.4	0.2	53.7	0.537	23.2	22.4	0.8	89.1	26.6
825	112.3	1.123	20.6	18.8	1.8	87.9	0.879	17.5	16.7	0.9	92.8	0.928	21.6	21.3	0.4	48.8	0.488	23.2	22.4	0.8	85.4	26.6
840	112.3	1.123	20.6	18.3	2.3	83.0	0.830	17.5	16.7	0.9	92.8	0.928	21.6	21.3	0.4	48.8	0.488	23.1	22.3	0.7	84.2	26.6
855	112.3	1.123	20.4	18.5	2.0	83.0	0.830	17.4	16.6	0.7	92.8	0.928	21.8	21.5	0.2	48.8	0.488	22.9	22.0	0.8	84.2	26.6
870	112.3	1.123	20.4	18.6	1.8	83.0	0.830	17.4	16.8	0.6	87.9	0.879	21.9	21.5	0.4	48.8	0.488	22.7	21.9	0.8	83.0	26.1
885	112.3	1.123	20.4	18.0	2.3	78.1	0.781	17.5	16.8	0.7	87.9	0.879	22.2	21.7	0.5	43.9	0.439	22.7	22.0	0.7	80.6	28.3
900	107.4	1.074	20.4	18.3	2.1	78.1	0.781	17.4	16.5	0.9	87.9	0.879	22.3	21.8	-0.5	43.9	0.439	22.6	21.8	0.7	79.3	26.6
915	107.4	1.074	20.4	18.3	2.1	78.1	0.781	17.4	16.5	0.9	87.9	0.879	22.5	22.0	-0.5	39.1	0.391	22.4	21.5	0.8	78.1	28.7
930	107.4	1.074	20.4	18.2	2.2	73.2	0.732	17.2	16.2	1.0	83.0	0.830	22.6	22.2	-0.5	39.1	0.391	22.4	21.8	0.6	75.7	28.3
945	107.4	1.074	20.4	18.0	2.3	73.2	0.732	17.3	16.5	0.9	83.0	0.830	22.7	22.2	-0.4	34.2	0.342	22.4	21.8	0.6	74.5	30.5
960	107.4	1.074	20.4	18.0	2.3	73.2	0.732	17.3	16.6	0.7	83.0	0.830	22.8	22.3	-0.5	34.2	0.342	22.1	21.6	0.5	74.5	30.5
975	107.4	1.074	20.0	18.2	1.8	68.4	0.684	17.2	16.7	0.5	78.1	0.781	22.9	22.5	-0.5	34.2	0.342	22.2	21.7	0.5	72.0	30.2
990	102.5	1.025	20.2	18.1	2.1	68.4	0.684	17.3	16.7	0.6	78.1	0.781	23.1	22.5	-0.4	29.3	0.293	22.2	21.6	0.6	69.6	30.5
1005	102.5	1.025	20.3	18.9	1.5	63.5	0.635	17.2	16.5	0.7	78.1	0.781	22.9	22.5	-0.5	29.3	0.293	22.0	21.4	0.6	68.4	30.6
1020	102.5	1.025	20.3	18.7	1.6	63.5	0.635	17.3	16.5	0.9	73.2	0.732	23.5	22.9	-0.4	29.3	0.293	21.9	21.2	0.7	67.1	30.2
1035	97.7	0.977	20.3	18.6	1.7	63.5	0.635	17.4	16.4	1.0	73.2	0.732	23.5	23.2	-0.6	29.3	0.293	21.9	21.2	0.7	65.9	28.3
1050	97.7	0.977	20.3	18.9	1.5	63.5	0.635	17.2	16.3	0.9	73.2	0.732	23.6	23.4	-0.3	24.4	0.244	21.7	21.0	0.7	64.7	30.5
1065	92.8	0.928	20.3	18.7	1.6	58.6	0.586	17.1	16.1	1.0	68.4	0.684	24.1	23.7	-0.3	24.4	0.244	21.7	21.1	0.6	61.0	28.3
1080	92.8	0.928	20.2	18.7	1.5	53.7	0.537	17.2	16.3	0.9	68.4	0.684	24.2	23.7	-0.4	24.4	0.244	21.5	20.9	0.6	59.8	28.6
1095	92.8	0.928	20.5	18.7	1.8	53.7	0.537	17.0	15.1	1.8	63.5	0.635	24.2	23.7	-0.5	24.4	0.244	21.5	20.9	0.6	58.6	28.2
1110	87.9	0.879	20.1	18.6	1.6	53.7	0.537	15.7	11.7	4.0	63.5	0.635	24.4	24.0	-0.5	19.5	0.195	21.4	20.7	0.7	56.2	28.3
1125	87.9	0.879	20.4	18.6	1.8	48.8	0.488	16.5	15.9	0.6	63.5	0.635	24.4	24.0	-0.4	19.5	0.195	21.4	20.8	0.6	54.9	28.6
1140	87.9	0.879	20.3	18.6	1.7	48.8	0.488	16.8	16.1	0.7	63.5	0.635	24.6	24.0	-0.4	19.5	0.195	21.4	21.1	0.2	54.9	28.6
1155	87.9	0.879	20.4	18.6	1.8	48.8	0.488	16.8	15.9	0.9	58.6	0.586	24.7	24.2	-0.5	19.5	0.195	21.5	21.4	0.1	53.7	28.2
1170	83.0	0.830	20.3	18.4	1.8	48.8	0.488	16.8	15.8	1.0	53.7	0.537	24.7	24.2	-0.5	19.5	0.195	21.5	21.4	0.1	51.3	26.0
1185	83.0	0.830	20.3	18.6	1.7	48.8	0.488	16.9	15.9	1.0	53.7	0.537	24.6	24.0	0.5	19.5	0.195	21.7	21.5	0.2	51.3	26.0

Table A.0-6 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was empty and carbon dioxide purging time was 15 min.

Sample No.	E01-15					E02-15					E03-15					E04-15					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	254.6	2.546	22.8	21.7	1.1	253.9	2.539	22.7	21.7	1.1	258.8	2.588	23.7	23.1	0.6	253.9	2.539	24.1	23.2	1.0	255.3	2.3
15	244.1	2.441	22.5	22.3	0.1	249.0	2.490	22.8	21.7	1.1	254.6	2.546	23.7	22.6	1.1	244.1	2.441	23.6	23.3	0.2	248.0	5.0
30	234.4	2.344	22.5	22.2	0.2	244.1	2.441	22.8	21.6	1.2	249.0	2.490	23.9	22.9	1.0	239.3	2.393	23.8	23.6	0.2	241.7	6.3
45	229.5	2.295	22.5	22.1	0.4	239.3	2.393	23.0	21.8	1.2	244.1	2.441	23.7	22.6	1.1	239.3	2.393	23.7	23.4	0.2	238.0	6.1
60	224.6	2.246	22.8	22.6	0.2	234.4	2.344	23.3	22.1	1.2	239.3	2.393	23.8	22.5	1.3	234.4	2.344	24.0	23.7	0.2	233.2	6.1
75	224.6	2.246	22.8	22.6	0.2	229.5	2.295	23.1	21.9	1.2	234.4	2.344	23.7	22.6	1.1	219.7	2.197	24.0	23.7	0.2	227.1	6.3
90	219.7	2.197	23.0	22.8	0.2	224.6	2.246	22.9	21.8	1.1	229.5	2.295	23.7	22.5	1.2	219.7	2.197	24.1	24.0	0.1	223.4	4.7
105	219.7	2.197	23.2	22.9	0.2	219.7	2.197	22.9	21.8	1.1	224.6	2.246	23.7	22.5	1.2	214.8	2.148	24.0	24.0	0.0	219.7	4.0
120	214.8	2.148	23.2	22.8	0.4	214.8	2.148	22.9	21.8	1.1	224.6	2.246	23.5	22.5	1.1	214.8	2.148	24.4	24.2	0.1	217.3	4.9
135	214.8	2.148	23.2	23.1	0.1	210.0	2.100	22.6	21.7	1.0	219.7	2.197	23.3	22.1	1.2	200.2	2.002	24.4	24.4	0.0	211.2	8.3
150	210.0	2.100	23.7	23.4	0.2	205.1	2.051	22.6	21.7	0.8	214.8	2.148	23.1	22.0	1.1	200.2	2.002	24.5	24.5	0.0	207.5	6.3
165	210.0	2.100	23.7	23.3	0.4	200.2	2.002	22.6	21.7	0.8	210.0	2.100	22.6	21.7	1.0	195.3	1.953	24.7	24.7	0.0	203.9	7.3
180	205.1	2.051	23.9	23.6	0.2	195.3	1.953	22.5	21.7	0.8	205.1	2.051	22.6	21.7	1.0	190.4	1.904	24.9	24.9	0.0	199.0	7.3
195	205.1	2.051	24.0	23.8	0.2	195.3	1.953	22.5	21.7	0.8	200.2	2.002	22.9	22.0	0.8	180.7	1.807	25.1	24.9	0.1	195.3	10.5
210	200.2	2.002	24.2	23.8	0.4	190.4	1.904	22.4	21.5	0.8	195.3	1.953	23.1	22.2	0.8	180.7	1.807	25.2	25.0	0.2	191.7	8.3
225	200.2	2.002	24.4	24.1	0.2	180.7	1.807	22.5	21.6	1.0	195.3	1.953	23.1	22.0	1.1	175.8	1.758	25.2	25.0	0.2	188.0	11.6
240	195.3	1.953	24.5	24.3	0.2	180.7	1.807	22.3	21.3	1.0	190.4	1.904	23.0	22.0	1.1	175.8	1.758	25.2	24.9	0.4	185.5	8.9
255	195.3	1.953	24.7	24.5	0.2	175.8	1.758	22.3	21.3	1.0	180.7	1.807	22.8	21.7	1.1	170.9	1.709	25.2	24.9	0.4	180.7	10.5
270	195.3	1.953	24.7	24.4	0.4	170.9	1.709	22.2	21.3	1.0	180.7	1.807	22.6	21.6	1.1	166.0	1.660	25.4	24.8	0.6	178.2	12.9
285	190.4	1.904	25.1	24.7	0.4	166.0	1.660	22.2	21.2	1.0	175.8	1.758	22.5	21.4	1.1	161.1	1.611	25.4	25.2	0.2	173.3	12.9
300	190.4	1.904	25.2	25.0	0.2	166.0	1.660	22.0	21.2	0.8	170.9	1.709	22.2	21.2	1.0	161.1	1.611	25.4	25.2	0.2	172.1	12.8
315	190.4	1.904	25.2	24.9	0.4	161.1	1.611	22.0	21.0	1.0	166.0	1.660	22.0	20.8	1.2	151.4	1.514	25.4	25.2	0.2	167.2	16.6
330	185.5	1.855	25.4	25.2	0.2	156.3	1.563	22.0	21.0	1.0	166.0	1.660	22.0	21.0	1.0	151.4	1.514	25.4	25.2	0.2	164.8	15.1
345	185.5	1.855	25.7	25.4	0.4	151.4	1.514	21.6	20.8	0.8	161.1	1.611	22.0	20.9	1.1	146.5	1.465	25.4	25.3	0.1	161.1	17.4
360	185.5	1.855	25.6	25.4	0.2	146.5	1.465	21.6	20.7	1.0	156.3	1.563	21.6	20.6	1.1	141.6	1.416	25.3	25.3	0.0	157.5	19.7
375	180.7	1.807	26.0	25.7	0.2	141.6	1.416	21.5	20.5	1.0	151.4	1.514	21.5	20.7	0.8	141.6	1.416	25.4	25.3	0.1	153.8	18.5
390	180.7	1.807	26.0	25.7	0.2	136.7	1.367	21.3	20.5	0.8	151.4	1.514	21.3	20.2	1.1	136.7	1.367	25.4	25.2	0.2	151.4	20.7
405	175.8	1.758	26.1	25.8	0.2	136.7	1.367	21.3	20.3	1.0	146.5	1.465	21.1	20.2	1.0	131.8	1.318	25.4	25.2	0.2	147.7	19.7
420	175.8	1.758	26.0	25.8	0.1	131.8	1.318	21.1	20.3	0.8	141.6	1.416	21.1	20.3	0.8	131.8	1.318	25.3	25.0	0.2	145.3	20.9
435	170.9	1.709	25.8	25.7	0.1	127.0	1.270	21.1	20.3	0.8	136.7	1.367	21.0	19.9	1.1	127.0	1.270	25.3	25.2	0.1	140.4	20.9
450	170.9	1.709	25.8	25.7	0.1	127.0	1.270	21.1	20.0	1.1	136.7	1.367	21.0	20.1	0.8	122.1	1.221	24.9	24.8	0.1	139.2	22.0
465	170.9	1.709	25.8	25.7	0.1	122.1	1.221	21.0	20.1	0.8	131.8	1.318	20.8	19.7	1.1	117.2	1.172	25.1	25.0	0.1	135.5	24.4
480	166.0	1.660	25.6	25.4	0.2	117.2	1.172	20.9	20.0	1.0	127.0	1.270	20.8	19.7	1.1	117.2	1.172	25.3	25.2	0.1	131.8	23.2
495	166.0	1.660	25.8	25.7	0.1	117.2	1.172	20.7	19.8	1.0	122.1	1.221	20.6	19.8	0.8	112.3	1.123	25.1	25.0	0.1	129.4	24.7
510	161.1	1.611	25.8	25.6	0.2	112.3	1.123	20.6	19.9	0.7	117.2	1.172	20.5	19.5	1.0	107.4	1.074	25.1	25.0	0.1	124.5	24.7
525	161.1	1.611	25.6	25.5	0.1	107.4	1.074	20.6	19.7	1.0	117.2	1.172	20.4	19.2	1.2	107.4	1.074	25.3	25.2	0.1	123.3	25.6
540	156.3	1.563	25.6	25.5	0.1	107.4	1.074	20.6	19.6	1.0	112.3	1.123	20.2	19.1	1.1	102.5	1.025	25.1	24.9	0.2	119.6	24.7

555	156.3	1.563	25.6	25.3	0.2	102.5	1.025	20.4	19.4	1.0	107.4	1.074	20.2	19.1	1.1	97.7	0.977	24.9	24.8	0.1	116.0	27.1
570	156.3	1.563	25.5	25.3	0.1	102.5	1.025	20.4	19.4	1.0	102.5	1.025	20.2	19.2	1.0	97.7	0.977	24.9	24.7	0.2	114.7	27.8
585	151.4	1.514	25.5	25.3	0.1	97.7	0.977	20.3	19.3	1.0	102.5	1.025	20.1	19.0	1.1	97.7	0.977	24.9	24.5	0.5	112.3	26.1
600	151.4	1.514	25.5	25.3	0.1	92.8	0.928	20.1	19.1	1.0	97.7	0.977	20.1	18.9	1.2	92.8	0.928	24.9	24.3	0.6	108.6	28.6
615	151.4	1.514	25.6	25.5	0.1	92.8	0.928	20.1	18.9	1.2	92.8	0.928	19.9	18.7	1.2	87.9	0.879	24.8	24.3	0.5	106.2	30.2
630	146.5	1.465	25.5	25.3	0.1	87.9	0.879	20.0	19.0	1.0	92.8	0.928	19.9	18.8	1.1	83.0	0.830	24.8	24.2	0.6	102.5	29.6
645	146.5	1.465	25.3	25.0	0.2	87.9	0.879	19.8	18.9	0.9	92.8	0.928	19.9	18.5	1.3	83.0	0.830	24.6	24.0	0.6	102.5	29.6
660	146.5	1.465	25.1	24.9	0.2	83.0	0.830	19.6	18.5	1.1	87.9	0.879	19.7	18.3	1.3	83.0	0.830	24.4	23.7	0.7	100.1	31.0
675	141.6	1.416	25.1	24.9	0.2	83.0	0.830	19.7	18.8	1.0	83.0	0.830	19.7	18.3	1.3	78.1	0.781	24.3	23.7	0.6	96.4	30.2
690	141.6	1.416	24.9	24.7	0.2	78.1	0.781	19.6	18.5	1.1	83.0	0.830	19.6	18.3	1.2	73.2	0.732	24.2	23.5	0.7	94.0	32.0
705	141.6	1.416	24.9	24.6	0.4	78.1	0.781	19.3	18.3	1.0	78.1	0.781	19.5	18.0	1.5	73.2	0.732	24.0	23.4	0.6	92.8	32.6
720	141.6	1.416	24.8	24.5	0.2	73.2	0.732	19.4	18.3	1.1	78.1	0.781	19.4	18.0	1.3	73.2	0.732	24.1	23.4	0.7	91.6	33.4
735	141.6	1.416	24.7	24.4	0.4	73.2	0.732	19.4	18.3	1.1	73.2	0.732	19.5	18.0	1.5	68.4	0.684	23.9	23.2	0.7	89.1	35.1
750	136.7	1.367	24.7	24.4	0.4	73.2	0.732	19.4	18.2	1.2	73.2	0.732	19.2	17.8	1.3	68.4	0.684	23.8	23.1	0.7	87.9	32.6
765	136.7	1.367	24.7	24.4	0.4	68.4	0.684	19.0	17.8	1.2	68.4	0.684	19.0	17.6	1.3	63.5	0.635	23.6	22.9	0.7	84.2	35.1
780	136.7	1.367	24.4	24.0	0.4	68.4	0.684	19.0	17.8	1.2	68.4	0.684	19.2	17.8	1.3	63.5	0.635	23.6	22.7	0.8	84.2	35.1
795	136.7	1.367	24.4	24.1	0.2	68.4	0.684	19.0	17.9	1.1	63.5	0.635	19.0	17.4	1.6	58.6	0.586	23.3	22.6	0.7	81.8	36.8
810	136.7	1.367	24.4	24.2	0.2	63.5	0.635	18.9	17.6	1.2	63.5	0.635	18.8	17.4	1.5	58.6	0.586	23.2	22.4	0.8	80.6	37.5
825	136.7	1.367	24.2	24.0	0.2	63.5	0.635	18.9	17.8	1.1	58.6	0.586	18.8	17.4	1.5	53.7	0.537	23.2	22.4	0.8	78.1	39.3
840	127.0	1.270	24.4	24.0	0.4	63.5	0.635	18.7	17.6	1.1	58.6	0.586	18.7	17.4	1.2	53.7	0.537	23.1	22.3	0.7	75.7	34.4
855	127.0	1.270	24.2	23.6	0.6	58.6	0.586	18.7	17.6	1.1	53.7	0.537	18.7	17.4	1.2	48.8	0.488	22.9	22.0	0.8	72.0	36.8
870	127.0	1.270	24.0	23.7	0.4	58.6	0.586	18.5	17.5	1.0	48.8	0.488	18.4	17.1	1.3	48.8	0.488	22.7	21.9	0.8	70.8	37.7
885	117.2	1.172	24.0	23.7	0.4	58.6	0.586	18.5	17.4	1.1	48.8	0.488	18.5	17.0	1.5	48.8	0.488	22.7	22.0	0.7	68.4	32.9
900	117.2	1.172	24.0	23.7	0.4	58.6	0.586	18.4	17.3	1.1	48.8	0.488	18.5	16.8	1.7	43.9	0.439	22.6	21.8	0.7	67.1	33.9
915	117.2	1.172	23.9	23.5	0.4	53.7	0.537	18.4	17.1	1.2	48.8	0.488	18.4	16.8	1.6	43.9	0.439	22.4	21.5	0.8	65.9	34.4
930	117.2	1.172	23.9	23.6	0.2	53.7	0.537	18.2	17.0	1.2	43.9	0.439	18.3	16.8	1.5	39.1	0.391	22.4	21.8	0.6	63.5	36.3
945	112.3	1.123	23.9	23.6	0.2	48.8	0.488	18.2	17.0	1.2	43.9	0.439	18.3	17.2	1.1	39.1	0.391	22.4	21.8	0.6	61.0	34.4
960	112.3	1.123	23.9	23.5	0.4	48.8	0.488	18.0	16.8	1.2	39.1	0.391	18.4	17.4	1.0	39.1	0.391	22.1	21.6	0.5	59.8	35.3
975	112.3	1.123	23.9	23.6	0.2	48.8	0.488	18.0	16.8	1.2	39.1	0.391	18.4	17.2	1.2	34.2	0.342	22.2	21.7	0.5	58.6	36.3
990	107.4	1.074	24.0	23.5	0.5	48.8	0.488	17.8	16.7	1.1	34.2	0.342	18.3	17.2	1.1	34.2	0.342	22.2	21.6	0.6	56.2	34.9
1005	107.4	1.074	23.7	23.3	0.4	43.9	0.439	17.8	16.9	1.0	34.2	0.342	18.1	17.0	1.1	34.2	0.342	22.0	21.4	0.6	54.9	35.3
1020	107.4	1.074	23.7	23.2	0.5	43.9	0.439	17.8	16.7	1.1	34.2	0.342	18.1	17.2	1.0	34.2	0.342	21.9	21.2	0.7	54.9	35.3
1035	107.4	1.074	23.5	23.2	0.4	43.9	0.439	17.9	17.2	0.7	29.3	0.293	18.5	17.4	1.1	29.3	0.293	21.9	21.2	0.7	52.5	37.3
1050	107.4	1.074	23.7	23.3	0.4	39.1	0.391	17.7	16.9	0.9	29.3	0.293	18.2	17.1	1.1	29.3	0.293	21.7	21.0	0.7	51.3	37.7
1065	107.4	1.074	23.5	23.3	0.2	39.1	0.391	17.9	17.0	0.9	29.3	0.293	18.4	17.8	0.6	29.3	0.293	21.7	21.1	0.6	51.3	37.7
1080	107.4	1.074	23.6	23.3	0.4	39.1	0.391	17.8	17.1	0.7	29.3	0.293	18.6	17.8	0.9	29.3	0.293	21.5	20.9	0.6	51.3	37.7
1095	102.5	1.025	23.3	23.0	0.4	39.1	0.391	18.0	17.2	0.9	24.4	0.244	18.9	17.8	1.1	24.4	0.244	21.5	20.9	0.6	47.6	37.3
1110	102.5	1.025	23.3	23.1	0.2	39.1	0.391	18.0	17.0	1.0	24.4	0.244	18.9	17.9	1.0	24.4	0.244	21.4	20.7	0.7	47.6	37.3
1125	102.5	1.025	23.3	22.9	0.5	39.1	0.391	18.0	17.0	1.0	24.4	0.244	19.2	18.1	1.1	24.4	0.244	21.4	20.8	0.6	47.6	37.3
1140	102.5	1.025	23.3	23.0	0.4	34.2	0.342	18.0	17.2	0.9	24.4	0.244	19.4	18.5	0.9	24.4	0.244	21.4	21.1	0.2	46.4	37.7
1155	102.5	1.025	23.3	23.0	0.4	34.2	0.342	18.0	17.3	0.7	19.5	0.195	19.6	19.1	0.5	24.4	0.244	21.5	21.4	0.1	45.2	38.7
1170	102.5	1.025	23.3	22.9	0.5	34.2	0.342	17.8	17.0	0.9	19.5	0.195	19.8	18.9	1.0	19.5	0.195	21.5	21.4	0.1	43.9	39.7
1185	102.5	1.025	23.2	22.8	0.4	34.2	0.342	18.0	17.4	0.6	19.5	0.195	19.8	19.0	0.9	19.5	0.195	21.7	21.5	0.2	43.9	39.7

Table A.0-7 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was empty and carbon dioxide purging time was 30 min.

						Replicate No.																
Sample No.	E01-30					E02-30					E03-30					E04-30						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	254.9	2.549	20.5	19.5	1.0	253.9	2.539	23.9	23.2	0.7	253.9	2.539	19.5	17.5	2.0	253.9	2.539	25.0	24.4	0.6	254.2	0.5
15	244.1	2.441	20.8	19.9	1.0	224.6	2.246	23.6	23.6	0.0	254.9	2.549	19.8	18.1	1.7	249.0	2.490	25.0	24.6	0.5	243.2	13.1
30	234.4	2.344	20.9	19.5	1.5	224.6	2.246	23.7	23.6	0.1	249.0	2.490	20.3	18.3	2.0	249.0	2.490	25.2	24.7	0.5	239.3	12.0
45	234.4	2.344	21.1	19.5	1.6	219.7	2.197	23.7	23.5	0.2	249.0	2.490	19.9	17.9	2.0	239.3	2.393	25.0	24.4	0.6	235.6	12.2
60	229.5	2.295	21.1	19.2	1.8	219.7	2.197	23.7	23.3	0.5	244.1	2.441	19.9	17.9	2.0	234.4	2.344	24.7	24.2	0.5	231.9	10.2
75	229.5	2.295	21.0	19.1	1.9	205.1	2.051	23.9	23.4	0.5	244.1	2.441	19.7	17.7	2.0	234.4	2.344	24.7	24.2	0.5	228.3	16.6
90	224.6	2.246	21.0	19.1	1.9	205.1	2.051	23.7	23.4	0.4	239.3	2.393	19.6	18.0	1.6	229.5	2.295	24.7	24.1	0.6	224.6	14.4
105	224.6	2.246	21.0	19.2	1.8	200.2	2.002	23.9	23.7	0.2	239.3	2.393	19.6	18.1	1.5	219.7	2.197	24.4	23.6	0.7	220.9	16.1
120	219.7	2.197	20.7	18.9	1.8	200.2	2.002	23.9	23.7	0.2	234.4	2.344	19.7	18.3	1.3	214.8	2.148	24.2	23.5	0.7	217.3	14.1
135	219.7	2.197	20.8	18.9	1.9	190.4	1.904	24.1	24.1	0.0	229.5	2.295	19.8	18.3	1.5	210.0	2.100	23.9	23.5	0.4	212.4	16.7
150	214.8	2.148	20.7	19.0	1.7	190.4	1.904	24.2	24.5	-0.2	229.5	2.295	19.6	18.0	1.6	205.1	2.051	23.5	22.9	0.6	210.0	16.4
165	214.8	2.148	20.8	18.9	1.9	190.4	1.904	24.6	24.8	-0.2	224.6	2.246	19.6	17.8	1.7	200.2	2.002	23.5	23.1	0.5	207.5	15.2
180	214.8	2.148	20.7	19.0	1.7	190.4	1.904	24.8	25.1	-0.4	219.7	2.197	19.2	17.3	1.8	195.3	1.953	23.5	22.9	0.6	205.1	14.4
195	210.0	2.100	20.7	18.6	2.1	180.7	1.807	25.1	25.1	0.0	214.8	2.148	19.4	18.1	1.3	190.4	1.904	23.3	22.8	0.5	199.0	16.1
210	205.1	2.051	20.8	18.6	2.2	180.7	1.807	25.2	25.2	0.0	214.8	2.148	19.6	18.3	1.3	185.5	1.855	23.2	22.7	0.5	196.5	16.1
225	205.1	2.051	20.7	18.7	1.9	180.7	1.807	25.3	25.4	-0.1	210.0	2.100	19.6	18.1	1.5	180.7	1.807	23.2	22.6	0.6	194.1	15.6
240	200.2	2.002	20.7	19.0	1.7	180.7	1.807	25.6	25.6	0.0	205.1	2.051	19.6	18.1	1.5	175.8	1.758	23.0	22.5	0.5	190.4	14.4
255	200.2	2.002	20.8	19.1	1.7	170.9	1.709	25.7	25.6	0.1	205.1	2.051	19.4	18.1	1.3	170.9	1.709	22.7	22.2	0.5	186.8	18.4
270	195.3	1.953	20.8	19.5	1.3	170.9	1.709	25.6	25.5	0.1	200.2	2.002	19.4	18.0	2.0	166.0	1.660	22.8	22.3	0.5	183.1	17.1
285	195.3	1.953	21.0	19.7	1.3	170.9	1.709	25.8	25.7	0.1	195.3	1.953	19.4	18.0	2.0	161.1	1.611	22.8	22.2	0.6	180.7	17.4
300	190.4	1.904	21.0	19.9	1.1	170.9	1.709	25.8	25.7	0.1	195.3	1.953	19.2	17.9	2.0	156.3	1.563	22.6	22.2	0.5	178.2	18.1
315	190.4	1.904	21.1	20.0	1.1	161.1	1.611	26.1	25.8	0.2	190.4	1.904	19.4	18.2	2.0	156.3	1.563	22.5	22.0	0.5	174.6	18.4
330	185.5	1.855	21.7	19.7	1.9	161.1	1.611	26.1	26.0	0.1	190.4	1.904	19.3	17.9	1.6	151.4	1.514	22.3	21.8	0.5	172.1	18.9
345	185.5	1.855	21.6	19.5	2.0	161.1	1.611	26.3	26.2	0.1	185.5	1.855	19.2	17.6	1.5	146.5	1.465	22.3	22.0	0.4	169.7	19.3
360	185.5	1.855	21.0	19.1	1.9	156.3	1.563	26.2	26.2	0.0	185.5	1.855	19.2	17.7	1.3	146.5	1.465	22.1	21.7	0.5	168.5	20.1
375	180.7	1.807	21.0	19.4	1.6	146.5	1.465	26.5	26.4	0.1	180.7	1.807	19.2	17.6	1.5	141.6	1.416	22.3	21.7	0.6	162.4	21.2
390	180.7	1.807	21.0	19.2	1.8	146.5	1.465	26.5	26.5	0.0	175.8	1.758	19.0	17.5	1.6	136.7	1.367	22.1	21.4	0.7	159.9	21.6
405	175.8	1.758	20.8	19.0	1.8	141.6	1.416	26.3	26.2	0.1	170.9	1.709	18.7	17.1	1.7	131.8	1.318	22.1	21.5	0.6	155.0	21.6
420	175.8	1.758	20.9	19.0	1.9	136.7	1.367	26.2	26.2	0.0	170.9	1.709	18.7	17.1	1.8	131.8	1.318	22.1	21.5	0.6	153.8	22.7
435	175.8	1.758	20.9	19.0	1.9	136.7	1.367	26.5	26.4	0.1	166.0	1.660	18.7	17.3	1.3	127.0	1.270	21.7	21.3	0.4	151.4	23.2
450	170.9	1.709	20.7	18.4	2.3	131.8	1.318	26.5	26.5	0.0	166.0	1.660	18.3	16.8	1.3	127.0	1.270	21.6	21.3	0.4	148.9	22.7
465	170.9	1.709	20.8	18.6	2.2	127.0	1.270	26.3	26.2	0.1	156.3	1.563	18.3	16.7	1.5	122.1	1.221	21.6	21.3	0.4	144.0	23.4
480	166.0	1.660	20.4	18.6	1.8	127.0	1.270	26.2	26.2	0.0	156.3	1.563	18.3	16.8	1.5	117.2	1.172	21.8	21.5	0.2	141.6	23.2
495	166.0	1.660	20.5	18.2	2.3	122.1	1.221	26.5	26.4	0.1	151.4	1.514	18.3	16.6	1.3	117.2	1.172	21.8	21.3	0.5	139.2	23.4
510	161.1	1.611	20.8	19.5	1.3	117.2	1.172	26.5	26.5	0.0	151.4	1.514	18.1	16.4	1.5	112.3	1.123	21.9	21.2	0.7	135.5	24.4
525	161.1	1.611	20.8	19.7	1.1	117.2	1.172	26.3	26.2	0.1	146.5	1.465	18.1	16.7	1.5	112.3	1.123	21.5	21.1	0.4	134.3	23.4
540	161.1	1.611	20.8	19.8	1.1	112.3	1.123	26.2	26.2	0.0	146.5	1.465	18.1	16.8	1.3	107.4	1.074	21.5	21.1	0.5	131.8	26.1

555	161.1	1.611	21.0	19.7	1.3	107.4	1.074	26.5	26.4	0.1	141.6	1.416	18.1	16.7	1.2	107.4	1.074	21.4	20.9	0.5	129.4	26.6
570	156.3	1.563	21.2	20.0	1.2	107.4	1.074	26.5	26.5	0.0	136.7	1.367	18.1	16.7	1.3	102.5	1.025	21.0	20.5	0.5	125.7	25.3
585	156.3	1.563	21.4	19.8	1.6	102.5	1.025	25.7	25.6	0.1	131.8	1.318	18.0	16.5	1.6	102.5	1.025	21.0	20.5	0.5	123.3	26.0
600	151.4	1.514	21.3	19.7	1.6	102.5	1.025	25.6	25.5	0.1	131.8	1.318	17.9	16.3	1.5	97.7	0.977	21.1	20.7	0.4	120.8	25.3
615	151.4	1.514	21.5	19.7	1.8	97.7	0.977	25.8	25.7	0.1	127.0	1.270	17.8	16.3	1.6	97.7	0.977	21.1	20.7	0.4	118.4	26.0
630	146.5	1.465	21.5	19.5	1.9	92.8	0.928	25.8	25.7	0.1	127.0	1.270	18.0	16.5	1.5	97.7	0.977	21.1	20.7	0.4	116.0	25.3
645	146.5	1.465	21.5	19.2	2.3	92.8	0.928	25.7	25.6	0.1	122.1	1.221	17.8	16.3	1.6	92.8	0.928	21.2	21.0	0.2	113.5	26.0
660	146.5	1.465	21.3	19.3	1.9	87.9	0.879	25.6	25.5	0.1	117.2	1.172	17.8	16.4	1.6	92.8	0.928	21.2	21.0	0.2	111.1	26.9
675	146.5	1.465	21.3	19.2	2.1	87.9	0.879	25.8	25.7	0.1	117.2	1.172	17.6	16.1	1.3	83.0	0.830	21.2	21.0	0.2	108.6	29.4
690	141.6	1.416	21.4	19.7	1.7	83.0	0.830	25.8	25.7	0.1	112.3	1.123	17.8	16.4	1.5	83.0	0.830	21.3	21.1	0.2	105.0	28.0
705	141.6	1.416	21.4	19.2	2.2	83.0	0.830	25.6	25.6	0.0	112.3	1.123	17.9	16.4	1.6	87.9	0.879	21.3	21.1	0.2	106.2	26.9
720	141.6	1.416	21.5	19.7	1.8	78.1	0.781	25.3	25.4	-0.1	107.4	1.074	17.8	16.4	1.5	83.0	0.830	21.3	20.9	0.4	102.5	29.0
735	141.6	1.416	21.6	19.8	1.8	78.1	0.781	25.2	25.2	0.0	107.4	1.074	18.1	16.8	1.7	78.1	0.781	21.3	21.1	0.2	101.3	30.2
750	136.7	1.367	21.5	19.2	2.3	73.2	0.732	25.1	25.1	0.0	102.5	1.025	18.3	16.7	1.7	78.1	0.781	21.4	21.0	0.4	97.7	29.0
765	136.7	1.367	21.5	19.3	2.2	73.2	0.732	24.8	25.1	-0.4	102.5	1.025	17.9	16.4	1.5	73.2	0.732	21.4	21.0	0.4	96.4	30.2
780	136.7	1.367	21.8	20.0	1.8	73.2	0.732	24.6	24.8	-0.2	97.7	0.977	18.1	16.5	1.3	73.2	0.732	21.4	21.0	0.4	95.2	30.0
795	136.7	1.367	21.7	19.8	1.9	68.4	0.684	24.2	24.5	-0.2	97.7	0.977	18.0	16.6	1.5	73.2	0.732	21.4	21.1	0.4	94.0	31.2
810	136.7	1.367	21.6	19.8	1.8	68.4	0.684	24.1	24.1	0.0	92.8	0.928	17.9	16.6	1.5	73.2	0.732	21.4	21.2	0.2	92.8	31.1
825	131.8	1.318	21.7	19.5	2.2	68.4	0.684	23.9	23.2	0.7	92.8	0.928	17.9	16.4	1.5	68.4	0.684	21.5	21.3	0.2	90.3	30.0
840	131.8	1.318	21.9	19.6	2.3	63.5	0.635	23.6	23.6	0.0	87.9	0.879	17.8	16.3	1.6	68.4	0.684	21.5	21.3	0.2	87.9	31.1
855	131.8	1.318	21.9	19.6	2.3	63.5	0.635	23.7	23.6	0.1	87.9	0.879	17.9	16.4	1.5	68.4	0.684	21.5	21.3	0.2	87.9	31.1
870	127.0	1.270	21.8	19.8	1.9	63.5	0.635	23.7	23.5	0.2	87.9	0.879	18.1	16.4	1.5	63.5	0.635	21.6	21.4	0.2	85.4	30.0
885	127.0	1.270	21.8	19.5	2.3	58.6	0.586	23.7	23.3	0.5	83.0	0.830	17.9	16.4	1.5	63.5	0.635	21.6	21.4	0.2	83.0	31.1
900	127.0	1.270	21.6	19.3	2.3	58.6	0.586	23.9	23.4	0.5	83.0	0.830	17.9	16.4	1.3	63.5	0.635	21.6	21.4	0.2	83.0	31.1
915	122.1	1.221	21.4	19.5	1.9	58.6	0.586	23.7	23.4	0.4	78.1	0.781	17.9	16.6	1.5		0.000				64.7	50.6
930	122.1	1.221	21.4	19.9	1.6	58.6	0.586	23.9	23.7	0.2	73.2	0.732	17.8	16.6	1.3		0.000				63.5	50.3
945	117.2	1.172	21.0	19.2	1.8	53.7	0.537	23.9	23.7	0.2	73.2	0.732	18.0	16.6	1.5		0.000				61.0	48.6
960	117.2	1.172	20.9	18.1	2.8	53.7	0.537	23.9	23.2	0.7	73.2	0.732	17.7	16.1	1.3		0.000				61.0	48.6
975	117.2	1.172	21.4	20.0	1.4	48.8	0.488	23.6	23.6	0.0	73.2	0.732	17.8	16.4	1.3		0.000				59.8	48.9
990	117.2	1.172	21.4	20.1	1.3	48.8	0.488	23.7	23.6	0.1	68.4	0.684	17.7	16.3	1.6		0.000				58.6	48.5
1005	112.3	1.123	20.9	19.9	0.9	48.8	0.488	23.7	23.5	0.2	68.4	0.684	17.8	16.4	1.5		0.000				57.4	46.6
1020	112.3	1.123	21.2	19.7	1.5	48.8	0.488	23.7	23.3	0.5	63.5	0.635	17.7	16.1	1.6		0.000				56.2	46.2
1035	107.4	1.074	20.7	19.2	1.5	43.9	0.439	23.9	23.4	0.5	63.5	0.635	17.9	16.4	1.3		0.000				53.7	44.6
1050	107.4	1.074	20.8	19.4	1.5	43.9	0.439	23.7	23.4	0.4	63.5	0.635	17.8	16.4	1.3		0.000				53.7	44.6
1065	102.5	1.025	21.3	19.7	1.6	43.9	0.439	23.9	23.7	0.2	58.6	0.586	17.8	16.4	1.5		0.000				51.3	42.3
1080	102.5	1.025	21.3	19.9	1.3	39.1	0.391	23.9	23.7	0.2	58.6	0.586	17.9	16.4	1.5		0.000				50.0	42.6
1095	102.5	1.025	21.4	20.2	1.2	39.1	0.391	23.9	23.2	0.7	58.6	0.586	18.1	16.6	1.5		0.000				50.0	42.6
1110	102.5	1.025	21.6	20.2	1.4	39.1	0.391	23.6	23.6	0.0	53.7	0.537	17.9	16.6	1.7		0.000				48.8	42.4
1125	102.5	1.025	21.8	20.4	1.4	39.1	0.391	23.7	23.6	0.1	53.7	0.537	18.1	16.6	1.5		0.000				48.8	42.4
1140	102.5	1.025	21.8	20.4	1.4	39.1	0.391	23.7	23.5	0.2	48.8	0.488	18.6	17.8	1.5		0.000				47.6	42.3
1155	102.5	1.025	21.8	20.3	1.6	39.1	0.391	23.7	23.3	0.5	48.8	0.488	18.7	17.5	1.3		0.000				47.6	42.3
1170	102.5	1.025	21.8	19.9	1.9	34.2	0.342	23.9	23.4	0.5	43.9	0.439	18.6	17.0	1.2		0.000				45.2	42.6
1185	102.5	1.025	21.4	19.2	2.2	34.2	0.342	23.7	23.4	0.4	43.9	0.439	18.6	17.3	1.3		0.000				45.2	42.6

Table A.0-8 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 0 (no caulking) when bin was empty and carbon dioxide purging time was 60 min.

Sample No.	E01-60					E02-60					E03-60					E04-60						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.1	18.8	2.3	253.9	2.539	19.5	18.6	1.0	253.9	2.539	19.9	19.4	0.5	258.8	2.588	26.0	24.1	1.9	255.1	2.4
15	244.1	2.441	21.0	18.9	2.1	253.9	2.539	19.6	18.7	1.0	253.9	2.539	20.2	19.2	1.0	249.0	2.490	25.5	24.1	1.4	250.2	4.7
30	229.5	2.295	21.1	19.3	1.8	249.0	2.490	19.9	19.0	0.9	249.0	2.490	20.1	18.9	1.1	239.3	2.393	25.4	24.1	1.3	241.7	9.3
45	219.7	2.197	21.1	19.3	1.8	244.1	2.441	20.2	19.2	1.0	244.1	2.441	19.9	18.9	1.0	234.4	2.344	25.4	23.8	1.7	235.6	11.5
60	210.0	2.100	21.1	19.4	1.7	239.3	2.393	20.4	19.4	1.0	244.1	2.441	19.8	18.8	1.0	229.5	2.295	26.0	24.8	1.2	230.7	15.1
75	205.1	2.051	21.1	19.4	1.7	234.4	2.344	20.5	19.5	1.0	234.4	2.344	19.6	18.7	1.0	224.6	2.246	26.1	24.7	1.3	224.6	13.8
90	210.0	2.100	20.9	19.1	1.8	229.5	2.295	20.6	19.6	1.0	234.4	2.344	19.6	18.7	1.0	219.7	2.197	26.4	25.1	1.3	223.4	10.8
105	205.1	2.051	21.2	19.3	1.9	224.6	2.246	20.6	19.7	1.0	229.5	2.295	19.5	18.7	0.9	214.8	2.148	26.3	24.8	1.6	218.5	10.8
120	205.1	2.051	21.3	18.8	2.4	224.6	2.246	21.0	20.1	1.0	224.6	2.246	19.5	18.7	0.9	214.8	2.148	26.3	24.9	1.4	217.3	9.3
135	200.2	2.002	21.3	19.4	1.8	210.0	2.100	21.2	20.4	0.8	224.6	2.246	19.5	18.7	0.9	200.2	2.002	26.2	24.9	1.3	208.7	11.5
150	195.3	1.953	21.4	19.6	1.8	210.0	2.100	21.2	20.4	0.8	219.7	2.197	19.5	18.7	0.9	195.3	1.953	26.2	24.6	1.6	205.1	12.0
165	185.5	1.855	21.3	19.4	1.8	205.1	2.051	21.4	20.6	0.8	214.8	2.148	19.5	18.5	1.0	195.3	1.953	26.2	24.9	1.3	200.2	12.6
180	185.5	1.855	21.2	19.7	1.4	200.2	2.002	21.6	20.8	0.8	210.0	2.100	19.5	18.4	1.1	185.5	1.855	26.2	25.0	1.2	195.3	12.0
195	180.7	1.807	21.0	19.6	1.4	195.3	1.953	21.6	20.7	1.0	210.0	2.100	19.4	18.5	0.9	180.7	1.807	26.1	24.7	1.3	191.7	14.0
210	175.8	1.758	21.0	19.6	1.4	185.5	1.855	22.0	21.0	1.0	205.1	2.051	19.4	18.4	1.0	175.8	1.758	26.1	24.7	1.3	185.5	13.8
225	175.8	1.758	21.0	19.6	1.4	185.5	1.855	22.0	20.9	1.1	200.2	2.002	19.2	18.2	1.0	175.8	1.758	26.1	24.9	1.2	184.3	11.5
240	170.9	1.709	21.1	19.5	1.6	180.7	1.807	22.1	21.0	1.1	200.2	2.002	19.0	18.1	1.0	170.9	1.709	26.1	24.9	1.2	180.7	13.8
255	170.9	1.709	21.2	19.6	1.6	175.8	1.758	22.2	21.2	1.0	195.3	1.953	19.0	18.1	1.0	166.0	1.660	25.9	24.9	1.1	177.0	12.8
270	166.0	1.660	21.2	19.7	1.4	175.8	1.758	22.3	21.2	1.1	190.4	1.904	18.9	17.9	1.0	161.1	1.611	26.4	25.3	1.1	173.3	12.9
285	161.1	1.611	21.2	19.7	1.4	170.9	1.709	22.4	21.3	1.1	190.4	1.904	18.9	17.8	1.1	156.3	1.563	26.4	25.3	1.1	169.7	15.1
300	161.1	1.611	21.2	19.9	1.3	170.9	1.709	22.5	21.4	1.1	185.5	1.855	18.9	17.8	1.1	156.3	1.563	26.4	25.3	1.1	168.5	12.9
315	156.3	1.563	21.3	19.9	1.4	166.0	1.660	22.7	21.7	1.1	180.7	1.807	18.8	17.5	1.3	151.4	1.514	26.4	25.3	1.1	163.6	12.9
330	156.3	1.563	21.4	19.9	1.6	161.1	1.611	22.7	21.7	1.1	175.8	1.758	18.7	17.7	1.0	146.5	1.465	26.1	25.1	1.0	159.9	12.2
345	151.4	1.514	21.2	19.5	1.7	161.1	1.611	22.8	21.7	1.1	170.9	1.709	18.5	17.3	1.2	141.6	1.416	26.1	25.1	1.0	156.3	12.6
360	151.4	1.514	21.2	19.5	1.7	156.3	1.563	22.8	21.6	1.2	170.9	1.709	18.5	17.2	1.3	141.6	1.416	25.7	24.7	1.0	155.0	12.2
375	146.5	1.465	21.4	19.6	1.8	156.3	1.563	23.0	21.8	1.2	166.0	1.660	18.4	16.9	1.5	136.7	1.367	25.9	25.0	1.0	151.4	12.6
390	146.5	1.465	21.4	19.7	1.7	141.6	1.416	23.3	22.1	1.2	166.0	1.660	18.4	17.1	1.2	131.8	1.318	25.9	24.9	1.0	146.5	14.4
405	141.6	1.416	21.4	19.9	1.6	136.7	1.367	23.1	21.9	1.2	161.1	1.611	18.3	17.1	1.2	131.8	1.318	25.9	24.9	1.0	142.8	12.8
420	141.6	1.416	21.3	19.6	1.7	136.7	1.367	22.9	21.8	1.1	156.3	1.563	18.1	16.9	1.2	127.0	1.270	25.7	24.6	1.1	140.4	12.2
435	141.6	1.416	21.3	19.4	1.8	131.8	1.318	22.9	21.8	1.1	151.4	1.514	18.1	16.5	1.6	122.1	1.221	25.4	24.3	1.1	136.7	12.6
450	136.7	1.367	21.4	19.4	1.9	127.0	1.270	22.9	21.8	1.1	151.4	1.514	17.8	16.7	1.1	122.1	1.221	25.3	24.2	1.1	134.3	12.9
465	136.7	1.367	21.4	19.6	1.8	127.0	1.270	22.6	21.7	1.0	146.5	1.465	17.9	16.8	1.1	117.2	1.172	25.2	24.0	1.2	131.8	12.6
480	131.8	1.318	21.4	19.7	1.7	122.1	1.221	22.6	21.7	0.8	141.6	1.416	17.7	16.5	1.2	117.2	1.172	25.0	23.7	1.3	128.2	10.8
495	131.8	1.318	21.5	19.6	1.9	117.2	1.172	22.6	21.7	0.8	141.6	1.416	17.6	16.3	1.2	112.3	1.123	24.9	23.5	1.3	125.7	13.4
510	127.0	1.270	21.4	19.6	1.8	117.2	1.172	22.5	21.7	0.8	136.7	1.367	17.6	16.3	1.2	107.4	1.074	24.9	23.5	1.3	122.1	12.6
525	127.0	1.270	21.4	19.7	1.7	112.3	1.123	22.5	21.7	0.8	131.8	1.318	17.6	16.6	1.0	102.5	1.025	24.7	23.5	1.2	118.4	13.4
540	122.1	1.221	21.2	19.5	1.7	107.4	1.074	22.4	21.5	0.8	131.8	1.318	17.6	16.3	1.2	102.5	1.025	24.6	23.5	1.1	116.0	13.4

555	122.1	1.221	21.4	19.6	1.8	107.4	1.074	22.5	21.6	1.0	127.0	1.270	17.4	16.3	1.1	97.7	0.977	24.4	23.0	1.4	113.5	13.4
570	122.1	1.221	21.4	19.6	1.8	102.5	1.025	22.3	21.3	1.0	127.0	1.270	17.4	16.2	1.2	97.7	0.977	24.1	22.6	1.4	112.3	14.4
585	117.2	1.172	21.3	19.4	1.8	102.5	1.025	22.3	21.3	1.0	122.1	1.221	17.4	16.4	1.0	92.8	0.928	23.9	22.6	1.3	108.6	13.4
600	117.2	1.172	21.2	19.3	1.9	97.7	0.977	22.2	21.3	1.0	122.1	1.221	17.2	16.1	1.1	92.8	0.928	23.7	22.3	1.3	107.4	14.4
615	117.2	1.172	21.4	19.2	2.2	92.8	0.928	22.2	21.2	1.0	117.2	1.172	17.3	16.1	1.2	87.9	0.879	23.5	22.3	1.2	103.8	15.6
630	117.2	1.172	21.2	19.3	1.9	92.8	0.928	22.0	21.2	0.8	117.2	1.172	17.2	16.1	1.1	87.9	0.879	23.4	22.2	1.2	103.8	15.6
645	117.2	1.172	21.2	19.1	2.1	87.9	0.879	22.0	21.0	1.0	112.3	1.123	17.1	15.7	1.3	83.0	0.830	23.2	21.9	1.3	100.1	17.1
660	112.3	1.123	21.0	19.2	1.8	87.9	0.879	22.0	21.0	1.0	112.3	1.123	17.1	15.8	1.2	83.0	0.830	23.3	22.0	1.3	98.9	15.6
675	112.3	1.123	21.2	19.1	2.1	83.0	0.830	21.6	20.8	0.8	107.4	1.074	17.1	15.9	1.1	78.1	0.781	23.3	22.1	1.2	95.2	17.1
690	112.3	1.123	20.9	19.1	1.8	83.0	0.830	21.6	20.7	1.0	102.5	1.025	16.9	15.7	1.2	78.1	0.781	23.3	22.1	1.2	94.0	16.1
705	112.3	1.123	20.9	19.2	1.7	78.1	0.781	21.5	20.5	1.0	102.5	1.025	16.8	15.8	1.0	73.2	0.732	23.3	22.1	1.2	91.6	18.9
720	112.3	1.123	20.9	19.0	1.9	78.1	0.781	21.3	20.5	0.8	97.7	0.977	16.7	15.6	1.1	73.2	0.732	23.3	21.8	1.4	90.3	18.1
735	112.3	1.123	21.0	19.0	2.1	73.2	0.732	21.3	20.3	1.0	97.7	0.977	16.6	15.5	1.1	73.2	0.732	23.0	21.5	1.4	89.1	19.3
750	107.4	1.074	20.7	18.9	1.8	73.2	0.732	21.1	20.3	0.8	92.8	0.928	16.5	15.3	1.2	68.4	0.684	23.0	21.8	1.2	85.4	18.1
765	107.4	1.074	20.9	18.8	2.1	73.2	0.732	21.1	20.3	0.8	92.8	0.928	16.4	15.3	1.1	68.4	0.684	23.0	22.1	1.0	85.4	18.1
780	107.4	1.074	21.0	19.0	2.1	68.4	0.684	21.1	20.0	1.1	87.9	0.879	16.4	15.4	1.0	63.5	0.635	23.2	22.1	1.1	81.8	20.1
795	102.5	1.025	20.9	18.8	2.1	68.4	0.684	21.0	20.1	0.8	87.9	0.879	16.6	15.8	0.7	63.5	0.635	23.2	22.2	1.0	80.6	18.1
810	102.5	1.025	21.0	19.2	1.8	68.4	0.684	20.9	20.0	1.0	83.0	0.830	16.8	16.0	0.7	63.5	0.635	23.2	22.2	1.0	79.3	17.5
825	102.5	1.025	21.0	19.2	1.8	63.5	0.635	20.7	19.8	1.0	83.0	0.830	16.8	15.8	1.0	63.5	0.635	23.0	21.8	1.2	78.1	18.7
840	102.5	1.025	20.9	19.2	1.7	63.5	0.635	20.6	19.9	0.7	83.0	0.830	16.8	15.9	0.9	58.6	0.586	23.0	22.1	1.0	76.9	20.1
855	97.7	0.977	21.1	19.0	2.1	63.5	0.635	20.6	19.7	1.0	78.1	0.781	16.9	16.2	0.7	58.6	0.586	23.1	22.2	0.8	74.5	17.5
870	97.7	0.977	21.1	19.3	1.8	58.6	0.586	20.6	19.6	1.0	78.1	0.781	16.9	16.2	0.7	58.6	0.586	23.0	22.0	1.1	73.2	18.7
885	97.7	0.977	21.1	19.4	1.7	58.6	0.586	20.4	19.4	1.0	78.1	0.781	17.2	16.4	0.7	53.7	0.537	22.9	21.7	1.2	72.0	20.1
900	97.7	0.977	21.0	19.2	1.8	58.6	0.586	20.4	19.4	1.0	78.1	0.781	17.2	16.5	0.6	53.7	0.537	22.9	21.7	1.2	72.0	20.1
915	97.7	0.977	21.3	19.4	1.9	58.6	0.586	20.3	19.3	1.0	73.2	0.732	17.3	16.8	0.5	53.7	0.537	22.7	21.6	1.1	70.8	19.7
930	97.7	0.977	21.4	19.6	1.8	53.7	0.537	20.1	19.1	1.0	73.2	0.732	17.7	17.2	0.5	53.7	0.537	22.9	21.7	1.2	69.6	20.9
945	97.7	0.977	21.5	19.4	2.1	53.7	0.537	20.1	18.9	1.2	73.2	0.732	17.7	17.2	0.5	48.8	0.488	22.7	21.4	1.3	68.4	22.2
960	97.7	0.977	21.0	19.2	1.8	48.8	0.488	20.0	19.0	1.0	73.2	0.732	17.9	17.5	0.4	48.8	0.488	22.7	21.6	1.1	67.1	23.4
975	97.7	0.977	21.2	19.0	2.2	48.8	0.488	19.8	18.9	0.9	73.2	0.732	17.9	17.5	0.4	48.8	0.488	22.5	21.3	1.2	67.1	23.4
990	92.8	0.928	21.2	19.2	1.9	48.8	0.488	19.6	18.5	1.1	73.2	0.732	18.1	17.7	0.4	43.9	0.439	22.5	21.4	1.1	64.7	22.7
1005	92.8	0.928	21.0	18.8	2.2	48.8	0.488	19.7	18.8	1.0	73.2	0.732	18.2	17.7	0.5	43.9	0.439	22.5	21.2	1.3	64.7	22.7
1020	92.8	0.928	21.0	18.9	2.1	43.9	0.439	19.6	18.5	1.1	73.2	0.732	18.4	18.0	0.4	43.9	0.439	22.4	21.0	1.3	63.5	23.9
1035	92.8	0.928	21.1	18.7	2.4	43.9	0.439	19.3	18.3	1.0	73.2	0.732	18.6	18.2	0.4	43.9	0.439	22.2	21.0	1.2	63.5	23.9
1050	92.8	0.928	21.3	19.2	2.1	43.9	0.439	19.4	18.3	1.1	68.4	0.684	18.7	18.3	0.5	39.1	0.391	22.2	21.0	1.2	61.0	24.7
1065	92.8	0.928	21.3	19.4	1.9	39.1	0.391	19.4	18.3	1.1	68.4	0.684	18.9	18.4	0.5	39.1	0.391	22.1	20.8	1.3	59.8	26.0
1080	92.8	0.928	21.5	19.4	2.1	39.1	0.391	19.4	18.2	1.2	68.4	0.684	19.3	18.7	0.6	39.1	0.391	22.1	20.9	1.2	59.8	26.0
1095	92.8	0.928	21.4	19.1	2.3	39.1	0.391	19.0	17.8	1.2	68.4	0.684	19.3	18.8	0.5	39.1	0.391	22.1	20.8	1.3	59.8	26.0
1110	87.9	0.879	21.4	19.6	1.8	39.1	0.391	19.0	17.8	1.2	68.4	0.684	19.3	18.8	0.5	39.1	0.391	22.1	20.8	1.3	58.6	23.9
1125	87.9	0.879	20.9	19.1	1.8	39.1	0.391	19.0	17.9	1.1	68.4	0.684	19.5	18.9	0.6	39.1	0.391	21.8	20.6	1.2	58.6	23.9
1140	87.9	0.879	21.0	19.1	1.9	39.1	0.391	18.9	17.6	1.2	68.4	0.684	19.8	19.3	0.5	39.1	0.391	21.8	20.3	1.4	58.6	23.9
1155	87.9	0.879	21.4	19.4	1.9	34.2	0.342	18.9	17.8	1.1	68.4	0.684	19.9	18.9	1.0	34.2	0.342	21.8	20.4	1.4	56.2	26.6
1170	87.9	0.879	21.3	19.4	1.8	34.2	0.342	18.7	17.6	1.1	68.4	0.684	20.1	19.1	1.0	34.2	0.342	21.6	20.3	1.3	56.2	26.6
1185	83.0	0.830	21.1	19.4	1.7	34.2	0.342	18.7	17.6	1.1	68.4	0.684	20.2	19.4	0.9	34.2	0.342	21.6	20.4	1.2	54.9	24.7

Table A.1-1 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was filled with wheat (11.8% m.c.) and no carbon dioxide was added.

Sample No.	G11-0					G12-0					G13-0					G14-0					Replicate No.	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	19.8	18.7	1.1	253.9	2.539	19.5	19.1	0.4	254.6	2.546	20.2	19.7	0.5	254.6	2.546	20.0	20.0	0.0	**2.5**	0.0
1	249.0	2.490	19.7	18.7	1.0	249.0	2.490	19.5	19.0	0.5	249.0	2.490	20.1	19.7	0.4	249.0	2.490	20.0	19.4	0.6	**2.5**	0.0
2	244.1	2.441	19.8	18.9	0.9	244.1	2.441	19.4	19.3	0.1	239.3	2.393	20.0	20.2	-0.2	249.0	2.490	20.1	19.5	0.6	**2.4**	0.0
3	239.3	2.393	19.8	18.7	1.1	239.3	2.393	19.4	19.2	0.2	229.5	2.295	20.0	19.6	0.4	249.0	2.490	19.8	19.1	0.7	**2.4**	0.1
4	234.4	2.344	19.8	18.8	1.0	234.4	2.344	19.4	19.2	0.2	219.7	2.197	20.0	19.5	0.5	244.1	2.441	20.0	19.2	0.9	**2.3**	0.1
5	229.5	2.295	19.9	18.7	1.2	229.5	2.295	19.5	19.2	0.2	214.8	2.148	20.1	19.6	0.5	244.1	2.441	20.0	19.1	1.0	**2.3**	0.1
6	229.5	2.295	19.8	18.7	1.1	224.6	2.246	19.6	19.5	0.1	205.1	2.051	19.9	19.6	0.4	239.3	2.393	19.9	19.2	0.7	**2.2**	0.1
7	224.6	2.246	19.8	18.7	1.1	224.6	2.246	19.5	19.4	0.1	195.3	1.953	20.1	19.4	0.6	239.3	2.393	19.8	19.6	0.2	**2.2**	0.2
8	219.7	2.197	19.7	18.6	1.1	219.7	2.197	19.3	19.3	0.0	190.4	1.904	19.9	19.4	0.5	234.4	2.344	19.9	19.8	0.1	**2.2**	0.2
9	214.8	2.148	19.7	18.6	1.1	214.8	2.148	19.6	19.6	0.0	180.7	1.807	20.1	19.5	0.6	234.4	2.344	20.0	19.6	0.5	**2.1**	0.2
10	214.8	2.148	19.5	18.6	1.0	210.0	2.100	19.4	19.3	0.1	175.8	1.758	20.0	19.5	0.5	229.5	2.295	19.9	19.3	0.6	**2.1**	0.2
11	210.0	2.100	19.4	18.6	0.9	205.1	2.051	19.5	19.9	-0.4	170.9	1.709	20.0	19.5	0.5	229.5	2.295	19.9	19.1	0.9	**2.0**	0.2
12	205.1	2.051	19.7	18.6	1.1	205.1	2.051	19.6	19.6	0.0	161.1	1.611	19.9	19.4	0.5	224.6	2.246	19.9	19.2	0.6	**2.0**	0.3
13	200.2	2.002	19.7	18.6	1.1	200.2	2.002	19.2	19.5	-0.2	156.3	1.563	19.9	19.4	0.5	224.6	2.246	19.9	19.7	0.1	**2.0**	0.3
14	200.2	2.002	19.5	18.7	0.9	195.3	1.953	19.2	19.4	-0.1	151.4	1.514	19.9	19.5	0.4	219.7	2.197	19.9	19.7	0.1	**1.9**	0.3
15	195.3	1.953	19.8	18.6	1.2	195.3	1.953	19.4	19.5	-0.1	146.5	1.465	19.9	19.5	0.4	219.7	2.197	20.0	19.7	0.2	**1.9**	0.3
16	195.3	1.953	19.7	18.6	1.1	190.4	1.904	19.4	19.4	0.0	136.7	1.367	19.9	19.4	0.5	219.7	2.197	19.9	19.5	0.4	**1.9**	0.3
17	190.4	1.904	19.7	18.8	0.9	185.5	1.855	19.6	19.6	0.0	131.8	1.318	19.9	19.4	0.5	214.8	2.148	20.1	19.2	0.9	**1.8**	0.3
18	185.5	1.855	19.7	18.6	1.1	185.5	1.855	19.6	19.6	0.0	127.0	1.270	19.8	19.3	0.5	214.8	2.148	20.0	19.2	0.7	**1.8**	0.4
19	185.5	1.855	19.5	18.6	1.0	180.7	1.807	19.5	19.6	-0.1	122.1	1.221	20.1	19.5	0.6	210.0	2.100	20.0	19.5	0.5	**1.7**	0.4
20	180.7	1.807	19.2	18.5	0.7	175.8	1.758	19.5	19.6	-0.1	117.2	1.172	19.8	19.5	0.4	210.0	2.100	20.0	19.7	0.2	**1.7**	0.4
21	175.8	1.758	19.7	18.6	1.1	170.9	1.709	19.4	19.8	-0.4	112.3	1.123	19.8	19.5	0.4	205.1	2.051	19.9	19.7	0.1	**1.7**	0.4
22	175.8	1.758	19.5	18.7	0.9	170.9	1.709	19.6	19.6	0.0	107.4	1.074	20.0	19.2	0.7	205.1	2.051	19.7	19.7	0.0	**1.6**	0.4
23	170.9	1.709	19.5	18.5	1.0	166.0	1.660	19.4	19.5	-0.1	107.4	1.074	19.8	19.3	0.5	200.2	2.002	19.6	19.4	0.2	**1.6**	0.4
24	170.9	1.709	19.7	18.9	0.7	166.0	1.660	19.6	19.7	-0.1	102.5	1.025	19.8	19.3	0.5	200.2	2.002	19.9	19.1	0.7	**1.6**	0.4
25	166.0	1.660	19.8	18.4	1.3	161.1	1.611	19.4	19.8	-0.4	97.7	0.977	19.8	19.3	0.5	195.3	1.953	19.9	19.2	0.7	**1.6**	0.4
26	161.1	1.611	19.7	18.5	1.2	156.3	1.563	19.4	19.4	0.0	92.8	0.928	19.8	19.3	0.5	195.3	1.953	19.8	19.3	0.5	**1.5**	0.4
27	161.1	1.611	19.8	18.6	1.2	156.3	1.563	19.6	19.7	-0.1	87.9	0.879	20.0	19.5	0.5	195.3	1.953	19.9	19.5	0.4	**1.5**	0.4
28	156.3	1.563	19.7	18.6	1.1	151.4	1.514	19.6	19.7	-0.1	87.9	0.879	19.9	19.5	0.4	190.4	1.904	19.8	19.9	-0.1	**1.5**	0.4
29	151.4	1.514	19.6	18.9	0.7	146.5	1.465	19.4	19.6	-0.1	83.0	0.830	20.0	19.5	0.5	190.4	1.904	20.2	19.8	0.5	**1.4**	0.4
30	151.4	1.514	19.8	18.9	0.9	146.5	1.465	19.2	19.6	-0.4	78.1	0.781	19.9	19.4	0.5	190.4	1.904	20.2	19.8	0.5	**1.4**	0.5
31	146.5	1.465	19.8	18.8	1.0	146.5	1.465	19.5	19.7	-0.2	73.2	0.732	19.9	19.4	0.5	190.4	1.904	20.2	19.8	0.5	**1.4**	0.5
32	146.5	1.465	19.8	18.9	0.9	141.6	1.416	19.6	19.5	0.1	73.2	0.732	19.9	19.6	0.4	190.4	1.904	19.9	19.4	0.5	**1.4**	0.5
33	141.6	1.416	19.8	18.9	0.9	136.7	1.367	19.5	19.9	-0.4	68.4	0.684	19.8	19.4	0.4	185.5	1.855	19.9	19.2	0.7	**1.3**	0.5
34	136.7	1.367	19.8	18.9	0.9	136.7	1.367	19.4	19.8	-0.4	68.4	0.684	19.9	19.4	0.5	185.5	1.855	19.7	18.9	0.7	**1.3**	0.5
35	136.7	1.367	19.7	18.9	0.7	141.6	1.416	19.5	19.5	0.0	63.5	0.635	19.8	19.4	0.4	185.5	1.855	19.9	19.0	0.9	**1.3**	0.5
36	131.8	1.318	19.7	18.9	0.7	185.5	1.855	18.3	11.5	6.7	63.5	0.635	19.8	19.4	0.4	180.7	1.807	19.9	19.2	0.7	**1.4**	0.6
37	131.8	1.318	19.7	18.9	0.7	210.0	2.100	18.0	11.6	6.4	58.6	0.586	19.8	19.4	0.4	180.7	1.807	19.8	19.4	0.4	**1.5**	0.7
38	131.8	1.318	19.7	18.9	0.7	210.0	2.100	18.6	13.9	4.7	58.6	0.586	19.8	19.6	0.2	175.8	1.758	19.9	19.7	0.2	**1.4**	0.7
39	127.0	1.270	19.7	19.1	0.6	205.1	2.051	19.0	15.5	3.6	58.6	0.586	19.9	19.3	0.6	175.8	1.758	19.9	19.4	0.5	**1.4**	0.6
40	122.1	1.221	19.7	19.0	0.7	190.4	1.904	19.3	16.3	2.9	53.7	0.537	20.0	19.3	0.7	170.9	1.709	20.0	19.3	0.7	**1.3**	0.6

Table A.1-1 continued...

41	122.1	1.221	19.7	19.0	0.7	190.4	1.904	19.2	17.1	2.1	53.7	0.537	19.9	19.1	0.7	170.9	1.709	19.8	19.0	0.7	**1.3**	0.6
42	117.2	1.172	19.6	19.0	0.6	185.5	1.855	19.4	17.9	1.5	48.8	0.488	19.8	19.3	0.5	170.9	1.709	19.9	19.0	0.9	**1.3**	0.6
43	112.3	1.123	19.7	19.0	0.7	175.8	1.758	19.5	18.4	1.1	48.8	0.488	19.8	19.4	0.4	166.0	1.660	19.7	19.2	0.5	**1.3**	0.6
44	107.4	1.074	19.9	18.9	1.0	170.9	1.709	19.4	18.4	1.0	48.8	0.488	19.8	19.4	0.4	166.0	1.660	19.7	19.5	0.1	**1.2**	0.6
45	97.7	0.977	19.7	19.1	0.6	166.0	1.660	19.5	18.9	0.6	43.9	0.439	19.8	19.3	0.5	166.0	1.660	19.9	19.7	0.2	**1.2**	0.6
46	97.7	0.977	19.9	19.0	0.9	161.1	1.611	19.7	18.9	0.7	43.9	0.439	19.6	19.3	0.4	161.1	1.611	19.8	19.7	0.1	**1.2**	0.6
47	92.8	0.928	19.6	19.1	0.5	156.3	1.563	19.6	18.8	0.7	43.9	0.439	19.8	19.4	0.4	161.1	1.611	19.7	19.4	0.2	**1.1**	0.6
48	92.8	0.928	19.7	19.0	0.7	151.4	1.514	19.5	19.0	0.5	39.1	0.391	19.9	19.4	0.5	161.1	1.611	19.7	19.3	0.4	**1.1**	0.6
49	87.9	0.879	19.8	19.3	0.5	146.5	1.465	19.7	19.2	0.5	39.1	0.391	19.9	19.3	0.6	156.3	1.563	19.9	19.2	0.7	**1.1**	0.5
50	87.9	0.879	19.7	19.0	0.6	141.6	1.416	19.7	19.5	0.2	39.1	0.391	19.9	19.7	0.2	156.3	1.563	19.5	19.0	0.5	**1.1**	0.5
51	83.0	0.830	19.7	19.0	0.6	136.7	1.367	19.5	19.3	0.1	39.1	0.391	19.8	19.4	0.4	151.4	1.514	20.0	19.3	0.6	**1.0**	0.5
52	83.0	0.830	19.7	19.2	0.5	131.8	1.318	19.5	19.2	0.2	34.2	0.342	19.8	19.4	0.4	151.4	1.514	19.5	19.4	0.1	**1.0**	0.5
53	78.1	0.781	19.8	19.3	0.5	127.0	1.270	19.6	19.5	0.1	34.2	0.342	19.8	19.4	0.4	151.4	1.514	19.9	19.7	0.2	**1.0**	0.5
54	78.1	0.781	19.8	19.2	0.6	122.1	1.221	19.7	19.8	-0.1	34.2	0.342	19.9	19.4	0.5	151.4	1.514	20.0	19.8	0.1	**1.0**	0.5
55	73.2	0.732	19.7	19.1	0.6	122.1	1.221	19.6	19.6	0.0	29.3	0.293	19.8	19.4	0.4	146.5	1.465	19.9	19.7	0.2	**0.9**	0.5
56	73.2	0.732	19.8	19.5	0.4	117.2	1.172	19.6	19.7	-0.1	29.3	0.293	19.9	19.7	0.2	146.5	1.465	19.7	19.3	0.4	**0.9**	0.5
57	73.2	0.732	19.8	19.2	0.6	112.3	1.123	19.5	19.9	-0.4	29.3	0.293	19.7	19.4	0.2	146.5	1.465	20.1	19.5	0.6	**0.9**	0.5
58	68.4	0.684	19.8	19.1	0.7	107.4	1.074	19.7	19.9	-0.2	29.3	0.293	19.7	19.4	0.2	141.6	1.416	19.8	19.2	0.6	**0.9**	0.5
59	68.4	0.684	19.8	19.2	0.6	107.4	1.074	19.7	19.8	-0.1	24.4	0.244	19.7	19.3	0.4	141.6	1.416	19.7	19.2	0.5	**0.9**	0.5
60	68.4	0.684	19.6	19.2	0.4	102.5	1.025	19.7	20.0	-0.2	24.4	0.244	19.8	19.3	0.5	141.6	1.416	20.0	19.3	0.6	**0.8**	0.5
61	63.5	0.635	19.7	19.1	0.6	102.5	1.025	19.7	20.1	-0.4	24.4	0.244	19.7	19.3	0.4	136.7	1.367	19.6	19.5	0.1	**0.8**	0.5
62	63.5	0.635	19.7	19.2	0.5	97.7	0.977	19.5	20.2	-0.7	24.4	0.244	19.7	19.3	0.4	136.7	1.367	19.8	19.7	0.1	**0.8**	0.5
63	58.6	0.586	19.8	19.3	0.5	92.8	0.928	19.8	20.2	-0.5	19.5	0.195	19.8	19.3	0.5	136.7	1.367	20.1	19.8	0.2	**0.8**	0.5
64	58.6	0.586	19.8	19.3	0.5	92.8	0.928	19.8	20.2	-0.5	19.5	0.195	19.7	19.3	0.4	136.7	1.367	19.5	19.5	0.0	**0.8**	0.5
65	58.6	0.586	19.9	19.3	0.6	87.9	0.879	19.8	20.0	-0.2	19.5	0.195	19.9	19.6	0.2	131.8	1.318	20.0	19.5	0.5	**0.7**	0.5
66	53.7	0.537	20.0	19.3	0.7	87.9	0.879	19.6	20.1	-0.5	19.5	0.195	20.0	19.5	0.5	131.8	1.318	19.9	19.4	0.5	**0.7**	0.5
67	53.7	0.537	19.9	19.1	0.7	83.0	0.830	19.8	20.3	-0.5	14.6	0.146	19.9	19.5	0.4	127.0	1.270	19.8	19.4	0.4	**0.7**	0.5
68	48.8	0.488	19.8	19.3	0.5	83.0	0.830	19.7	20.2	-0.5	9.8	0.098	19.9	19.5	0.4	127.0	1.270	20.0	19.4	0.6	**0.7**	0.5
69	48.8	0.488	19.8	19.4	0.4	78.1	0.781	19.7	20.3	-0.6	14.6	0.146	19.9	19.6	0.2	127.0	1.270	20.0	19.4	0.6	**0.7**	0.5
70	48.8	0.488	19.8	19.4	0.4	78.1	0.781	19.7	20.3	-0.6	14.6	0.146	19.7	19.5	0.2	127.0	1.270	20.0	19.6	0.4	**0.7**	0.5
71	43.9	0.439	19.8	19.3	0.5	73.2	0.732	19.7	20.2	-0.5	14.6	0.146	20.0	19.5	0.5	122.1	1.221	20.1	19.8	0.4	**0.6**	0.5
72	43.9	0.439	19.6	19.3	0.4	73.2	0.732	19.9	20.3	-0.5	9.8	0.098	19.9	19.5	0.4	122.1	1.221	19.9	19.8	0.1	**0.6**	0.5
73	43.9	0.439	19.8	19.4	0.4	73.2	0.732	19.7	20.2	-0.5	9.8	0.098	19.9	19.6	0.2	122.1	1.221	20.0	19.9	0.1	**0.6**	0.5
74	39.1	0.391	19.9	19.4	0.5	68.4	0.684	19.9	20.5	-0.6						122.1	1.221	20.0	19.6	0.4	**0.6**	0.5
75	39.1	0.391	19.9	19.3	0.6	68.4	0.684	19.7	20.7	-1.0						117.2	1.172	20.0	19.5	0.5	**0.6**	0.5
76	39.1	0.391	19.9	19.7	0.2	68.4	0.684	19.9	20.5	-0.6						117.2	1.172	20.0	19.4	0.6	**0.6**	0.5
77	39.1	0.391	19.8	19.4	0.4	63.5	0.635	20.0	20.3	-0.4						117.2	1.172	20.0	19.4	0.6	**0.5**	0.5
78	34.2	0.342	19.8	19.4	0.4	63.5	0.635	19.9	20.5	-0.6						117.2	1.172	19.9	19.4	0.5	**0.5**	0.5
79	34.2	0.342	19.8	19.4	0.4	58.6	0.586	19.7	20.3	-0.6						112.3	1.123	19.8	19.5	0.2	**0.5**	0.5
80	34.2	0.342	19.9	19.4	0.5	58.6	0.586	19.9	20.1	-0.2						112.3	1.123	19.8	19.8	0.0	**0.5**	0.5
81	29.3	0.293	19.8	19.4	0.4	58.6	0.586	19.7	20.6	-0.8						112.3	1.123	20.0	19.9	0.1	**0.5**	0.5
82	29.3	0.293	19.9	19.7	0.2	58.6	0.586	19.9	20.3	-0.5						112.3	1.123	20.1	19.8	0.4	**0.5**	0.5
83	29.3	0.293	19.7	19.4	0.2	53.7	0.537	19.9	20.5	-0.6						107.4	1.074	19.8	19.6	0.1	**0.5**	0.5
84	29.3	0.293	19.7	19.4	0.2	53.7	0.537	19.9	20.3	-0.4						107.4	1.074	19.8	19.3	0.5	**0.5**	0.5
85	24.4	0.244	19.7	19.3	0.4	53.7	0.537	19.9	20.2	-0.4						107.4	1.074	20.0	19.4	0.6	**0.5**	0.5
86	24.4	0.244	19.8	19.3	0.5	48.8	0.488	20.0	20.4	-0.4						107.4	1.074	19.9	19.3	0.6	**0.5**	0.5
87	24.4	0.244	19.7	19.3	0.4	48.8	0.488	20.0	20.5	-0.5						107.4	1.074	19.8	19.3	0.5	**0.5**	0.5
88	24.4	0.244	19.7	19.3	0.4	48.8	0.488	19.9	20.4	-0.5						102.5	1.025	19.9	19.4	0.5	**0.4**	0.4

Table A.1-2 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 15 min.

Sample No.	G11-15					G12-15					G13-15					G14-15						
										Replicate No.												
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	263.7	2.637	22.3	20.6	1.7	253.9	2.539	20.2	19.4	0.7	253.9	2.539	20.3	20.9	-0.6	253.9	2.539	19.5	19.6	-0.1	**2.6**	0.0
1	244.1	2.441	22.4	20.5	1.9	249.0	2.490	20.2	19.6	0.6	244.1	2.441	20.2	21.0	-0.8	253.9	2.539	19.8	19.6	0.1	**2.5**	0.0
2	239.3	2.393	22.4	20.6	1.8	244.1	2.441	20.1	19.6	0.5	239.3	2.393	20.2	20.8	-0.6	249.0	2.490	19.5	19.6	-0.1	**2.4**	0.0
3	239.3	2.393	22.6	20.6	2.0	244.1	2.441	20.3	19.9	0.5	229.5	2.295	20.2	20.7	-0.5	244.1	2.441	19.7	19.5	0.2	**2.4**	0.1
4	239.3	2.393	22.3	20.5	1.8	239.3	2.393	19.9	19.6	0.4	219.7	2.197	20.1	20.7	-0.6	239.3	2.393	19.9	19.8	0.1	**2.3**	0.1
5	234.4	2.344	22.5	20.4	2.0	234.4	2.344	20.2	19.6	0.6	219.7	2.197	20.3	20.7	-0.4	239.3	2.393	19.5	19.6	-0.1	**2.3**	0.1
6	234.4	2.344	22.5	20.6	1.9	229.5	2.295	20.2	19.6	0.6	205.1	2.051	20.2	20.6	-0.4	234.4	2.344	19.7	19.6	0.1	**2.3**	0.1
7	229.5	2.295	22.5	20.6	1.9	229.5	2.295	20.2	19.3	0.9	195.3	1.953	20.2	20.6	-0.4	234.4	2.344	19.8	19.6	0.2	**2.2**	0.2
8	229.5	2.295	22.5	20.6	1.9	224.6	2.246	20.2	19.6	0.6	190.4	1.904	20.1	20.6	-0.5	229.5	2.295	19.6	19.5	0.1	**2.2**	0.2
9	229.5	2.295	22.5	20.6	1.9	224.6	2.246	20.2	19.7	0.5	185.5	1.855	20.1	20.6	-0.5	229.5	2.295	19.8	19.7	0.1	**2.2**	0.2
10	224.6	2.246	22.3	20.5	1.8	219.7	2.197	20.2	19.7	0.5	175.8	1.758	20.1	20.6	-0.5	224.6	2.246	19.5	19.5	0.0	**2.1**	0.2
11	224.6	2.246	22.3	20.4	1.9	214.8	2.148	20.2	19.7	0.5	170.9	1.709	20.3	20.8	-0.5	219.7	2.197	19.7	19.6	0.1	**2.1**	0.2
12	224.6	2.246	22.5	20.8	1.7	214.8	2.148	20.2	19.7	0.5	166.0	1.660	20.3	20.8	-0.5	219.7	2.197	19.9	19.6	0.2	**2.1**	0.3
13	219.7	2.197	22.5	20.8	1.7	210.0	2.100	20.2	19.9	0.4	156.3	1.563	20.2	20.8	-0.6	214.8	2.148	19.6	20.0	-0.4	**2.0**	0.3
14	219.7	2.197	22.3	20.5	1.8	205.1	2.051	20.2	19.7	0.5	151.4	1.514	20.2	20.8	-0.6	205.1	2.051	19.8	19.9	-0.1	**2.0**	0.3
15	219.7	2.197	22.5	20.6	1.9	200.2	2.002	20.2	19.7	0.5	146.5	1.465	20.2	20.6	-0.5	200.2	2.002	19.9	19.9	0.0	**1.9**	0.3
16	214.8	2.148	22,5	20.6	1.9	200.2	2.002	20.2	19.9	0.4	141.6	1.416	20.2	20.6	-0.5	195.3	1.953	19.5	19.6	-0.1	**1.9**	0.3
17	214.8	2.148	22.3	20.4	1.9	195.3	1.953	20.3	19.9	0.4	136.7	1.367	20.2	20.5	-0.4	195.3	1.953	19.9	19.8	0.1	**1.9**	0.3
18	210.0	2.100	22.5	20.6	1.9	195.3	1.953	20.2	19.6	0.6	131.8	1.318	20.2	20.7	-0.5	190.4	1.904	19.9	19.8	0.1	**1.8**	0.3
19	210.0	2.100	22.6	20.7	1.9	190.4	1.904	20.2	19.6	0.6	127.0	1.270	20.2	20.7	-0.5	190.4	1.904	19.5	19.4	0.1	**1.8**	0.4
20	205.1	2.051	22.3	20.3	2.0	190.4	1.904	20.2	19.6	0.6	122.1	1.221	20.2	20.7	-0.5	185.5	1.855	19.8	19.3	0.5	**1.8**	0.4
21	205.1	2.051	22.5	20.4	2.0	185.5	1.855	20.1	19.7	0.4	117.2	1.172	20.2	20.6	-0.4	185.5	1.855	19.7	19.6	0.1	**1.7**	0.4
22	205.1	2.051	22.3	20.3	2.0	180.7	1.807	20.2	19.7	0.5	112.3	1.123	20.2	20.6	-0.4	180.7	1.807	19.7	19.4	0.2	**1.7**	0.4
23	200.2	2.002	22.3	20.5	1.8	180.7	1.807	20.4	19.8	0.6	107.4	1.074	20.2	20.6	-0.4	175.8	1.758	19.8	19.6	0.2	**1.7**	0.4
24	200.2	2.002	22.5	20.6	1.9	175.8	1.758	20.4	19.8	0.6	102.5	1.025	20.2	20.7	-0.5	175.8	1.758	19.7	19.6	0.1	**1.6**	0.4
25	200.2	2.002	22.5	20.7	1.8	170.9	1.709	20.4	19.8	0.6	102.5	1.025	20.1	20.6	-0.5	175.8	1.758	19.8	19.4	0.4	**1.6**	0.4
26	195.3	1.953	22.3	20.4	1.9	170.9	1.709	20.4	19.9	0.5	97.7	0.977	20.1	20.4	-0.4	170.9	1.709	19.8	19.4	0.4	**1.6**	0.4
27	195.3	1.953	22.4	20.3	2.2	166.0	1.660	20.4	19.8	0.6	92.8	0.928	20.1	20.4	-0.4	166.0	1.660	19.8	19.4	0.4	**1.6**	0.4
28	195.3	1.953	22.3	20.4	1.9	166.0	1.660	20.4	20.0	0.4	87.9	0.879	20.1	20.6	-0.5	166.0	1.660	19.7	19.3	0.4	**1.5**	0.5
29	190.4	1.904	22.4	20.5	1.9	161.1	1.611	20.3	19.8	0.5	87.9	0.879	20.2	20.6	-0.4	161.1	1.611	19.8	19.4	0.4	**1.5**	0.4
30	190.4	1.904	22.3	20.4	1.9	161.1	1.611	20.3	20.0	0.2	83.0	0.830	20.1	20.4	-0.4	161.1	1.611	19.7	19.6	0.1	**1.5**	0.5
31	185.5	1.855	22.5	20.4	2.0	156.3	1.563	20.4	19.7	0.7	78.1	0.781	20.1	20.4	-0.4	156.3	1.563	19.6	19.3	0.2	**1.4**	0.5
32	185.5	1.855	22.3	20.5	1.8	156.3	1.563	20.4	19.9	0.5	78.1	0.781	20.1	20.4	-0.4	156.3	1.563	19.9	19.6	0.2	**1.4**	0.5
33	185.5	1.855	22.6	20.7	1.9	151.4	1.514	20.4	19.7	0.7	73.2	0.732	20.1	20.4	-0.4	151.4	1.514	19.6	19.6	0.0	**1.4**	0.5
34	180.7	1.807	22.6	20.7	1.9	151.4	1.514	20.3	19.8	0.5	73.2	0.732	20.2	20.4	-0.2	151.4	1.514	19.8	19.6	0.2	**1.4**	0.5
35	180.7	1.807	22.3	20.4	1.9	161.1	1.611	20.1	19.6	0.5	68.4	0.684	20.1	20.4	-0.4	146.5	1.465	19.8	19.4	0.4	**1.4**	0.5
36	175.8	1.758	22.4	20.5	1.9	180.7	1.807	19.6	16.6	3.1	68.4	0.684	20.1	20.4	-0.4	146.5	1.465	19.6	19.2	0.4	**1.4**	0.5
37	175.8	1.758	22.4	20.6	1.8	180.7	1.807	19.9	16.6	3.3	63.5	0.635	20.1	20.3	-0.2	141.6	1.416	19.9	19.5	0.4	**1.4**	0.5
38	175.8	1.758	22.8	20.7	2.0	180.7	1.807	19.9	17.6	2.3	63.5	0.635	20.1	20.4	-0.4	141.6	1.416	19.6	19.2	0.4	**1.4**	0.5
39	170.9	1.709	22.3	20.4	1.9	175.8	1.758	19.9	18.0	2.0	58.6	0.586	20.1	20.4	-0.4	136.7	1.367	19.6	19.2	0.4	**1.4**	0.5
40	170.9	1.709	22.6	20.9	1.8	170.9	1.709	20.2	18.0	2.2	58.6	0.586	20.2	20.3	-0.1	136.7	1.367	19.6	19.3	0.2	**1.3**	0.5

Table A.1-2 continued...

41	166.0	1.660	22.3	20.5	1.8	166.0	1.660	20.1	18.6	1.6	58.6	0.586	20.1	20.4	-0.4	136.7	1.367	19.7	19.3	0.4	**1.3**	0.5
42	166.0	1.660	22.5	20.6	1.9	161.1	1.611	20.3	18.6	1.7	53.7	0.537	19.9	20.2	-0.2	136.7	1.367	19.4	19.3	0.1	**1.3**	0.5
43	166.0	1.660	22.5	20.6	1.9	156.3	1.563	20.1	18.6	1.6	43.9	0.439	20.1	20.2	-0.1	131.8	1.318	19.6	19.4	0.1	**1.2**	0.6
44	161.1	1.611	22.4	20.4	2.0	151.4	1.514	20.1	18.7	1.3	39.1	0.391	19.9	20.2	-0.2	131.8	1.318	19.8	19.7	0.1	**1.2**	0.6
45	161.1	1.611	22.3	20.5	1.8	151.4	1.514	20.1	18.9	1.2						127.0	1.270	19.9	19.8	0.1	**1.1**	0.7
46	161.1	1.611	22.5	20.6	1.9	146.5	1.465	20.3	18.9	1.5						127.0	1.270	19.6	19.7	-0.1	**1.1**	0.7
47	156.3	1.563	22.6	20.6	2.0	141.6	1.416	20.1	18.9	1.2						122.1	1.221	19.7	19.6	0.1	**1.0**	0.7
48	156.3	1.563	22.6	20.6	2.0	136.7	1.367	20.0	18.7	1.2						122.1	1.221	19.7	19.7	0.0	**1.0**	0.7
49	151.4	1.514	22.5	20.6	1.9	136.7	1.367	20.0	18.7	1.2						117.2	1.172	19.8	19.7	0.1	**1.0**	0.7
50	151.4	1.514	22.5	20.7	1.8	131.8	1.318	20.1	18.8	1.3						117.2	1.172	19.6	19.7	-0.1	**1.0**	0.7
51	151.4	1.514	22.6	20.7	1.9	127.0	1.270	20.1	19.1	1.0						117.2	1.172	19.9	19.7	0.1	**1.0**	0.7
52	151.4	1.514	22.5	20.6	1.9	127.0	1.270	20.1	19.3	0.9						112.3	1.123	19.8	19.4	0.4	**1.0**	0.7
53	146.5	1.465	22.5	20.4	2.0	122.1	1.221	20.0	19.3	0.7						112.3	1.123	19.7	19.6	0.1	**1.0**	0.7
54	146.5	1.465	22.5	20.6	1.9	117.2	1.172	20.1	19.0	1.1						112.3	1.123	19.6	19.6	0.0	**0.9**	0.6
55	146.5	1.465	22.5	20.4	2.0	107.4	1.074	20.1	19.0	1.1						107.4	1.074	19.9	19.7	0.2	**0.9**	0.6
56	141.6	1.416	22.5	20.8	1.7	107.4	1.074	20.1	19.0	1.1						107.4	1.074	19.7	19.6	0.1	**0.9**	0.6
57	141.6	1.416	22.6	20.9	1.8	102.5	1.025	20.0	19.4	0.6						107.4	1.074	19.8	19.8	0.0	**0.9**	0.6
58	141.6	1.416	22.6	20.7	1.9	97.7	0.977	20.3	19.2	1.1						102.5	1.025	19.7	19.7	0.0	**0.9**	0.6
59	136.7	1.367	22.5	20.6	1.9	97.7	0.977	20.1	19.0	1.1						102.5	1.025	19.6	19.7	-0.1	**0.8**	0.6
60	136.7	1.367	22.5	20.6	1.9	97.7	0.977	20.3	19.4	0.9						97.7	0.977	19.6	19.8	-0.2	**0.8**	0.6
61	136.7	1.367	22.6	20.6	2.0	92.8	0.928	20.0	19.3	0.7						97.7	0.977	19.6	19.7	-0.1	**0.8**	0.6
62	131.8	1.318	22.3	20.4	1.9	87.9	0.879	20.3	19.6	0.7						97.7	0.977	19.6	19.4	0.1	**0.8**	0.6
63	131.8	1.318	22.5	20.6	1.9	87.9	0.879	20.1	19.3	0.9						97.7	0.977	19.9	19.7	0.2	**0.8**	0.6
64	127.0	1.270	22.5	20.8	1.7	83.0	0.830	20.2	19.6	0.6						92.8	0.928	20.0	20.0	0.0	**0.8**	0.5
65	127.0	1.270	22.6	20.7	1.9	83.0	0.830	20.1	19.6	0.5						92.8	0.928	19.6	19.7	-0.1	**0.8**	0.5
66	127.0	1.270	22.6	20.7	1.9	78.1	0.781	20.0	19.5	0.5						92.8	0.928	20.0	19.9	0.1	**0.7**	0.5
67	117.2	1.172	22.6	20.9	1.8	78.1	0.781	20.1	19.1	1.0						87.9	0.879	20.0	20.0	0.0	**0.7**	0.5
68	112.3	1.123	22.4	20.7	1.7	73.2	0.732	20.0	19.3	0.7						87.9	0.879	20.0	19.9	0.1	**0.7**	0.5
69	107.4	1.074	22.6	20.9	1.8	73.2	0.732	19.8	19.3	0.5						83.0	0.830	19.7	19.7	0.0	**0.7**	0.5
70	107.4	1.074	22.6	21.0	1.7	73.2	0.732	20.0	19.4	0.6						83.0	0.830	19.8	19.7	0.1	**0.7**	0.5
71	107.4	1.074	22.6	20.9	1.8	68.4	0.684	20.1	19.5	0.6						83.0	0.830	19.7	19.7	0.0	**0.6**	0.5
72	102.5	1.025	22.8	20.8	2.0	68.4	0.684	20.1	19.5	0.6						83.0	0.830	19.9	19.9	0.0	**0.6**	0.4
73	102.5	1.025	22.7	20.9	1.8	68.4	0.684	20.1	19.5	0.6						78.1	0.781	20.0	19.9	0.1	**0.6**	0.4
74	102.5	1.025	22.6	20.7	1.9	63.5	0.635	20.0	19.5	0.5						78.1	0.781	19.9	19.7	0.1	**0.6**	0.4
75	102.5	1.025	22.5	20.4	2.0	63.5	0.635	20.1	19.5	0.6											**0.4**	0.5
76						58.6	0.586	20.1	19.8	0.4											**0.1**	0.3
77						58.6	0.586	20.0	19.4	0.6											**0.1**	0.3
78						58.6	0.586	20.3	19.7	0.6											**0.1**	0.3
79						58.6	0.586	20.3	19.6	0.7											**0.1**	0.3
80						53.7	0.537	19.9	19.4	0.5											**0.1**	0.3
81						53.7	0.537	20.1	19.4	0.7											**0.1**	0.3
82						53.7	0.537	20.2	19.4	0.9											**0.1**	0.3
83						48.8	0.488	20.2	19.4	0.9											**0.1**	0.2
84						48.8	0.488	20.1	19.5	0.6											**0.1**	0.2
85						48.8	0.488	20.1	19.1	1.0											**0.1**	0.2
86						48.8	0.488	20.1	19.6	0.5											**0.1**	0.2
87						43.9	0.439	20.1	19.4	0.7											**0.1**	0.2
88						43.9	0.439	20.1	19.4	0.7											**0.1**	0.2

Table A.1-3 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 30 min.

Sample No.	G11-30					G12-30					G13-30					G14-30						
	Replicate No.																					
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.0	18.5	2.6	253.9	2.539	19.5	18.1	1.5	253.9	2.539	19.7	19.8	-0.1	253.9	2.539	19.5	20.0	-0.5	**2.5**	0.0
1	249.0	2.490	21.0	18.4	2.7	249.0	2.490	19.6	18.2	1.3	244.1	2.441	19.8	19.8	0.0	249.0	2.490	19.5	19.8	-0.2	**2.5**	0.0
2	249.0	2.490	21.0	18.2	2.8	244.1	2.441	19.8	18.4	1.5	234.4	2.344	19.9	19.9	0.0	244.1	2.441	19.4	19.8	-0.4	**2.4**	0.1
3	249.0	2.490	21.2	18.4	2.8	239.3	2.393	19.6	18.2	1.3	224.6	2.246	20.0	19.8	0.2	244.1	2.441	19.6	19.8	-0.2	**2.4**	0.1
4	244.1	2.441	21.2	18.5	2.7	234.4	2.344	19.5	18.1	1.3	214.8	2.148	19.9	19.8	0.1	244.1	2.441	19.4	19.7	-0.2	**2.3**	0.1
5	239.3	2.393	21.0	18.4	2.7	234.4	2.344	19.5	18.2	1.2	210.0	2.100	19.8	19.8	0.0	239.3	2.393	19.7	19.7	0.0	**2.3**	0.1
6	234.4	2.344	21.0	18.5	2.6	229.5	2.295	19.6	18.3	1.3	200.2	2.002	19.8	19.8	0.0	234.4	2.344	19.5	19.5	0.0	**2.2**	0.2
7	234.4	2.344	21.0	18.4	2.7	224.6	2.246	19.5	18.0	1.5	195.3	1.953	19.8	19.8	0.0	234.4	2.344	19.5	19.6	-0.1	**2.2**	0.2
8	234.4	2.344	20.9	18.1	2.8	219.7	2.197	19.5	18.2	1.2	185.5	1.855	19.8	19.8	0.0	229.5	2.295	19.3	19.3	0.0	**2.2**	0.2
9	229.5	2.295	21.0	18.4	2.7	214.8	2.148	19.6	18.3	1.3	180.7	1.807	19.8	19.7	0.1	224.6	2.246	19.7	19.5	0.2	**2.1**	0.2
10	229.5	2.295	21.0	18.2	2.8	214.8	2.148	19.5	18.3	1.2	175.8	1.758	19.8	19.6	0.2	224.6	2.246	19.6	19.5	0.1	**2.1**	0.2
11	224.6	2.246	21.0	18.5	2.6	210.0	2.100	19.5	18.3	1.2	166.0	1.660	19.7	19.6	0.1	219.7	2.197	19.6	19.5	0.1	**2.1**	0.3
12	224.6	2.246	20.9	18.2	2.7	205.1	2.051	19.5	18.2	1.3	161.1	1.611	19.7	19.6	0.1	214.8	2.148	19.5	19.2	0.2	**2.0**	0.3
13	219.7	2.197	21.0	18.4	2.7	205.1	2.051	19.5	18.2	1.3	161.1	1.611	19.9	19.7	0.1	214.8	2.148	19.3	19.3	0.0	**2.0**	0.3
14	219.7	2.197	21.0	18.4	2.7	229.5	2.295	18.3	13.2	5.0	151.4	1.514	19.7	19.7	0.0	210.0	2.100	19.8	19.4	0.4	**2.0**	0.4
15	214.8	2.148	20.9	18.1	2.8	249.0	2.490	18.2	12.5	5.8	146.5	1.465	19.9	19.6	0.2	210.0	2.100	19.6	19.2	0.4	**2.1**	0.4
16	214.8	2.148	20.8	18.1	2.7	253.9	2.539	18.6	13.1	5.5	141.6	1.416	19.6	19.6	0.0	205.1	2.051	19.4	19.4	0.0	**2.0**	0.5
17	210.0	2.100	21.0	18.4	2.6	249.0	2.490	19.2	15.1	4.2	136.7	1.367	19.7	19.6	0.1	205.1	2.051	19.5	19.4	0.1	**2.0**	0.5
18	210.0	2.100	21.2	18.6	2.6	244.1	2.441	19.2	15.7	3.6	131.8	1.318	19.9	19.8	0.1	200.2	2.002	19.5	19.2	0.2	**2.0**	0.5
19	205.1	2.051	20.7	17.9	2.8	239.3	2.393	19.4	16.7	2.7	127.0	1.270	19.9	19.8	0.1	195.3	1.953	19.8	19.4	0.4	**1.9**	0.5
20	205.1	2.051	20.8	18.1	2.7	234.4	2.344	19.3	17.1	2.2	122.1	1.221	19.8	19.8	0.0	190.4	1.904	19.5	19.4	0.1	**1.9**	0.5
21	205.1	2.051	20.7	18.1	2.6	229.5	2.295	19.5	17.3	2.2	117.2	1.172	19.6	19.5	0.1	190.4	1.904	19.8	19.3	0.5	**1.9**	0.5
22	200.2	2.002	21.0	18.3	2.7	224.6	2.246	19.6	17.8	1.7	112.3	1.123	19.8	19.7	0.1	185.5	1.855	19.8	19.3	0.5	**1.8**	0.5
23	200.2	2.002	20.9	18.4	2.4	224.6	2.246	19.4	18.0	1.3	107.4	1.074	19.7	19.7	0.0	185.5	1.855	19.6	19.3	0.4	**1.8**	0.5
24	195.3	1.953	20.9	18.2	2.7	214.8	2.148	19.5	18.3	1.2	102.5	1.025	19.8	19.7	0.1	180.7	1.807	19.6	19.4	0.2	**1.7**	0.5
25	195.3	1.953	20.7	18.0	2.7	210.0	2.100	19.7	18.5	1.2	97.7	0.977	19.8	19.7	0.1	180.7	1.807	19.6	19.4	0.2	**1.7**	0.5
26	190.4	1.904	20.8	18.3	2.6	205.1	2.051	19.5	18.5	1.0	97.7	0.977	19.8	19.7	0.1	175.8	1.758	19.6	19.4	0.2	**1.7**	0.5
27	185.5	1.855	20.9	18.7	2.2	200.2	2.002	19.5	18.8	0.7	92.8	0.928	19.5	19.7	-0.1	170.9	1.709	19.4	19.3	0.1	**1.6**	0.5
28	180.7	1.807	20.9	18.8	2.1	195.3	1.953	19.4	18.5	0.9	87.9	0.879	19.8	19.8	0.0	170.9	1.709	19.4	19.3	0.1	**1.6**	0.5
29	180.7	1.807	21.0	19.0	2.1	190.4	1.904	19.6	18.7	0.9	83.0	0.830	19.5	19.5	0.0	166.0	1.660	19.5	19.3	0.2	**1.6**	0.5
30	175.8	1.758	21.1	19.3	1.8	185.5	1.855	19.3	18.7	0.6	83.0	0.830	19.7	19.8	-0.1	166.0	1.660	19.4	19.4	0.0	**1.5**	0.5
31	170.9	1.709	21.1	19.1	1.9	180.7	1.807	19.5	18.5	1.0	78.1	0.781	19.5	19.5	0.0	161.1	1.611	19.4	19.4	0.0	**1.5**	0.5
32	166.0	1.660	21.1	19.3	1.8	180.7	1.807	19.7	18.8	0.9	73.2	0.732	19.6	19.7	-0.1	161.1	1.611	19.4	19.4	0.0	**1.5**	0.5
33	161.1	1.611	21.1	19.3	1.8	175.8	1.758	19.5	18.8	0.7	73.2	0.732	19.8	19.7	0.1	156.3	1.563	19.5	19.5	0.0	**1.4**	0.5
34	156.3	1.563	21.3	19.5	1.8	170.9	1.709	19.4	18.8	0.6	68.4	0.684	19.8	19.7	0.1	156.3	1.563	19.5	19.5	0.0	**1.4**	0.5
35	151.4	1.514	21.3	19.5	1.8	166.0	1.660	19.7	18.8	0.9	63.5	0.635	20.0	19.9	0.1	151.4	1.514	19.3	19.6	-0.4	**1.3**	0.5
36	146.5	1.465	21.2	19.4	1.8	161.1	1.611	19.5	18.8	0.6	63.5	0.635	19.8	19.9	-0.1	151.4	1.514	19.4	19.8	-0.4	**1.3**	0.5
37	141.6	1.416	21.3	20.0	1.3	161.1	1.611	19.6	19.0	0.6	58.6	0.586	19.9	19.8	0.1	146.5	1.465	19.6	19.9	-0.4	**1.3**	0.5
38	136.7	1.367	21.3	19.8	1.6	156.3	1.563	19.6	18.9	0.7	58.6	0.586	19.8	19.8	0.0	146.5	1.465	19.5	19.8	-0.2	**1.2**	0.4
39	131.8	1.318	21.5	19.7	1.8	151.4	1.514	19.5	18.9	0.6	53.7	0.537	19.8	19.8	0.0	141.6	1.416	19.7	19.8	-0.1	**1.2**	0.4
40	127.0	1.270	21.4	19.7	1.7	151.4	1.514	19.5	18.9	0.6	53.7	0.537	19.8	19.8	0.0	141.6	1.416	19.3	19.6	-0.4	**1.2**	0.4

Table A.1-3 continued...

41	117.2	1.172	21.4	19.8	1.6	146.5	1.465	19.4	18.9	0.5	48.8	0.488	19.8	19.9	-0.1	136.7	1.367	19.5	19.5	0.0	**1.1**	0.4
42	107.4	1.074	21.6	19.9	1.7	141.6	1.416	19.5	19.0	0.5	48.8	0.488	19.6	19.8	-0.1	136.7	1.367	19.5	19.5	0.0	**1.1**	0.4
43	107.4	1.074	21.4	19.8	1.6	141.6	1.416	19.7	19.2	0.5	43.9	0.439	19.6	19.8	-0.1	131.8	1.318	19.4	19.4	0.0	**1.1**	0.4
44	107.4	1.074	21.6	20.0	1.6	136.7	1.367	19.7	18.8	0.9	43.9	0.439	19.5	19.8	-0.2	131.8	1.318	19.6	19.6	0.0	**1.0**	0.4
45	97.7	0.977	21.4	20.0	1.4	136.7	1.367	19.6	19.1	0.5	39.1	0.391	19.6	19.8	-0.1	127.0	1.270	19.6	19.3	0.2	**1.0**	0.4
46	97.7	0.977	21.4	19.9	1.6	131.8	1.318	19.4	18.9	0.5	39.1	0.391	19.8	19.8	0.0	127.0	1.270	19.3	19.2	0.1	**1.0**	0.4
47	92.8	0.928	21.4	20.0	1.4	131.8	1.318	19.6	19.2	0.4	39.1	0.391	19.8	19.8	0.0	122.1	1.221	19.3	19.1	0.1	**1.0**	0.4
48	87.9	0.879	21.6	20.2	1.4	127.0	1.270	19.6	19.1	0.5	34.2	0.342	19.8	19.8	0.0	122.1	1.221	19.4	19.1	0.2	**0.9**	0.4
49	87.9	0.879	21.5	20.3	1.2	122.1	1.221	19.6	19.1	0.5	34.2	0.342	19.8	19.8	0.0	122.1	1.221	19.4	19.6	-0.1	**0.9**	0.4
50	83.0	0.830	21.7	20.3	1.3	122.1	1.221	19.4	18.9	0.5	34.2	0.342	19.8	19.8	0.0	117.2	1.172	19.1	19.5	-0.4	**0.9**	0.4
51	78.1	0.781	21.5	20.3	1.2	117.2	1.172	19.6	19.2	0.4	34.2	0.342	19.8	19.8	0.0	112.3	1.123	19.6	19.9	-0.4	**0.9**	0.4
52	73.2	0.732	21.7	20.4	1.3	117.2	1.172	19.7	19.1	0.6	34.2	0.342	19.8	19.8	0.0	107.4	1.074	19.3	19.9	-0.6	**0.8**	0.4
53	73.2	0.732	21.7	20.4	1.3	112.3	1.123	19.6	19.1	0.5	34.2	0.342	19.8	19.8	0.0	97.7	0.977	19.6	19.9	-0.4	**0.8**	0.3
54	68.4	0.684	21.8	20.7	1.1	112.3	1.123	19.5	19.1	0.4	29.3	0.293	19.7	19.8	-0.1	97.7	0.977	19.4	19.4	0.0	**0.8**	0.4
55	68.4	0.684	21.8	20.4	1.3	107.4	1.074	19.6	18.9	0.7	29.3	0.293	19.6	19.5	0.1	97.7	0.977	19.6	19.4	0.1	**0.8**	0.4
56	63.5	0.635	21.8	20.3	1.4	107.4	1.074	19.5	18.9	0.6	29.3	0.293	19.8	19.8	0.0	92.8	0.928	19.6	19.3	0.2	**0.7**	0.3
57	58.6	0.586	21.8	20.6	1.2	102.5	1.025	19.5	19.0	0.5	29.3	0.293	19.6	19.6	0.0	92.8	0.928	19.4	19.3	0.1	**0.7**	0.3
58	58.6	0.586	21.8	20.5	1.3	102.5	1.025	19.5	19.0	0.5	29.3	0.293	19.7	19.8	-0.1	92.8	0.928	19.6	19.3	0.2	**0.7**	0.3
59	53.7	0.537	21.9	20.3	1.6	97.7	0.977	19.5	19.0	0.5	29.3	0.293	19.6	19.5	0.1	87.9	0.879	19.7	19.7	0.0	**0.7**	0.3
60	53.7	0.537	21.9	20.5	1.3	97.7	0.977	19.8	19.0	0.7	29.3	0.293	19.8	19.8	0.0	87.9	0.879	19.6	19.4	0.1	**0.7**	0.3
61	48.8	0.488	21.9	20.4	1.4	92.8	0.928	19.7	19.2	0.5	29.3	0.293	19.6	19.6	0.0	87.9	0.879	19.4	19.6	-0.1	**0.6**	0.3
62	48.8	0.488	21.9	20.2	1.7	92.8	0.928	19.7	19.2	0.5						87.9	0.879	19.3	19.6	-0.2	**0.6**	0.4
63	43.9	0.439	21.9	20.3	1.6	87.9	0.879	19.7	19.3	0.4						83.0	0.830	19.7	19.8	-0.1	**0.5**	0.4
64	43.9	0.439	21.9	20.3	1.6	87.9	0.879	19.7	19.0	0.6						83.0	0.830	19.6	19.8	-0.2	**0.5**	0.4
65	39.1	0.391	21.9	19.9	1.9	87.9	0.879	19.8	19.3	0.5						83.0	0.830	19.4	19.6	-0.1	**0.5**	0.4
66	39.1	0.391	21.7	19.9	1.8	83.0	0.830	19.5	19.0	0.5						78.1	0.781	19.6	19.8	-0.2	**0.5**	0.4
67	39.1	0.391	21.5	19.7	1.8	83.0	0.830	19.7	19.3	0.4						78.1	0.781	19.8	19.8	0.0	**0.5**	0.4
68	39.1	0.391	21.7	19.9	1.8	78.1	0.781	19.7	19.1	0.6						78.1	0.781	19.7	19.8	-0.1	**0.5**	0.4
69	39.1	0.391	21.7	19.4	2.3	78.1	0.781	19.8	19.2	0.6						73.2	0.732	19.7	19.7	0.0	**0.5**	0.4
70	34.2	0.342	21.7	19.5	2.2	73.2	0.732	19.5	19.2	0.2						73.2	0.732	19.4	19.6	-0.1	**0.5**	0.4
71	39.1	0.391	21.5	19.1	2.4	73.2	0.732	19.6	19.1	0.5						73.2	0.732	19.7	19.7	0.0	**0.5**	0.3
72	39.1	0.391	21.5	19.3	2.2	68.4	0.684	19.6	19.2	0.4						73.2	0.732	19.4	19.4	0.0	**0.5**	0.3
73	34.2	0.342	21.5	18.9	2.5	68.4	0.684	19.8	19.4	0.4						68.4	0.684	19.7	19.7	0.0	**0.4**	0.3
74	34.2	0.342	21.6	19.0	2.7	68.4	0.684	19.6	19.3	0.4						68.4	0.684	19.7	19.6	0.1	**0.4**	0.3
75	34.2	0.342	21.5	18.9	2.5	63.5	0.635	19.6	19.1	0.5						68.4	0.684	19.9	19.7	0.1	**0.4**	0.3
76	34.2	0.342	21.5	18.9	2.5	63.5	0.635	19.6	19.1	0.5						63.5	0.635	19.4	19.6	-0.1	**0.4**	0.3
77	34.2	0.342	21.6	18.9	2.7	63.5	0.635	19.7	19.4	0.2						63.5	0.635	19.6	19.5	0.1	**0.4**	0.3
78	34.2	0.342	21.4	18.5	2.9	58.6	0.586	19.8	19.2	0.6						63.5	0.635	19.6	19.4	0.1	**0.4**	0.3
79	34.2	0.342	21.4	18.8	2.7	58.6	0.586	19.7	19.2	0.5						63.5	0.635	19.6	19.6	0.0	**0.4**	0.3
80	34.2	0.342	21.4	18.3	3.0	58.6	0.586	19.7	19.1	0.6						58.6	0.586	19.7	19.6	0.1	**0.4**	0.3
81	29.3	0.293	21.4	18.9	2.5	53.7	0.537	19.4	19.0	0.4						58.6	0.586	19.3	19.4	-0.1	**0.4**	0.3
82	29.3	0.293	21.5	18.9	2.7	53.7	0.537	19.7	19.3	0.4						58.6	0.586	19.7	19.6	0.1	**0.4**	0.3
83	29.3	0.293	21.5	18.9	2.7	53.7	0.537	19.6	19.3	0.2						58.6	0.586	19.6	19.4	0.1	**0.4**	0.3
84	29.3	0.293	21.4	18.3	3.0	48.8	0.488	19.7	19.3	0.4						53.7	0.537	19.3	19.4	-0.1	**0.3**	0.2
85	29.3	0.293	21.3	18.3	3.0	48.8	0.488	19.8	19.4	0.4						53.7	0.537	19.4	19.6	-0.1	**0.3**	0.2
86	29.3	0.293	21.2	18.4	2.8	48.8	0.488	19.8	19.4	0.4						53.7	0.537	19.4	19.6	-0.1	**0.3**	0.2
87	29.3	0.293	21.5	18.8	2.7	48.8	0.488	19.6	19.3	0.4						53.7	0.537	19.4	19.8	-0.4	**0.3**	0.2
88	29.3	0.293	21.3	18.3	3.0	43.9	0.439	19.6	19.0	0.6						48.8	0.488	19.6	19.8	-0.2	**0.3**	0.2

Table A.1-4 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 60 min.

	Replicate No.																					
Sample No.	G11-60					G12-60					G13-60					G14-60						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	249.0	2.490	22.8	19.8	3.0	244.1	2.441	19.8	18.9	0.9	229.5	2.295	19.6	19.5	0.1	253.9	2.539	19.7	19.7	0.0	**2.4**	0.1
1	244.1	2.441	23.0	19.9	3.1	239.3	2.393	19.8	18.7	1.1	224.6	2.246	19.5	19.7	-0.1	253.9	2.539	19.7	19.5	0.1	**2.4**	0.1
2	244.1	2.441	23.0	19.7	3.2	234.4	2.344	19.8	18.8	1.0	214.8	2.148	19.4	19.7	-0.2	249.0	2.490	19.7	19.5	0.1	**2.4**	0.2
3	239.3	2.393	22.9	19.7	3.1	229.5	2.295	19.9	18.7	1.2	205.1	2.051	19.4	19.5	-0.1	244.1	2.441	19.4	19.4	0.0	**2.3**	0.2
4	239.3	2.393	22.9	19.7	3.1	229.5	2.295	19.8	18.7	1.1	200.2	2.002	19.3	19.5	-0.2	244.1	2.441	19.5	19.4	0.1	**2.3**	0.2
5	234.4	2.344	22.9	19.6	3.2	224.6	2.246	19.8	18.7	1.1	195.3	1.953	19.4	19.5	-0.1	239.3	2.393	19.7	19.4	0.2	**2.2**	0.2
6	234.4	2.344	22.7	19.6	3.1	219.7	2.197	19.7	18.6	1.1	185.5	1.855	19.6	19.6	0.0	239.3	2.393	19.5	19.4	0.1	**2.2**	0.2
7	229.5	2.295	22.9	19.7	3.1	214.8	2.148	19.7	18.6	1.1	175.8	1.758	19.3	19.6	-0.2	234.4	2.344	19.7	19.4	0.2	**2.1**	0.3
8	229.5	2.295	22.6	19.6	3.0	214.8	2.148	19.5	18.6	1.0	175.8	1.758	19.5	19.5	0.0	229.5	2.295	19.5	19.3	0.2	**2.1**	0.3
9	229.5	2.295	22.7	19.7	3.0	210.0	2.100	19.4	18.6	0.9	166.0	1.660	19.3	19.5	-0.1	229.5	2.295	19.5	19.4	0.1	**2.1**	0.3
10	224.6	2.246	22.7	19.7	3.0	205.1	2.051	19.7	18.6	1.1	161.1	1.611	19.2	19.5	-0.2	224.6	2.246	19.6	19.5	0.1	**2.0**	0.3
11	224.6	2.246	22.8	19.5	3.2	200.2	2.002	19.7	18.6	1.1	156.3	1.563	19.5	19.6	-0.1	219.7	2.197	19.5	19.4	0.1	**2.0**	0.3
12	224.6	2.246	22.8	19.7	3.1	200.2	2.002	19.5	18.7	0.9	151.4	1.514	19.2	19.3	-0.1	219.7	2.197	19.2	19.3	-0.1	**2.0**	0.3
13	219.7	2.197	22.8	19.7	3.1	195.3	1.953	19.8	18.6	1.2	146.5	1.465	19.5	19.5	0.0	214.8	2.148	19.3	19.3	0.0	**1.9**	0.3
14	219.7	2.197	22.7	19.4	3.4	195.3	1.953	19.7	18.6	1.1	141.6	1.416	19.3	19.5	-0.2	210.0	2.100	19.7	19.3	0.4	**1.9**	0.3
15	214.8	2.148	22.8	19.8	3.0	190.4	1.904	19.7	18.8	0.9	136.7	1.367	19.1	19.4	-0.2	210.0	2.100	19.5	19.3	0.1	**1.9**	0.4
16	214.8	2.148	22.7	19.7	3.0	185.5	1.855	19.7	18.6	1.1	131.8	1.318	19.4	19.5	-0.1	205.1	2.051	19.9	19.6	0.2	**1.8**	0.4
17	214.8	2.148	22.8	19.7	3.1	185.5	1.855	19.5	18.6	1.0	127.0	1.270	19.4	19.4	0.0	205.1	2.051	19.3	19.3	0.0	**1.8**	0.4
18	210.0	2.100	22.8	19.5	3.2	180.7	1.807	19.2	18.5	0.7	122.1	1.221	19.6	19.6	0.0	200.2	2.002	19.8	19.5	0.2	**1.8**	0.4
19	210.0	2.100	22.7	19.5	3.1	175.8	1.758	19.7	18.6	1.1	117.2	1.172	19.3	19.3	0.0	195.3	1.953	19.6	19.5	0.1	**1.7**	0.4
20	205.1	2.051	22.7	19.5	3.1	175.8	1.758	19.5	18.7	0.9	117.2	1.172	19.3	19.4	-0.1	195.3	1.953	19.6	19.4	0.2	**1.7**	0.4
21	205.1	2.051	22.7	19.7	3.0	170.9	1.709	19.5	18.5	1.0	112.3	1.123	19.3	19.4	-0.1	195.3	1.953	19.4	19.4	0.0	**1.7**	0.4
22	205.1	2.051	22.6	19.7	2.9	170.9	1.709	19.7	18.9	0.7	112.3	1.123	19.4	19.4	0.0	190.4	1.904	19.5	19.5	0.0	**1.7**	0.4
23	200.2	2.002	22.3	19.1	3.3	166.0	1.660	19.8	18.4	1.3	107.4	1.074	19.6	19.4	0.1	185.5	1.855	19.5	19.4	0.1	**1.6**	0.4
24	200.2	2.002	22.3	19.2	3.1	161.1	1.611	19.7	18.5	1.2	102.5	1.025	19.3	19.4	-0.1	185.5	1.855	19.3	19.4	-0.1	**1.6**	0.4
25	200.2	2.002	22.2	18.9	3.3	161.1	1.611	19.8	18.6	1.2	97.7	0.977	19.2	19.3	-0.1	180.7	1.807	19.5	19.3	0.2	**1.6**	0.4
26	195.3	1.953	22.5	19.2	3.3	156.3	1.563	19.7	18.6	1.1	92.8	0.928	19.6	19.6	0.0	180.7	1.807	19.3	19.4	-0.1	**1.6**	0.5
27	195.3	1.953	22.3	19.2	3.1	151.4	1.514	19.6	18.9	0.7	92.8	0.928	19.4	19.6	-0.2	175.8	1.758	19.6	19.4	0.2	**1.5**	0.4
28	195.3	1.953	22.3	19.0	3.4	151.4	1.514	19.8	18.9	0.9	87.9	0.879	19.4	19.5	-0.1	175.8	1.758	19.4	19.4	0.0	**1.5**	0.5
29	190.4	1.904	22.5	19.2	3.3	146.5	1.465	19.8	18.8	1.0	87.9	0.879	19.2	19.6	-0.4	170.9	1.709	19.3	19.4	-0.1	**1.5**	0.4
30	190.4	1.904	22.5	19.1	3.4	146.5	1.465	19.8	18.9	0.9	83.0	0.830	19.4	19.5	-0.1	170.9	1.709	19.6	19.6	0.0	**1.5**	0.5
31	190.4	1.904	22.7	19.4	3.3	141.6	1.416	19.8	18.9	0.9	78.1	0.781	19.3	19.3	0.0	166.0	1.660	19.4	19.4	0.0	**1.4**	0.5
32	190.4	1.904	22.7	19.3	3.4	136.7	1.367	19.8	18.9	0.9	78.1	0.781	19.5	19.5	0.0	166.0	1.660	19.5	19.4	0.1	**1.4**	0.5
33	185.5	1.855	22.7	19.3	3.4	136.7	1.367	19.7	18.9	0.7	68.4	0.684	19.2	19.3	-0.1	161.1	1.611	19.6	19.6	0.0	**1.4**	0.5
34	185.5	1.855	22.7	19.2	3.5	131.8	1.318	19.7	18.9	0.7	63.5	0.635	19.5	19.5	0.0	161.1	1.611	19.4	19.4	0.0	**1.4**	0.5
35	180.7	1.807	22.6	19.2	3.4	131.8	1.318	19.7	18.9	0.7	58.6	0.586	19.4	19.4	0.0	156.3	1.563	19.7	19.6	0.1	**1.3**	0.5
36	180.7	1.807	22.6	19.4	3.1	131.8	1.318	19.7	18.9	0.7	53.7	0.537	19.5	19.4	0.1	156.3	1.563	19.4	19.6	-0.1	**1.3**	0.6
37	180.7	1.807	22.6	19.4	3.1	127.0	1.270	19.7	19.1	0.6	48.8	0.488	19.1	19.4	-0.2	151.4	1.514	19.6	19.6	0.0	**1.3**	0.6
38	175.8	1.758	22.6	19.4	3.1	122.1	1.221	19.7	19.0	0.7	48.8	0.488	19.5	19.5	0.0	151.4	1.514	19.5	19.4	0.1	**1.2**	0.6
39	175.8	1.758	22.7	19.7	3.0	122.1	1.221	19.7	19.0	0.7	48.8	0.488	19.3	19.5	-0.2	146.5	1.465	19.5	19.5	0.0	**1.2**	0.5
40	175.8	1.758	22.6	19.4	3.1	117.2	1.172	19.6	19.0	0.6	43.9	0.439	19.5	19.7	-0.1	146.5	1.465	19.7	19.7	0.0	**1.2**	0.6

Table A.1-4 continued...

41	170.9	1.709	22.6	19.5	3.0	112.3	1.123	19.7	19.0	0.7	43.9	0.439	19.2	19.4	-0.1	146.5	1.465	19.3	19.7	-0.4	**1.2**	0.6
42	170.9	1.709	22.6	19.4	3.1	107.4	1.074	19.9	18.9	1.0	43.9	0.439	19.5	19.4	0.1	141.6	1.416	19.3	19.6	-0.2	**1.2**	0.5
43	170.9	1.709	22.6	19.3	3.3	97.7	0.977	19.7	19.1	0.6	39.1	0.391	19.3	19.5	-0.2	141.6	1.416	19.1	19.4	-0.2	**1.1**	0.6
44	166.0	1.660	22.4	19.1	3.3	97.7	0.977	19.9	19.0	0.9	39.1	0.391	19.3	19.5	-0.2	136.7	1.367	19.1	19.4	-0.2	**1.1**	0.5
45	166.0	1.660	22.4	19.3	3.1	92.8	0.928	19.6	19.1	0.5	39.1	0.391	19.4	19.5	-0.1	136.7	1.367	19.3	19.7	-0.4	**1.1**	0.6
46	166.0	1.660	22.3	19.0	3.3	92.8	0.928	19.7	19.0	0.7	39.1	0.391	19.2	19.5	-0.4	136.7	1.367	19.6	19.6	0.0	**1.1**	0.6
47	166.0	1.660	22.2	19.0	3.3	87.9	0.879	19.8	19.3	0.5	39.1	0.391	19.4	19.4	0.0	131.8	1.318	19.6	19.6	0.0	**1.1**	0.6
48	161.1	1.611	22.4	19.2	3.3	87.9	0.879	19.7	19.0	0.6	34.2	0.342	19.3	19.5	-0.2	131.8	1.318	19.4	19.7	-0.2	**1.0**	0.6
49	161.1	1.611	22.4	19.2	3.3	83.0	0.830	19.7	19.0	0.6	34.2	0.342	19.4	19.4	0.0	127.0	1.270	19.6	19.8	-0.2	**1.0**	0.6
50	161.1	1.611	22.6	19.3	3.3	83.0	0.830	19.7	19.2	0.5	34.2	0.342	19.2	19.4	-0.2	127.0	1.270	19.1	19.5	-0.4	**1.0**	0.6
51	156.3	1.563	22.8	19.5	3.2	78.1	0.781	19.8	19.3	0.5	34.2	0.342	19.3	19.4	-0.1	122.1	1.221	19.3	19.4	-0.1	**1.0**	0.5
52	156.3	1.563	22.8	19.6	3.1	78.1	0.781	19.8	19.2	0.6	34.2	0.342	19.3	19.4	-0.1	122.1	1.221	19.4	19.4	0.0	**1.0**	0.5
53	156.3	1.563	22.6	19.6	3.0	73.2	0.732	19.7	19.1	0.6	29.3	0.293	19.3	19.4	-0.1	122.1	1.221	19.4	19.6	-0.1	**1.0**	0.6
54	151.4	1.514	22.6	19.6	3.0	73.2	0.732	19.8	19.5	0.4	29.3	0.293	19.0	19.4	-0.4	117.2	1.172	19.3	19.4	-0.1	**0.9**	0.5
55	151.4	1.514	22.6	19.5	3.1	73.2	0.732	19.8	19.2	0.6	29.3	0.293	19.2	19.4	-0.2	117.2	1.172	19.4	19.4	0.0	**0.9**	0.5
56	151.4	1.514	22.6	19.6	3.0	68.4	0.684	19.8	19.1	0.7	29.3	0.293	19.6	19.6	0.0	117.2	1.172	19.6	19.4	0.1	**0.9**	0.5
57	146.5	1.465	22.6	19.6	3.0	68.4	0.684	19.8	19.2	0.6	29.3	0.293	19.3	19.6	-0.2	112.3	1.123	19.4	19.4	0.0	**0.9**	0.5
58	146.5	1.465	22.6	19.6	3.0	68.4	0.684	19.6	19.2	0.4	29.3	0.293	19.6	19.5	0.1	112.3	1.123	19.3	19.4	-0.1	**0.9**	0.5
59	141.6	1.416	22.6	19.6	3.0	63.5	0.635	19.7	19.1	0.6	24.4	0.244	19.2	19.6	-0.4	107.4	1.074	19.6	19.4	0.1	**0.8**	0.5
60	141.6	1.416	22.7	19.8	2.9	63.5	0.635	19.7	19.2	0.5	24.4	0.244	19.5	19.5	0.0	107.4	1.074	19.6	19.7	-0.1	**0.8**	0.5
61	141.6	1.416	22.7	19.8	2.9	58.6	0.586	19.8	19.3	0.5	24.4	0.244	19.5	19.6	-0.1	107.4	1.074	19.6	19.7	-0.1	**0.8**	0.5
62	136.7	1.367	22.7	19.8	2.9	58.6	0.586	19.8	19.3	0.5	24.4	0.244	19.5	19.6	-0.1	102.5	1.025	19.7	19.7	0.0	**0.8**	0.5
63	136.7	1.367	22.7	19.8	2.9	58.6	0.586	19.9	19.3	0.6	24.4	0.244	19.5	19.5	0.0	102.5	1.025	19.7	20.0	-0.2	**0.8**	0.5
64	136.7	1.367	22.7	19.7	3.0	53.7	0.537	20.0	19.3	0.7	24.4	0.244	19.5	19.6	-0.1	97.7	0.977	19.7	20.0	-0.2	**0.8**	0.5
65	131.8	1.318	22.8	19.8	3.0	53.7	0.537	19.9	19.1	0.7	24.4	0.244	19.3	19.5	-0.1	92.8	0.928	19.6	20.0	-0.4	**0.8**	0.5
66	131.8	1.318	22.5	19.6	2.9	48.8	0.488	19.8	19.3	0.5	24.4	0.244	19.6	19.5	0.1	83.0	0.830	19.4	19.7	-0.4	**0.7**	0.5
67	131.8	1.318	22.7	19.8	2.9	48.8	0.488	19.8	19.4	0.4	24.4	0.244	19.3	19.5	-0.1	83.0	0.830	19.5	19.7	-0.2	**0.7**	0.5
68	127.0	1.270	22.7	19.8	2.9	48.8	0.488	19.8	19.4	0.4	24.4	0.244	19.3	19.5	-0.1	83.0	0.830	19.7	19.9	-0.1	**0.7**	0.4
69	127.0	1.270	22.7	19.9	2.8	43.9	0.439	19.8	19.3	0.5	24.4	0.244	19.2	19.5	-0.2	78.1	0.781	19.3	19.6	-0.2	**0.7**	0.4
70	122.1	1.221	22.5	19.5	3.0	43.9	0.439	19.6	19.3	0.4	24.4	0.244	19.2	19.5	-0.2	78.1	0.781	19.6	19.6	0.0	**0.7**	0.4
71	117.2	1.172	22.7	19.6	3.1	43.9	0.439	19.8	19.4	0.4	24.4	0.244	19.3	19.5	-0.1	78.1	0.781	19.2	19.6	-0.4	**0.7**	0.4
72	117.2	1.172	22.7	19.7	3.0	39.1	0.391	19.9	19.4	0.5	19.5	0.195	18.9	19.3	-0.5	78.1	0.781	19.5	19.7	-0.2	**0.6**	0.4
73	112.3	1.123	22.9	19.9	3.0	39.1	0.391	19.9	19.3	0.6						73.2	0.732	19.5	19.6	-0.1	**0.6**	0.5
74	112.3	1.123	22.9	20.0	2.9	39.1	0.391	19.9	19.7	0.2						73.2	0.732	19.4	19.4	0.0	**0.6**	0.5
75	112.3	1.123	22.9	20.1	2.8	39.1	0.391	19.8	19.4	0.4						73.2	0.732	19.6	19.7	-0.1	**0.6**	0.5
76	107.4	1.074	22.7	20.1	2.6	34.2	0.342	19.8	19.4	0.4						73.2	0.732	19.5	19.6	-0.1	**0.5**	0.5
77	107.4	1.074	22.7	20.0	2.8	34.2	0.342	19.8	19.4	0.4						73.2	0.732	19.5	19.6	-0.1	**0.5**	0.5
78	107.4	1.074	22.7	20.2	2.5	34.2	0.342	19.9	19.4	0.5						73.2	0.732	19.6	19.6	0.0	**0.5**	0.5
79	102.5	1.025	22.7	20.3	2.4	29.3	0.293	19.8	19.4	0.4						68.4	0.684	19.3	19.6	-0.2	**0.5**	0.4
80	102.5	1.025	22.6	19.8	2.8	29.3	0.293	19.9	19.7	0.2						68.4	0.684	19.4	19.6	-0.1	**0.5**	0.4
81	102.5	1.025	22.7	20.0	2.8	29.3	0.293	19.7	19.4	0.2						68.4	0.684	19.2	19.6	-0.4	**0.5**	0.4
82	97.7	0.977	22.4	19.8	2.6	29.3	0.293	19.7	19.4	0.2						68.4	0.684	19.4	19.7	-0.2	**0.5**	0.4
83	97.7	0.977	22.7	20.0	2.8	24.4	0.244	19.7	19.3	0.4						63.5	0.635	19.1	19.5	-0.4	**0.5**	0.4
84	97.7	0.977	22.7	20.0	2.8	24.4	0.244	19.8	19.3	0.5						63.5	0.635	19.5	19.9	-0.4	**0.5**	0.4
85	92.8	0.928	22.6	19.6	3.0	24.4	0.244	19.7	19.3	0.4						63.5	0.635	19.7	19.6	0.1	**0.5**	0.4
86	92.8	0.928	22.7	20.0	2.8	24.4	0.244	19.7	19.3	0.4						63.5	0.635	19.7	19.6	0.1	**0.5**	0.4
87	92.8	0.928	22.7	19.7	3.0	19.5	0.195	19.8	19.3	0.5						63.5	0.635	19.6	19.7	-0.1	**0.4**	0.4
88	87.9	0.879	22.7	19.9	2.9	19.5	0.195	19.7	19.3	0.4						58.6	0.586	19.4	19.7	-0.2	**0.4**	0.4

Table A.1-5 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was empty and no carbon dioxide was added.

Sample No.	E11-0					E12-0					E13-0					E14-0						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	22.3	20.1	2.3	253.9	2.539	20.8	20.4	0.4	253.9	2.539	21.3	19.9	1.4	253.9	2.539	20.3	19.9	0.4	**2.5**	0.0
1	244.1	2.441	22.3	20.2	2.2	234.4	2.344	20.8	20.6	0.2	234.4	2.344	20.8	19.9	1.0	224.6	2.246	22.5	19.8	2.8	**2.3**	0.1
2	239.3	2.393	22.3	19.9	2.4	229.5	2.295	20.8	20.6	0.2	224.6	2.246	20.6	19.9	0.7	219.7	2.197	20.9	19.6	1.3	**2.3**	0.1
3	239.3	2.393	22.3	19.9	2.4	224.6	2.246	20.7	20.7	0.0	214.8	2.148	20.4	19.9	0.5	219.7	2.197	19.7	19.6	0.1	**2.2**	0.1
4	239.3	2.393	22.5	20.1	2.4	224.6	2.246	20.7	20.6	0.1	205.1	2.051	20.5	19.9	0.6	214.8	2.148	19.9	19.9	0.0	**2.2**	0.1
5	239.3	2.393	22.5	20.1	2.4	224.6	2.246	20.8	20.7	0.1	200.2	2.002	20.1	19.8	0.4	214.8	2.148	20.1	19.9	0.2	**2.2**	0.2
6	239.3	2.393	22.3	20.1	2.3	219.7	2.197	20.6	20.6	0.0	190.4	1.904	20.0	19.8	0.2	210.0	2.100	20.7	19.9	0.8	**2.1**	0.2
7	239.3	2.393	22.5	20.3	2.2	219.7	2.197	20.8	20.8	0.0	185.5	1.855	20.3	19.9	0.4	210.0	2.100	19.5	19.6	-0.1	**2.1**	0.2
8	239.3	2.393	22.3	20.1	2.3	214.8	2.148	20.8	20.8	0.0	180.7	1.807	20.2	19.9	0.2	210.0	2.100	20.7	19.6	1.1	**2.1**	0.2
9	239.3	2.393	22.5	20.1	2.4	214.8	2.148	20.8	20.6	0.2	175.8	1.758	20.2	19.8	0.4	205.1	2.051	20.6	19.6	1.0	**2.1**	0.3
10	239.3	2.393	22.5	20.6	1.9	214.8	2.148	20.8	20.7	0.1	170.9	1.709	19.9	19.9	0.0	205.1	2.051	18.4	19.6	-1.2	**2.1**	0.3
11	239.3	2.393	22.4	20.5	1.9	214.8	2.148	20.8	20.7	0.1	161.1	1.611	20.1	19.8	0.2	205.1	2.051	18.9	19.7	-0.7	**2.1**	0.3
12	239.3	2.393	22.4	20.2	2.2	210.0	2.100	20.8	20.7	0.1	161.1	1.611	19.6	19.5	0.1	205.1	2.051	19.8	19.8	0.0	**2.0**	0.3
13	239.3	2.393	22.4	20.3	2.0	210.0	2.100	20.8	20.7	0.1	151.4	1.514	19.9	19.6	0.2	200.2	2.002	20.4	19.8	0.6	**2.0**	0.4
14	239.3	2.393	22.4	20.2	2.2	210.0	2.100	20.8	20.7	0.1	146.5	1.465	20.1	19.8	0.2	200.2	2.002	20.7	19.7	1.0	**2.0**	0.4
15	239.3	2.393	22.5	20.3	2.2	205.1	2.051	20.8	20.8	0.0	146.5	1.465	20.1	19.8	0.2	200.2	2.002	18.8	19.6	-0.9	**2.0**	0.4
16	239.3	2.393	22.5	20.3	2.2	205.1	2.051	20.8	20.7	0.1	141.6	1.416	19.9	19.8	0.1	200.2	2.002	18.2	19.4	-1.2	**2.0**	0.4
17	239.3	2.393	22.4	20.3	2.0	205.1	2.051	20.8	20.7	0.1	136.7	1.367	19.8	19.7	0.1	200.2	2.002	20.8	19.7	1.1	**2.0**	0.4
18	239.3	2.393	22.5	20.2	2.3	205.1	2.051	20.8	20.7	0.1	131.8	1.318	20.1	20.0	0.1	195.3	1.953	20.8	20.0	0.8	**1.9**	0.4
19	239.3	2.393	22.5	20.0	2.5	200.2	2.002	20.7	20.7	0.0	127.0	1.270	19.9	19.7	0.2	195.3	1.953	20.9	19.9	1.1	**1.9**	0.5
20	239.3	2.393	22.4	20.2	2.2	200.2	2.002	20.8	20.6	0.2	122.1	1.221	19.8	19.7	0.1	195.3	1.953	18.2	19.6	-1.3	**1.9**	0.5
21	239.3	2.393	22.5	20.1	2.4	195.3	1.953	20.8	20.5	0.4	117.2	1.172	19.9	19.9	0.0	195.3	1.953	18.0	19.6	-1.6	**1.9**	0.5
22	239.3	2.393	22.5	19.9	2.6	195.3	1.953	21.0	20.7	0.4	117.2	1.172	20.0	19.9	0.1	195.3	1.953	20.8	19.4	1.3	**1.9**	0.5
23	239.3	2.393	22.5	20.2	2.3	195.3	1.953	20.8	20.6	0.2	112.3	1.123	19.7	19.9	-0.1	195.3	1.953	18.2	19.4	-1.2	**1.9**	0.5
24	239.3	2.393	22.5	20.2	2.3	195.3	1.953	20.9	20.9	0.0	107.4	1.074	19.9	19.9	0.0	190.4	1.904	20.7	19.7	1.0	**1.8**	0.6
25	239.3	2.393	22.5	20.1	2.4	195.3	1.953	20.8	20.6	0.2	107.4	1.074	19.9	19.9	0.0	190.4	1.904	18.1	20.0	-1.8	**1.8**	0.6
26	239.3	2.393	22.5	20.2	2.3	195.3	1.953	21.0	20.9	0.1	102.5	1.025	20.0	19.9	0.1	190.4	1.904	18.6	20.0	-1.3	**1.8**	0.6
27	239.3	2.393	22.5	20.1	2.4	190.4	1.904	20.8	20.7	0.1	97.7	0.977	19.8	19.7	0.1	190.4	1.904	19.2	19.9	-0.6	**1.8**	0.6
28	239.3	2.393	22.7	20.2	2.5	190.4	1.904	20.8	20.7	0.1	97.7	0.977	19.7	19.7	0.0	185.5	1.855	20.9	19.7	1.2	**1.8**	0.6
29	239.3	2.393	22.5	20.1	2.4	190.4	1.904	20.8	20.7	0.1	92.8	0.928	19.7	19.6	0.1	185.5	1.855	20.8	19.6	1.2	**1.8**	0.6
30	239.3	2.393	22.5	20.0	2.5	190.4	1.904	20.8	20.7	0.1	87.9	0.879	19.9	19.6	0.2	185.5	1.855	18.5	19.6	-1.1	**1.8**	0.6
31	239.3	2.393	22.5	20.1	2.4	185.5	1.855	20.7	20.6	0.1	87.9	0.879	19.7	19.7	0.0	185.5	1.855	20.5	19.7	0.7	**1.7**	0.6
32	239.3	2.393	22.7	20.4	2.3	185.5	1.855	20.8	20.6	0.2	83.0	0.830	19.9	19.7	0.1	185.5	1.855	18.4	20.0	-1.6	**1.7**	0.7
33	239.3	2.393	22.7	20.5	2.2	185.5	1.855	20.8	20.6	0.2	83.0	0.830	19.6	19.6	0.0	180.7	1.807	19.7	20.0	-0.2	**1.7**	0.7
34	234.4	2.344	22.5	20.2	2.3	180.7	1.807	20.8	20.7	0.1	78.1	0.781	19.6	19.6	0.0	180.7	1.807	18.3	19.7	-1.5	**1.7**	0.7
35	234.4	2.344	22.5	20.1	2.4	180.7	1.807	20.8	20.7	0.1	73.2	0.732	19.3	19.4	-0.1	180.7	1.807	20.3	19.7	0.6	**1.7**	0.7
36	234.4	2.344	22.5	20.1	2.4	180.7	1.807	20.8	20.7	0.1	73.2	0.732	19.6	19.6	0.0	180.7	1.807	20.8	19.6	1.2	**1.7**	0.7
37	234.4	2.344	22.6	19.9	2.8	180.7	1.807	20.8	20.7	0.1	73.2	0.732	19.6	19.7	-0.1	180.7	1.807	20.7	19.6	1.1	**1.7**	0.7
38	234.4	2.344	22.6	19.6	3.0	175.8	1.758	20.8	20.5	0.4	68.4	0.684	19.9	19.7	0.1	180.7	1.807	18.3	19.6	-1.3	**1.6**	0.7
39	244.1	2.441	22.5	16.6	5.8	175.8	1.758	20.7	20.7	0.0	68.4	0.684	19.7	19.4	0.2	175.8	1.758	18.4	19.9	-1.5	**1.7**	0.7
40	244.1	2.441	22.5	17.7	4.7	170.9	1.709	20.7	20.6	0.1	58.6	0.586	19.7	19.4	0.2	175.8	1.758	20.9	20.0	1.0	**1.6**	0.8

Table A.1-5 continued...

41	244.1	2.441	22.5	18.7	3.7	175.8	1.758	20.8	20.6	0.2	63.5	0.635	19.7	19.6	0.1	175.8	1.758	20.0	19.9	0.1	**1.6**	0.7
42	239.3	2.393	22.3	19.2	3.1	170.9	1.709	20.8	20.6	0.2	58.6	0.586	19.9	19.6	0.2	175.8	1.758	20.9	19.9	1.1	**1.6**	0.8
43	239.3	2.393	22.3	19.5	2.8	170.9	1.709	20.8	20.6	0.2	58.6	0.586	19.4	19.4	0.0	175.8	1.758	20.7	19.7	1.0	**1.6**	0.8
44	234.4	2.344	22.3	19.6	2.6	170.9	1.709	20.8	20.5	0.4	58.6	0.586	19.7	19.6	0.1	175.8	1.758	21.1	19.6	1.4	**1.6**	0.7
45	234.4	2.344	22.3	19.8	2.5	170.9	1.709	20.8	20.1	0.7	53.7	0.537	19.4	19.6	-0.2	175.8	1.758	20.8	19.6	1.2	**1.6**	0.8
46	229.5	2.295	22.3	19.8	2.5	166.0	1.660	20.7	20.2	0.5	53.7	0.537	19.6	19.6	0.0	170.9	1.709	20.7	19.7	1.0	**1.6**	0.7
47	229.5	2.295	22.3	19.9	2.4	166.0	1.660	20.8	20.4	0.5	53.7	0.537	19.6	19.3	0.2	170.9	1.709	20.3	19.9	0.5	**1.6**	0.7
48	229.5	2.295	22.3	19.9	2.4	166.0	1.660	20.7	20.6	0.1	48.8	0.488	19.4	19.3	0.1	170.9	1.709	19.9	19.8	0.1	**1.5**	0.8
49	229.5	2.295	22.3	19.8	2.5	161.1	1.611	20.8	20.6	0.2	48.8	0.488	19.7	19.3	0.4	170.9	1.709	18.1	19.8	-1.7	**1.5**	0.8
50	229.5	2.295	22.2	19.9	2.3	161.1	1.611	20.8	20.5	0.4	48.8	0.488	19.3	19.4	-0.1	170.9	1.709	21.2	19.7	1.4	**1.5**	0.8
51	229.5	2.295	22.3	19.9	2.4	161.1	1.611	20.6	20.3	0.2	43.9	0.439	19.6	19.4	0.1	166.0	1.660	19.9	19.6	0.2	**1.5**	0.8
52	229.5	2.295	22.3	19.9	2.4	161.1	1.611	20.8	20.5	0.4	43.9	0.439	19.6	19.4	0.1	166.0	1.660	19.4	19.6	-0.2	**1.5**	0.8
53	224.6	2.246	22.3	19.9	2.4	156.3	1.563	20.8	20.5	0.4	43.9	0.439	19.6	19.6	0.0	166.0	1.660	18.5	19.6	-1.1	**1.5**	0.8
54	224.6	2.246	22.3	19.9	2.4	156.3	1.563	20.7	20.2	0.5	39.1	0.391	19.4	19.3	0.1	166.0	1.660	18.9	19.7	-0.7	**1.5**	0.8
55	224.6	2.246	22.3	19.8	2.5	151.4	1.514	20.7	20.1	0.6	39.1	0.391	19.2	19.0	0.2	166.0	1.660	20.6	19.9	0.7	**1.5**	0.8
56	224.6	2.246	22.3	19.8	2.5	151.4	1.514	20.5	19.8	0.7	39.1	0.391	19.2	19.0	0.2	166.0	1.660	18.0	20.0	-2.0	**1.5**	0.8
57	224.6	2.246	22.3	19.9	2.4	146.5	1.465	20.5	20.0	0.5	39.1	0.391	19.3	19.1	0.1	166.0	1.660	19.9	19.9	0.0	**1.4**	0.8
58	224.6	2.246	22.3	19.9	2.4	146.5	1.465	20.7	20.3	0.4	39.1	0.391	19.4	19.1	0.2	161.1	1.611	20.1	19.7	0.4	**1.4**	0.8
59	224.6	2.246	22.3	19.6	2.6	146.5	1.465	20.5	20.3	0.2	39.1	0.391	19.5	19.1	0.4	161.1	1.611	18.1	19.7	-1.6	**1.4**	0.8
60	224.6	2.246	22.3	19.8	2.5	141.6	1.416	20.4	20.3	0.1	34.2	0.342	19.1	19.0	0.1	161.1	1.611	20.6	19.6	1.0	**1.4**	0.8
61	219.7	2.197	22.3	19.8	2.5	141.6	1.416	20.5	20.4	0.1	34.2	0.342	19.4	19.3	0.1	161.1	1.611	19.6	19.6	0.0	**1.4**	0.8
62	219.7	2.197	22.3	19.8	2.5	136.7	1.367	20.5	20.3	0.2	34.2	0.342	19.4	19.3	0.1	161.1	1.611	20.6	19.9	0.7	**1.4**	0.8
63	219.7	2.197	22.3	19.9	2.4	136.7	1.367	20.5	20.3	0.2	34.2	0.342	19.4	19.3	0.1	161.1	1.611	19.2	19.9	-0.6	**1.4**	0.8
64	219.7	2.197	22.3	19.9	2.4	136.7	1.367	20.5	20.2	0.4	29.3	0.293	19.3	19.3	0.0	156.3	1.563	18.0	19.9	-1.8	**1.4**	0.8
65	219.7	2.197	22.3	19.9	2.4	136.7	1.367	20.4	20.2	0.2	29.3	0.293	19.6	19.4	0.1	156.3	1.563	18.5	19.9	-1.3	**1.4**	0.8
66	219.7	2.197	22.1	19.8	2.3	131.8	1.318	20.4	20.4	0.0	29.3	0.293	19.6	19.3	0.2	156.3	1.563	20.7	19.6	1.1	**1.3**	0.8
67	219.7	2.197	22.1	19.8	2.3	131.8	1.318	20.5	20.4	0.1	29.3	0.293	19.1	19.0	0.1	156.3	1.563	20.7	19.4	1.2	**1.3**	0.8
68	214.8	2.148	22.1	19.8	2.3	131.8	1.318	20.3	20.2	0.1	29.3	0.293	19.4	19.3	0.1	156.3	1.563	19.2	19.9	-0.7	**1.3**	0.8
69	214.8	2.148	22.2	19.8	2.4	127.0	1.270	20.5	20.4	0.1	29.3	0.293	19.3	19.3	0.0	156.3	1.563	18.4	19.7	-1.3	**1.3**	0.8
70	214.8	2.148	22.1	19.8	2.3	127.0	1.270	20.4	20.4	0.0	29.3	0.293	19.6	19.4	0.1	156.3	1.563	18.0	19.9	-1.8	**1.3**	0.8
71	214.8	2.148	22.1	19.6	2.5	127.0	1.270	20.2	20.1	0.1	29.3	0.293	19.3	19.3	0.0	151.4	1.514	18.4	19.9	-1.5	**1.3**	0.8
72	214.8	2.148	22.1	19.7	2.4	122.1	1.221	20.5	20.4	0.1	29.3	0.293	19.3	19.1	0.1	151.4	1.514	18.4	19.9	-1.5	**1.3**	0.8
73	214.8	2.148	22.2	19.6	2.6	122.1	1.221	20.2	20.2	0.0	24.4	0.244	19.3	19.3	0.0	151.4	1.514	18.9	19.7	-0.9	**1.3**	0.8
74	214.8	2.148	22.1	19.7	2.4	122.1	1.221	20.2	20.1	0.1	24.4	0.244	19.3	19.4	-0.1	151.4	1.514	19.7	19.6	0.1	**1.3**	0.8
75	214.8	2.148	22.0	19.5	2.4	122.1	1.221	20.2	20.1	0.1	24.4	0.244	19.6	19.3	0.2	151.4	1.514	20.8	19.6	1.2	**1.3**	0.8
76	214.8	2.148	22.1	19.5	2.5	117.2	1.172	20.2	20.2	0.0	24.4	0.244	19.6	19.5	0.1	151.4	1.514	20.5	19.6	0.8	**1.3**	0.8
77	214.8	2.148	22.0	19.5	2.4	117.2	1.172	20.2	20.1	0.1	24.4	0.244	19.6	19.5	0.1	151.4	1.514	19.5	19.7	-0.2	**1.3**	0.8
78	210.0	2.100	22.0	19.5	2.4	117.2	1.172	20.2	20.1	0.1	24.4	0.244	19.7	19.5	0.2	151.4	1.514	21.1	20.1	1.0	**1.3**	0.8
79	210.0	2.100	22.1	19.4	2.7	117.2	1.172	20.3	20.2	0.1	24.4	0.244	19.4	19.3	0.1	146.5	1.465	20.8	20.0	0.8	**1.2**	0.8
80	210.0	2.100	22.0	19.4	2.5	112.3	1.123	20.3	20.1	0.2	24.4	0.244	19.3	19.3	0.0	146.5	1.465	20.7	19.9	0.8	**1.2**	0.8
81	210.0	2.100	22.0	19.4	2.5	112.3	1.123	20.2	20.2	0.0	24.2	0.242	19.4	19.3	0.1	146.5	1.465	18.0	19.7	-1.7	**1.2**	0.8
82	210.0	2.100	22.0	19.5	2.4	112.3	1.123	20.2	20.1	0.1	24.4	0.244	19.5	19.5	0.0	146.5	1.465	19.9	19.5	0.4	**1.2**	0.8
83	210.0	2.100	22.1	19.4	2.7	112.3	1.123	20.3	20.1	0.2	24.4	0.244	19.3	19.3	0.0	146.5	1.465	19.5	19.5	0.0	**1.2**	0.8
84	210.0	2.100	22.1	19.5	2.5	107.4	1.074	20.2	20.2	0.0	24.4	0.244	19.4	19.3	0.1	146.5	1.465	17.9	19.6	-1.7	**1.2**	0.8
85	210.0	2.100	22.1	19.7	2.4	107.4	1.074	20.2	20.2	0.0	24.4	0.244	19.6	19.4	0.2	146.5	1.465	21.1	19.9	1.2	**1.2**	0.8
86	210.0	2.100	21.9	19.2	2.7	107.4	1.074	20.2	20.1	0.1	24.4	0.244	19.3	18.9	0.4	146.5	1.465	18.4	19.9	-1.5	**1.2**	0.8
87	205.1	2.051	22.1	19.5	2.5	107.4	1.074	20.2	20.1	0.1	24.4	0.244	19.0	18.9	0.1	146.5	1.465	18.5	20.0	-1.5	**1.2**	0.8
88	205.1	2.051	22.1	19.7	2.4	102.5	1.025	20.2	20.1	0.1	19.5	0.195	19.3	19.0	0.2	141.6	1.416	18.4	19.9	-1.5	**1.2**	0.8

Table A.1-5 continued...

89	205.1	2.051	22.1	19.5	2.5	102.5	1.025	20.2	20.2	0.0	19.5	0.195	19.6	19.4	0.2	141.6	1.416	18.6	19.6	-1.0	**1.2**	0.8
90	210.0	2.100	21.9	19.5	2.4	102.5	1.025	20.1	20.2	-0.1	19.5	0.195	19.3	19.1	0.1	141.6	1.416	20.4	19.8	0.6	**1.2**	0.8
91	205.1	2.051	22.1	19.5	2.5	102.5	1.025	20.1	20.1	0.0	19.5	0.195	19.6	19.5	0.1	141.6	1.416	20.9	19.6	1.3	**1.2**	0.8
92	205.1	2.051	22.1	19.7	2.4	102.5	1.025	20.1	20.1	0.0	19.5	0.195	19.5	19.5	0.0	141.6	1.416	19.5	19.9	-0.4	**1.2**	0.8
93	205.1	2.051	22.1	19.4	2.7	97.7	0.977	20.2	19.9	0.2	19.5	0.195	19.6	19.5	0.1	141.6	1.416	18.4	20.0	-1.6	**1.2**	0.8
94	205.1	2.051	21.9	19.2	2.7	97.7	0.977	20.1	20.1	0.0	24.4	0.244	19.5	19.4	0.1	141.6	1.416	21.1	19.9	1.2	**1.2**	0.8
95	205.1	2.051	21.9	19.4	2.5	97.7	0.977	20.1	20.1	0.0	19.5	0.195	19.3	19.2	0.1	141.6	1.416	20.6	19.7	0.8	**1.2**	0.8
96	205.1	2.051	21.9	19.5	2.4	97.7	0.977	20.2	20.1	0.1	19.5	0.195	19.5	19.4	0.1	136.7	1.367	20.6	19.7	0.8	**1.1**	0.8
97	205.1	2.051	21.9	19.5	2.4	97.7	0.977	20.1	19.9	0.1	19.5	0.195	19.5	19.5	0.0	136.7	1.367	18.5	19.5	-1.0	**1.1**	0.8
98	205.1	2.051	22.1	19.8	2.3	92.8	0.928	20.1	20.1	0.0	19.5	0.195	19.8	19.5	0.2	136.7	1.367	21.2	19.8	1.4	**1.1**	0.8
99	200.2	2.002	21.9	19.5	2.4	92.8	0.928	20.1	20.1	0.0	19.5	0.195	19.5	19.4	0.1	136.7	1.367	19.7	19.9	-0.1	**1.1**	0.8
100	200.2	2.002	22.0	19.5	2.5	92.8	0.928	20.1	20.1	0.0	19.5	0.195	19.6	19.5	0.1	136.7	1.367	20.0	19.9	0.1	**1.1**	0.8
101	200.2	2.002	21.9	19.5	2.4	92.8	0.928	20.1	19.9	0.1	24.4	0.244	19.5	19.4	0.1	136.7	1.367	19.6	19.9	-0.2	**1.1**	0.7
102	200.2	2.002	21.7	19.3	2.4	92.8	0.928	20.1	19.9	0.1	19.5	0.195	19.4	19.5	-0.1	136.7	1.367	18.3	19.7	-1.5	**1.1**	0.8
103	200.2	2.002	21.7	19.4	2.3	92.8	0.928	20.1	20.2	-0.1	19.5	0.195	19.7	19.7	0.0	136.7	1.367	19.2	19.6	-0.4	**1.1**	0.8
104	200.2	2.002	21.9	19.4	2.5	87.9	0.879	20.1	20.1	0.0	19.5	0.195	19.5	19.4	0.1	136.7	1.367	20.2	19.6	0.6	**1.1**	0.8
105	200.2	2.002	21.9	19.5	2.4	87.9	0.879	20.1	20.1	0.0	19.5	0.195	19.5	19.4	0.1	136.7	1.367	18.3	19.6	-1.3	**1.1**	0.8
106	200.2	2.002	21.9	19.4	2.5	87.9	0.879	20.1	20.3	-0.2	19.5	0.195	19.6	19.4	0.2	136.7	1.367	20.5	19.9	0.6	**1.1**	0.8
107	195.3	1.953	21.9	19.5	2.4	87.9	0.879	20.1	20.1	0.0	19.5	0.195	19.6	19.4	0.2	136.7	1.367	21.2	19.9	1.3	**1.1**	0.7
108	195.3	1.953	21.9	19.6	2.3	87.9	0.879	19.9	19.9	0.0	19.5	0.195	19.4	19.4	0.0	131.8	1.318	18.1	19.9	-1.7	**1.1**	0.7
109	195.3	1.953	21.9	19.5	2.4	87.9	0.879	20.1	20.1	0.0	19.5	0.195	19.4	19.5	-0.1	131.8	1.318	19.9	19.7	0.1	**1.1**	0.7
110	195.3	1.953	21.7	19.4	2.3	83.0	0.830	20.1	20.1	0.0	19.5	0.195	19.6	19.4	0.2	131.8	1.318	19.7	19.6	0.1	**1.1**	0.7
111	195.3	1.953	21.7	19.2	2.5	83.0	0.830	20.1	20.2	-0.1	19.5	0.195	19.5	19.5	0.0	131.8	1.318	18.6	19.5	-0.9	**1.1**	0.7
112	195.3	1.953	21.7	19.3	2.4	83.0	0.830	19.9	19.9	0.0	19.5	0.195	19.4	19.4	0.0	131.8	1.318	18.6	19.8	-1.2	**1.1**	0.7
113	195.3	1.953	21.7	19.3	2.4	83.0	0.830	20.1	20.1	0.0	19.5	0.195	19.6	19.4	0.2	131.8	1.318	18.4	19.6	-1.2	**1.1**	0.7
114	195.3	1.953	22.0	19.4	2.7	83.0	0.830	20.1	20.1	0.0	19.5	0.195	19.6	19.4	0.2	131.8	1.318	18.8	19.7	-1.0	**1.1**	0.7
115	195.3	1.953	21.7	19.2	2.5	83.0	0.830	19.9	20.0	-0.1	19.5	0.195	19.1	19.2	-0.1	131.8	1.318	20.1	19.9	0.2	**1.1**	0.7
116	195.3	1.953	21.7	19.1	2.7	83.0	0.830	20.1	20.1	0.0	19.5	0.195	19.6	19.4	0.2	127.0	1.270	19.0	19.9	-0.9	**1.1**	0.7
117	195.3	1.953	21.7	19.1	2.7	83.0	0.830	20.1	20.1	0.0	19.5	0.195	19.1	19.0	0.1	127.0	1.270	20.7	19.7	1.0	**1.1**	0.7
118	195.3	1.953	21.7	19.2	2.5	83.0	0.830	20.1	20.2	-0.1	19.5	0.195	19.3	19.0	0.2	127.0	1.270	18.4	19.6	-1.2	**1.1**	0.7
119	195.3	1.953	21.7	19.3	2.4	78.1	0.781	19.9	20.0	-0.1	19.5	0.195	19.3	19.2	0.1	127.0	1.270	19.1	19.5	-0.4	**1.0**	0.7
120	190.4	1.904	21.7	19.2	2.5	78.1	0.781	19.9	19.9	0.0	19.5	0.195	19.5	19.5	0.0	127.0	1.270	19.0	19.6	-0.6	**1.0**	0.7
121	190.4	1.904	21.7	19.2	2.5	78.1	0.781	20.1	20.2	-0.1	19.5	0.195	19.4	19.2	0.2	127.0	1.270	19.9	19.8	0.1	**1.0**	0.7
122	190.4	1.904	21.7	19.2	2.5	78.1	0.781	19.9	20.0	-0.1	19.5	0.195	19.6	19.2	0.4	127.0	1.270	18.4	19.9	-1.5	**1.0**	0.7
123	190.4	1.904	21.7	19.3	2.4	78.1	0.781	19.9	19.9	0.0	24.4	0.244	19.5	19.4	0.1	127.0	1.270	18.8	20.0	-1.2	**1.0**	0.7
124	190.4	1.904	21.7	19.2	2.5	78.1	0.781	19.9	20.0	-0.1	24.4	0.244	19.6	19.4	0.2	127.0	1.270	19.7	19.9	-0.1	**1.0**	0.7
125	190.4	1.904	21.7	19.4	2.3	78.1	0.781	19.9	19.9	0.0	24.4	0.244	19.5	19.4	0.1	127.0	1.270	19.1	19.7	-0.6	**1.0**	0.7
126	190.4	1.904	21.7	19.1	2.7	78.1	0.781	19.9	20.0	-0.1	19.5	0.195	19.5	19.4	0.1	122.1	1.221	19.9	19.6	0.2	**1.0**	0.7
127	190.4	1.904	21.7	19.3	2.4	73.2	0.732	20.0	19.9	0.1	19.5	0.195	19.6	19.4	0.2	122.1	1.221	18.4	19.6	-1.2	**1.0**	0.7
128	190.4	1.904	21.7	19.4	2.3	73.2	0.732	19.9	19.9	0.0	19.5	0.195	19.4	19.2	0.2	122.1	1.221	20.6	19.6	1.0	**1.0**	0.7
129	185.5	1.855	21.7	19.4	2.3	73.2	0.732	19.9	19.9	0.0	19.5	0.195	19.5	19.4	0.1	122.1	1.221	20.2	19.9	0.4	**1.0**	0.7
130	185.5	1.855	21.7	19.3	2.4	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.3	19.2	0.1	122.1	1.221	18.0	19.9	-1.8	**1.0**	0.7
131	185.5	1.855	21.7	19.4	2.3	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.2	19.2	0.0	122.1	1.221	18.4	19.9	-1.5	**1.0**	0.7
132	185.5	1.855	21.7	19.6	2.2	73.2	0.732	19.9	19.9	0.0	24.4	0.244	19.4	19.2	0.2	122.1	1.221	21.2	19.8	1.4	**1.0**	0.7
133	185.5	1.855	21.7	19.6	2.2	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.5	19.4	0.1	122.1	1.221	19.9	19.6	0.2	**1.0**	0.7
134	185.5	1.855	21.7	19.3	2.4	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.4	19.3	0.1	122.1	1.221	20.7	19.5	1.2	**1.0**	0.7
135	185.5	1.855	21.9	19.4	2.4	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.6	19.4	0.2	122.1	1.221	19.4	19.5	-0.1	**1.0**	0.7
136	185.5	1.855	21.9	19.5	2.4	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.6	19.2	0.4	122.1	1.221	20.7	19.7	1.0	**1.0**	0.7

Table A.1-5 continued...

137	185.5	1.855	21.7	19.4	2.3	73.2	0.732	19.9	20.0	-0.1	24.4	0.244	19.3	19.0	0.2	117.2	1.172	19.9	20.0	-0.1	**1.0**	0.7
138	180.7	1.807	21.9	19.6	2.3	73.2	0.732	19.9	19.9	0.0						117.2	1.172	19.9	19.9	0.0	**0.9**	0.8
139	180.7	1.807	21.7	19.6	2.2	73.2	0.732	19.9	20.1	-0.2						117.2	1.172	19.9	19.9	0.0	**0.9**	0.8
140	180.7	1.807	21.9	19.6	2.3	68.4	0.684	19.9	20.1	-0.2						117.2	1.172	20.7	19.7	1.0	**0.9**	0.8
141	180.7	1.807	21.9	19.7	2.2	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	20.6	19.6	1.0	**0.9**	0.8
142	180.7	1.807	21.9	19.4	2.4	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	19.1	19.6	-0.5	**0.9**	0.8
143	180.7	1.807	21.9	19.6	2.3	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	20.8	19.6	1.2	**0.9**	0.8
144	180.7	1.807	22.0	19.6	2.4	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	19.4	19.7	-0.4	**0.9**	0.8
145	180.7	1.807	22.0	19.7	2.3	68.4	0.684	20.0	20.0	0.0						117.2	1.172	21.2	20.1	1.1	**0.9**	0.8
146	175.8	1.758	21.9	19.7	2.2	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	18.4	19.9	-1.5	**0.9**	0.7
147	175.8	1.758	21.9	19.6	2.3	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	17.9	19.7	-1.8	**0.9**	0.7
148	175.8	1.758	21.9	19.6	2.3	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	18.1	19.5	-1.3	**0.9**	0.7
149	175.8	1.758	21.9	19.7	2.2	68.4	0.684	19.9	20.0	-0.1						117.2	1.172	19.6	19.6	0.0	**0.9**	0.7
150	175.8	1.758	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						117.2	1.172	20.8	19.6	1.2	**0.9**	0.8
151	175.8	1.758	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						117.2	1.172	19.1	19.6	-0.5	**0.9**	0.8
152	175.8	1.758	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						117.2	1.172	18.3	19.7	-1.5	**0.9**	0.8
153	175.8	1.758	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						112.3	1.123	18.3	19.9	-1.6	**0.9**	0.7
154	175.8	1.758	22.2	19.8	2.4	63.5	0.635	19.9	20.0	-0.1						112.3	1.123	19.2	20.0	-0.9	**0.9**	0.7
155	170.9	1.709	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						112.3	1.123	17.9	19.6	-1.7	**0.9**	0.7
156	170.9	1.709	21.9	19.6	2.3	63.5	0.635	19.9	20.0	-0.1						112.3	1.123	19.7	19.5	0.2	**0.9**	0.7
157	170.9	1.709	21.9	19.6	2.3	63.5	0.635	19.9	19.9	0.0						112.3	1.123	18.3	19.6	-1.3	**0.9**	0.7
158	170.9	1.709	22.1	19.8	2.3	63.5	0.635	19.9	20.0	-0.1						112.3	1.123	20.6	19.6	1.0	**0.9**	0.7
159	170.9	1.709	21.9	19.6	2.3	63.5	0.635	19.9	19.9	0.0						112.3	1.123	18.4	19.6	-1.2	**0.9**	0.7
160	170.9	1.709	21.9	19.5	2.4	58.6	0.586	19.9	19.9	0.0						112.3	1.123	20.6	19.9	0.7	**0.9**	0.7
161	170.9	1.709	22.1	19.8	2.3	58.6	0.586	19.9	19.9	0.0						112.3	1.123	19.7	19.9	-0.1	**0.9**	0.7
162	166.0	1.660	21.9	19.7	2.2	58.6	0.586	19.9	19.9	0.0						112.3	1.123	19.7	19.7	0.0	**0.8**	0.7
163	166.0	1.660	22.0	19.6	2.4	58.6	0.586	19.9	20.0	-0.1						112.3	1.123	21.1	19.6	1.4	**0.8**	0.7
164	166.0	1.660	22.1	19.8	2.3	58.6	0.586	19.9	20.0	-0.1						112.3	1.123	20.7	19.6	1.1	**0.8**	0.7
165	166.0	1.660	21.9	19.6	2.3	58.6	0.586	19.9	20.0	-0.1						107.4	1.074	18.8	19.6	-0.9	**0.8**	0.7
166	166.0	1.660	22.2	19.8	2.4	58.6	0.586	19.9	20.0	-0.1						107.4	1.074	20.0	19.6	0.4	**0.8**	0.7
167	166.0	1.660	21.9	19.7	2.2	58.6	0.586	19.9	20.0	-0.1						107.4	1.074	20.3	19.7	0.6	**0.8**	0.7
168	166.0	1.660	22.1	19.8	2.3	58.6	0.586	19.9	20.1	-0.2						107.4	1.074	19.1	19.9	-0.7	**0.8**	0.7
169	166.0	1.660	22.1	19.8	2.3	58.6	0.586	19.9	20.0	-0.1						107.4	1.074	20.8	20.0	0.8	**0.8**	0.7
170	166.0	1.660	22.2	19.7	2.5	58.6	0.586	19.9	20.1	-0.2						107.4	1.074	19.9	19.7	0.1	**0.8**	0.7
171	166.0	1.660	22.1	19.8	2.3	58.6	0.586	19.9	20.0	-0.1						107.4	1.074	18.3	19.6	-1.3	**0.8**	0.7
172	161.1	1.611	22.1	19.7	2.4	58.6	0.586	19.9	20.1	-0.2						107.4	1.074	18.4	19.8	-1.3	**0.8**	0.7
173	161.1	1.611	22.1	19.7	2.4	58.6	0.586	19.9	19.9	0.0						107.4	1.074	20.9	19.7	1.2	**0.8**	0.7
174	161.1	1.611	22.1	19.8	2.3	53.7	0.537	19.9	19.9	0.0						107.4	1.074	19.2	19.9	-0.6	**0.8**	0.7
175	161.1	1.611	21.9	19.6	2.3	53.7	0.537	19.9	20.0	-0.1						107.4	1.074	19.6	20.0	-0.4	**0.8**	0.7
176	161.1	1.611	22.1	19.7	2.4	53.7	0.537	19.9	20.0	-0.1						107.4	1.074	19.1	19.9	-0.7	**0.8**	0.7
177	161.1	1.611	22.1	19.8	2.3	53.7	0.537	19.9	20.1	-0.2						107.4	1.074	18.0	19.6	-1.6	**0.8**	0.7
178	161.1	1.611	22.2	19.8	2.4	53.7	0.537	19.9	20.0	-0.1						107.4	1.074	18.4	19.6	-1.2	**0.8**	0.7
179	156.3	1.563	22.1	19.8	2.3	53.7	0.537	19.9	19.9	0.0						102.5	1.025	18.1	19.4	-1.3	**0.8**	0.7
180	156.3	1.563	22.1	19.8	2.3	53.7	0.537	20.0	20.0	0.0						102.5	1.025	18.4	19.7	-1.3	**0.8**	0.7
181	156.3	1.563	22.1	19.8	2.3	53.7	0.537	19.9	20.0	-0.1						102.5	1.025	20.0	20.0	0.0	**0.8**	0.7
182	156.3	1.563	22.1	19.8	2.3	53.7	0.537	20.0	20.0	0.0						102.5	1.025	18.5	20.0	-1.5	**0.8**	0.7
183	156.3	1.563	22.1	19.8	2.3	53.7	0.537	19.9	20.0	-0.1						102.5	1.025	20.9	19.7	1.2	**0.8**	0.7
184	156.3	1.563	22.1	19.8	2.3	48.8	0.488	20.0	19.9	0.1						102.5	1.025	19.0	19.6	-0.6	**0.8**	0.7

Table A.1-5 continued...

185	156.3	1.563	22.2	19.8	2.4	48.8	0.488	19.9	19.9	0.0
186	156.3	1.563	22.2	19.7	2.5	48.8	0.488	19.9	19.9	0.0
187	151.4	1.514	22.2	19.8	2.4	48.8	0.488	19.9	20.0	-0.1
188	156.3	1.563	21.9	16.5	5.4	48.8	0.488	19.9	19.9	0.0
189	161.1	1.611	21.9	16.9	5.0	48.8	0.488	19.9	19.9	0.0
190	161.1	1.611	22.0	18.1	3.9	48.8	0.488	19.9	19.9	0.0
191	161.1	1.611	21.9	18.6	3.3	48.8	0.488	19.9	19.9	0.0
192	156.3	1.563	22.0	19.2	2.8	48.8	0.488	19.9	20.0	-0.1
193	156.3	1.563	21.9	19.3	2.5	48.8	0.488	19.9	19.9	0.0
194	156.3	1.563	21.9	19.3	2.5	48.8	0.488	19.7	19.7	0.0
195	151.4	1.514	21.9	19.4	2.4	48.8	0.488	19.9	20.1	-0.2
196	151.4	1.514	21.9	19.4	2.4	43.9	0.439	19.9	20.0	-0.1
197	151.4	1.514	22.0	19.7	2.3	43.9	0.439	19.9	20.0	-0.1
198	151.4	1.514	22.0	19.7	2.3	43.9	0.439	19.9	20.0	-0.1
199	151.4	1.514	22.0	19.7	2.3	43.9	0.439	19.9	20.0	-0.1
200	151.4	1.514	22.0	19.7	2.3	43.9	0.439	19.9	20.0	-0.1
201	151.4	1.514	22.0	19.7	2.3	43.9	0.439	19.9	20.0	-0.1
202	151.4	1.514	22.2	19.8	2.4	43.9	0.439	19.9	20.0	-0.1
203	146.5	1.465	22.2	19.9	2.3	43.9	0.439	19.9	20.1	-0.2
204	146.5	1.465	22.2	19.9	2.3	39.1	0.391	19.9	20.0	-0.1
205	146.5	1.465	22.2	19.8	2.4	39.1	0.391	19.9	19.9	0.0
206	146.5	1.465	22.2	19.7	2.5	39.1	0.391	19.9	19.9	0.0
207	146.5	1.465	22.1	19.8	2.3	39.1	0.391	19.9	19.9	0.0
208	146.5	1.465	22.1	19.8	2.3	39.1	0.391	19.9	19.9	0.0
209	146.5	1.465	22.1	19.9	2.2	39.1	0.391	19.9	20.0	-0.1
210	146.5	1.465	22.1	19.8	2.3	39.1	0.391	19.9	20.1	-0.2
211	146.5	1.465	22.1	19.9	2.2	39.1	0.391	19.9	20.0	-0.1
212	146.5	1.465	22.2	19.8	2.4	39.1	0.391	19.7	19.8	-0.1
213	141.6	1.416	22.1	19.9	2.2	39.1	0.391	19.9	19.9	0.0
214	141.6	1.416	22.2	19.9	2.3	39.1	0.391	19.9	19.9	0.0
215	141.6	1.416	22.2	19.8	2.4	39.1	0.391	19.7	19.7	0.0
216	141.6	1.416	22.2	19.9	2.3	39.1	0.391	19.7	19.8	-0.1
217	141.6	1.416	22.2	19.8	2.4	39.1	0.391	19.7	19.8	-0.1
218	141.6	1.416	22.2	19.7	2.5	39.1	0.391	19.9	20.0	-0.1
219	141.6	1.416	22.2	19.9	2.3	34.2	0.342	19.9	20.0	-0.1
220	141.6	1.416	22.4	20.0	2.4	34.2	0.342	19.7	19.8	-0.1
221	136.7	1.367	22.4	20.0	2.4	34.2	0.342	19.9	20.0	-0.1
222	136.7	1.367	22.4	20.0	2.4	34.2	0.342	19.9	20.0	-0.1
223	136.7	1.367	22.4	20.0	2.4	34.2	0.342	19.7	20.0	-0.2
224	136.7	1.367	22.2	20.0	2.3	34.2	0.342	19.7	19.7	0.0
225	136.7	1.367	22.1	19.8	2.3	34.2	0.342	19.7	19.7	0.0
226	136.7	1.367	22.2	19.8	2.4	34.2	0.342	19.9	19.9	0.0
227	136.7	1.367	22.2	19.8	2.4	34.2	0.342	19.7	19.8	-0.1
228	136.7	1.367	22.2	19.8	2.4	34.2	0.342	19.9	20.0	-0.1
229	136.7	1.367	22.4	19.8	2.5	34.2	0.342	19.8	19.8	0.0
230	136.7	1.367	22.4	19.7	2.6	34.2	0.342	19.7	19.8	-0.1
231	131.8	1.318	22.4	19.8	2.5	34.2	0.342	19.7	19.7	0.0
232	131.8	1.318	22.4	20.0	2.4	34.2	0.342	19.7	19.7	0.0

102.5	1.025	19.4	19.6	-0.2	**0.8**	0.7
102.5	1.025	19.0	19.6	-0.6	**0.8**	0.7
102.5	1.025	19.3	19.9	-0.6	**0.8**	0.7
102.5	1.025	20.9	19.9	1.1	**0.8**	0.7
102.5	1.025	19.1	19.9	-0.7	**0.8**	0.7
102.5	1.025	18.5	19.7	-1.2	**0.8**	0.7
102.5	1.025	20.5	19.6	0.8	**0.8**	0.7
102.5	1.025	18.6	19.6	-1.0	**0.8**	0.7
97.7	0.977	18.1	19.9	-1.7	**0.8**	0.7
97.7	0.977	20.9	20.1	0.7	**0.8**	0.7
97.7	0.977	18.4	20.0	-1.6	**0.7**	0.6
97.7	0.977	20.5	19.7	0.7	**0.7**	0.7
97.7	0.977	18.6	19.6	-1.0	**0.7**	0.7
97.7	0.977	21.1	19.6	1.4	**0.7**	0.7
97.7	0.977	19.1	19.9	-0.7	**0.7**	0.7
97.7	0.977	18.8	20.0	-1.2	**0.7**	0.7
97.7	0.977	20.7	19.9	0.8	**0.7**	0.7
97.7	0.977	19.1	19.9	-0.7	**0.7**	0.7
97.7	0.977	20.8	19.6	1.2	**0.7**	0.6
97.7	0.977	20.8	19.6	1.2	**0.7**	0.6
97.7	0.977	20.5	19.6	0.8	**0.7**	0.6
97.7	0.977	19.2	20.0	-0.9	**0.7**	0.6
97.7	0.977	20.7	19.9	0.8	**0.7**	0.6
97.7	0.977	20.9	20.0	1.0	**0.7**	0.6
92.8	0.928	20.2	19.9	0.4	**0.7**	0.6
92.8	0.928	18.6	19.7	-1.1	**0.7**	0.6
97.7	0.977	18.3	19.6	-1.3	**0.7**	0.6
92.8	0.928	19.7	19.6	0.1	**0.7**	0.6
92.8	0.928	20.6	19.6	1.0	**0.7**	0.6
92.8	0.928	18.4	19.7	-1.3	**0.7**	0.6
92.8	0.928	20.6	20.0	0.6	**0.7**	0.6
92.8	0.928	18.4	19.9	-1.5	**0.7**	0.6
92.8	0.928	18.1	19.6	-1.5	**0.7**	0.6
92.8	0.928	20.9	19.6	1.3	**0.7**	0.6
92.8	0.928	20.8	19.6	1.2	**0.7**	0.6
92.8	0.928	21.0	19.8	1.2	**0.7**	0.6
92.8	0.928	20.7	20.0	0.7	**0.7**	0.6
92.8	0.928	18.1	20.0	-1.8	**0.7**	0.6
92.8	0.928	19.4	19.7	-0.4	**0.7**	0.6
92.8	0.928	20.9	19.6	1.3	**0.7**	0.6
92.8	0.928	20.0	19.6	0.4	**0.7**	0.6
92.8	0.928	18.5	19.7	-1.2	**0.7**	0.6
87.9	0.879	21.1	19.9	1.2	**0.6**	0.6
87.9	0.879	20.9	20.0	0.8	**0.6**	0.6
87.9	0.879	18.2	19.7	-1.5	**0.6**	0.6
87.9	0.879	21.0	19.9	1.1	**0.6**	0.6
87.9	0.879	19.9	19.6	0.2	**0.6**	0.6
87.9	0.879	18.5	19.6	-1.1	**0.6**	0.6

Table A.1-5 continued...

233	131.8	1.318	22.2	19.7	2.5	34.2	0.342	19.7	19.7	0.0
234	131.8	1.318	22.2	19.7	2.5	34.2	0.342	19.7	19.7	0.0
235	131.8	1.318	22.4	19.8	2.5	34.2	0.342	19.7	20.0	-0.2
236	131.8	1.318	22.4	19.8	2.5	34.2	0.342	19.7	19.8	-0.1
237	131.8	1.318	22.4	19.7	2.6	29.3	0.293	19.7	19.7	0.0
238	131.8	1.318	22.4	19.8	2.5	29.3	0.293	19.8	19.7	0.1
239	127.0	1.270	22.4	19.8	2.5	29.3	0.293	19.7	19.8	-0.1
240	127.0	1.270	22.4	19.8	2.5	29.3	0.293	19.8	19.8	0.0
241	127.0	1.270	22.4	19.8	2.5	29.3	0.293	19.7	19.8	-0.1
242	127.0	1.270	22.4	20.0	2.4	29.3	0.293	19.7	19.7	0.0
243	127.0	1.270	22.4	19.8	2.5	34.2	0.342	19.7	19.7	0.0
244	127.0	1.270	22.4	19.8	2.5	29.3	0.293	19.7	19.8	-0.1
245	127.0	1.270	22.4	19.8	2.5	29.3	0.293	19.7	19.7	0.0
246	127.0	1.270	22.4	19.7	2.6	29.3	0.293	19.8	19.8	0.0
247	127.0	1.270	22.4	19.7	2.6	29.3	0.293	19.7	19.8	-0.1
248	122.1	1.221	22.4	19.7	2.6	29.3	0.293	19.7	19.8	-0.1
249	122.1	1.221	22.4	19.8	2.5	29.3	0.293	19.8	19.8	0.0
250	122.1	1.221	22.4	20.0	2.4	29.3	0.293	19.7	19.8	-0.1
251	122.1	1.221	22.5	20.1	2.4	29.3	0.293	19.7	19.8	-0.1
252	122.1	1.221	22.5	19.9	2.6	29.3	0.293	19.7	19.8	-0.1
253	122.1	1.221	22.4	19.8	2.5	29.3	0.293	19.8	19.8	0.0
254	122.1	1.221	22.4	19.8	2.5	29.3	0.293	19.7	19.8	-0.1
255	122.1	1.221	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
256	122.1	1.221	22.4	20.0	2.4	29.3	0.293	19.7	20.0	-0.2
257	122.1	1.221	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
258	122.1	1.221	22.5	20.0	2.5	29.3	0.293	19.7	19.7	0.0
259	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
260	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
261	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
262	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
263	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
264	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
265	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
266	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
267	117.2	1.172	22.5	20.1	2.4	29.3	0.293	19.8	19.8	0.0
268	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
269	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
270	117.2	1.172	22.5	20.0	2.5	29.3	0.293	19.7	20.1	-0.4
271	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.7	20.0	-0.2
272	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
273	112.3	1.123	22.5	20.1	2.4	29.3	0.293	19.7	20.0	-0.2
274	112.3	1.123	22.5	20.1	2.4	29.3	0.293	19.7	20.1	-0.4
275	112.3	1.123	22.5	20.1	2.4	29.3	0.293	19.7	20.0	-0.2
276	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
277	112.3	1.123	22.5	20.1	2.4	29.3	0.293	19.7	20.0	-0.2
278	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.8	19.8	0.0
279	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.7	19.8	-0.1
280	112.3	1.123	22.5	20.0	2.5	29.3	0.293	19.7	19.7	0.0

87.9	0.879	19.9	19.7	0.1	**0.6**	0.6
87.9	0.879	20.5	19.9	0.6	**0.6**	0.6
87.9	0.879	17.9	19.9	-2.0	**0.6**	0.6
87.9	0.879	20.0	19.9	0.1	**0.6**	0.6
87.9	0.879	19.5	19.5	0.0	**0.6**	0.6
87.9	0.879	18.4	19.6	-1.2	**0.6**	0.6
87.9	0.879	20.9	19.6	1.3	**0.6**	0.6
87.9	0.879	19.2	19.7	-0.5	**0.6**	0.6
87.9	0.879	19.5	19.9	-0.4	**0.6**	0.6
87.9	0.879	19.2	19.9	-0.6	**0.6**	0.6
87.9	0.879	20.1	19.6	0.5	**0.6**	0.6
87.9	0.879	19.0	19.6	-0.6	**0.6**	0.6
83.0	0.830	18.5	19.6	-1.1	**0.6**	0.6
83.0	0.830	19.6	19.6	0.0	**0.6**	0.6
83.0	0.830	20.7	20.0	0.7	**0.6**	0.6
0.0	0.000	20.3	20.0	0.2	**0.4**	0.6
83.0	0.830	19.5	19.7	-0.2	**0.6**	0.5
83.0	0.830	20.9	19.7	1.2	**0.6**	0.5
83.0	0.830	19.9	19.8	0.1	**0.6**	0.5
83.0	0.830	18.6	19.6	-1.0	**0.6**	0.5
83.0	0.830	18.4	19.9	-1.5	**0.6**	0.5
83.0	0.830	19.2	20.0	-0.7	**0.6**	0.5
83.0	0.830	21.1	19.9	1.2	**0.6**	0.5
83.0	0.830	20.0	19.6	0.4	**0.6**	0.5
83.0	0.830	19.4	19.6	-0.2	**0.6**	0.5
83.0	0.830	20.6	19.6	1.0	**0.6**	0.5
83.0	0.830	19.9	19.6	0.2	**0.6**	0.5
83.0	0.830	20.0	19.9	0.1	**0.6**	0.5
83.0	0.830	21.2	20.1	1.1	**0.6**	0.5
83.0	0.830	18.5	19.9	-1.3	**0.6**	0.5
78.1	0.781	21.1	19.7	1.3	**0.6**	0.5
83.0	0.830	20.1	19.6	0.5	**0.6**	0.5
78.1	0.781	18.0	19.6	-1.6	**0.6**	0.5
78.1	0.781	19.2	19.9	-0.6	**0.6**	0.5
78.1	0.781	20.2	20.0	0.2	**0.6**	0.5
78.1	0.781	19.4	19.7	-0.4	**0.6**	0.5
78.1	0.781	20.0	19.7	0.2	**0.6**	0.5
78.1	0.781	19.2	19.6	-0.4	**0.6**	0.5
78.1	0.781	20.9	19.6	1.3	**0.5**	0.5
78.1	0.781	20.6	19.9	0.7	**0.5**	0.5
78.1	0.781	20.9	20.0	1.0	**0.5**	0.5
78.1	0.781	20.9	19.7	1.2	**0.5**	0.5
78.1	0.781	21.0	19.8	1.2	**0.5**	0.5
78.1	0.781	20.6	19.6	1.0	**0.5**	0.5
78.1	0.781	18.1	19.6	-1.5	**0.5**	0.5
78.1	0.781	18.4	19.9	-1.5	**0.5**	0.5
78.1	0.781	20.7	20.0	0.7	**0.5**	0.5
78.1	0.781	20.5	19.7	0.7	**0.5**	0.5

Table A.1-6 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was empty and carbon dioxide purging time was 15 min.

Sample No.	E11-15					E12-15					E13-15					E14-15						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.0	20.2	2.8	253.9	2.539	21.3	20.7	0.6	253.9	2.539	20.1	19.1	1.0	253.9	2.539	20.1	19.8	0.2	**2.5**	0.0
1	249.0	2.490	23.0	20.0	3.0	234.4	2.344	21.2	20.9	0.2	229.5	2.295	19.6	19.1	0.5	229.5	2.295	18.6	19.7	-1.1	**2.4**	0.1
2	244.1	2.441	23.2	20.2	3.0	224.6	2.246	20.9	20.8	0.1	214.8	2.148	19.4	19.0	0.4	224.6	2.246	19.5	19.8	-0.2	**2.3**	0.1
3	244.1	2.441	23.0	20.1	2.9	219.7	2.197	20.9	20.8	0.1	210.0	2.100	19.3	19.1	0.1	219.7	2.197	20.1	19.8	0.2	**2.2**	0.1
4	239.3	2.393	23.0	20.1	2.9	219.7	2.197	20.8	21.2	-0.4	205.1	2.051	19.3	19.2	0.1	219.7	2.197	20.7	19.3	1.5	**2.2**	0.1
5	239.3	2.393	23.0	20.2	2.8	214.8	2.148	20.8	21.1	-0.2	195.3	1.953	19.3	19.1	0.2	214.8	2.148	21.1	19.3	1.8	**2.2**	0.2
6	239.3	2.393	23.0	20.3	2.6	214.8	2.148	21.1	21.2	-0.1	190.4	1.904	19.3	19.1	0.2	214.8	2.148	19.1	19.9	-0.7	**2.1**	0.2
7	234.4	2.344	23.0	20.1	2.9	214.8	2.148	20.8	20.1	0.7	185.5	1.855	19.2	19.1	0.1	214.8	2.148	20.1	19.8	0.2	**2.1**	0.2
8	234.4	2.344	23.0	20.3	2.6	210.0	2.100	20.9	20.1	0.8	180.7	1.807	19.1	18.9	0.1	210.0	2.100	20.2	19.7	0.5	**2.1**	0.2
9	234.4	2.344	23.0	20.5	2.5	205.1	2.051	21.0	19.9	1.1	180.7	1.807	19.2	19.1	0.1	210.0	2.100	19.2	19.5	-0.2	**2.1**	0.2
10	234.4	2.344	22.9	20.3	2.5	205.1	2.051	21.0	19.9	1.1	170.9	1.709	19.1	19.0	0.1	210.0	2.100	19.0	19.5	-0.5	**2.1**	0.3
11	229.5	2.295	23.2	20.5	2.6	205.1	2.051	20.8	19.8	1.0	170.9	1.709	19.1	19.0	0.1	210.0	2.100	20.5	19.8	0.7	**2.0**	0.2
12	229.5	2.295	22.9	20.2	2.6	200.2	2.002	20.8	19.9	0.8	166.0	1.660	19.1	19.0	0.1	210.0	2.100	19.0	19.9	-0.9	**2.0**	0.3
13	229.5	2.295	23.0	20.3	2.6	200.2	2.002	20.8	19.9	0.8	161.1	1.611	19.1	18.9	0.2	210.0	2.100	17.9	19.6	-1.7	**2.0**	0.3
14	229.5	2.295	23.0	20.2	2.8	195.3	1.953	20.9	20.0	0.8	156.3	1.563	19.1	18.9	0.2	210.0	2.100	21.0	19.5	1.5	**2.0**	0.3
15	224.6	2.246	23.0	20.2	2.8	195.3	1.953	20.9	20.0	0.8	151.4	1.514	19.0	18.9	0.1	205.1	2.051	20.7	19.6	1.1	**1.9**	0.3
16	224.6	2.246	23.0	20.1	2.9	190.4	1.904	20.9	19.9	1.0	146.5	1.465	19.2	19.0	0.1	205.1	2.051	20.2	19.9	0.4	**1.9**	0.3
17	224.6	2.246	23.0	20.2	2.8	190.4	1.904	20.7	19.9	0.8	146.5	1.465	19.0	18.9	0.1	205.1	2.051	19.0	19.6	-0.6	**1.9**	0.3
18	224.6	2.246	23.0	20.3	2.6	185.5	1.855	20.8	19.9	1.0	141.6	1.416	19.0	19.0	0.0	205.1	2.051	18.2	19.5	-1.3	**1.9**	0.4
19	224.6	2.246	23.0	20.3	2.6	185.5	1.855	20.8	19.9	1.0	136.7	1.367	19.2	19.0	0.1	200.2	2.002	20.4	19.5	0.9	**1.9**	0.4
20	219.7	2.197	23.0	20.3	2.6	185.5	1.855	21.0	20.0	1.0	131.8	1.318	19.0	18.9	0.1	200.2	2.002	18.0	19.8	-1.7	**1.8**	0.4
21	219.7	2.197	23.0	20.3	2.6	180.7	1.807	21.0	20.2	0.8	131.8	1.318	19.0	18.9	0.1	200.2	2.002	20.7	19.6	1.1	**1.8**	0.4
22	219.7	2.197	23.0	20.3	2.6	180.7	1.807	20.8	19.9	1.0	127.0	1.270	19.2	18.9	0.2	200.2	2.002	17.8	19.4	-1.6	**1.8**	0.4
23	219.7	2.197	23.0	20.2	2.8	175.8	1.758	20.8	20.0	0.8	122.1	1.221	19.0	18.9	0.1	200.2	2.002	18.9	19.4	-0.5	**1.8**	0.4
24	214.8	2.148	23.0	20.2	2.8	175.8	1.758	21.0	20.0	1.0	122.1	1.221	18.7	18.9	-0.2	200.2	2.002	20.1	19.6	0.5	**1.8**	0.4
25	214.8	2.148	23.0	20.3	2.6	175.8	1.758	21.0	20.0	1.0	117.2	1.172	19.1	19.0	0.1	195.3	1.953	17.9	19.8	-1.8	**1.8**	0.4
26	214.8	2.148	23.1	20.3	2.8	170.9	1.709	20.8	20.0	0.8	112.3	1.123	19.1	19.0	0.1	195.3	1.953	19.4	19.7	-0.2	**1.7**	0.4
27	214.8	2.148	23.0	20.3	2.6	170.9	1.709	20.7	19.9	0.8	112.3	1.123	19.1	19.0	0.1	195.3	1.953	17.8	19.4	-1.6	**1.7**	0.4
28	214.8	2.148	23.0	20.1	2.9	166.0	1.660	21.0	20.2	0.8	107.4	1.074	18.9	18.8	0.1	195.3	1.953	17.8	19.5	-1.7	**1.7**	0.5
29	214.8	2.148	23.0	20.1	2.9	166.0	1.660	21.0	20.2	0.8	102.5	1.025	19.1	19.0	0.1	195.3	1.953	20.9	19.8	1.1	**1.7**	0.5
30	210.0	2.100	23.0	20.5	2.5	166.0	1.660	21.0	20.2	0.8	102.5	1.025	19.1	19.0	0.1	195.3	1.953	20.8	19.7	1.1	**1.7**	0.5
31	210.0	2.100	23.0	20.3	2.6	161.1	1.611	20.8	20.0	0.8	97.7	0.977	19.1	18.9	0.2	195.3	1.953	17.9	19.4	-1.5	**1.7**	0.5
32	210.0	2.100	23.0	20.2	2.8	161.1	1.611	21.1	20.2	1.0	97.7	0.977	19.0	19.0	0.0	190.4	1.904	20.6	19.4	1.2	**1.6**	0.5
33	205.1	2.051	23.0	20.1	2.9	161.1	1.611	21.0	20.2	0.8	92.8	0.928	18.9	18.9	0.0	195.3	1.953	20.7	19.8	0.8	**1.6**	0.5
34	205.1	2.051	23.2	20.3	2.9	156.3	1.563	21.1	20.2	1.0	87.9	0.879	19.0	18.9	0.1	190.4	1.904	17.8	19.5	-1.7	**1.6**	0.5
35	205.1	2.051	23.2	20.5	2.6	156.3	1.563	21.0	20.0	1.0	87.9	0.879	19.0	18.9	0.1	190.4	1.904	17.8	19.4	-1.6	**1.6**	0.5
36	205.1	2.051	23.0	20.1	2.9	151.4	1.514	21.0	20.0	1.0	83.0	0.830	19.1	19.0	0.1	190.4	1.904	18.9	19.3	-0.4	**1.6**	0.5
37	205.1	2.051	23.2	20.4	2.8	151.4	1.514	20.9	20.0	1.0	83.0	0.830	19.1	19.0	0.1	190.4	1.904	20.8	19.7	1.1	**1.6**	0.5
38	200.2	2.002	23.0	20.3	2.6	151.4	1.514	20.9	20.0	1.0	78.1	0.781	19.1	19.0	0.1	185.5	1.855	20.9	19.8	1.1	**1.5**	0.5
39	200.2	2.002	23.0	20.3	2.6	151.4	1.514	20.9	19.9	1.1	78.1	0.781	19.1	19.0	0.1	185.5	1.855	18.0	19.4	-1.3	**1.5**	0.5
40	200.2	2.002	23.2	20.5	2.6	146.5	1.465	20.9	20.0	1.0	73.2	0.732	18.9	18.9	0.0	185.5	1.855	18.9	19.4	-0.5	**1.5**	0.6

Table A.1-6 continued...

41	200.2	2.002	23.0	20.3	2.6	146.5	1.465	20.9	20.0	1.0	73.2	0.732	18.9	18.9	0.0	185.5	1.855	18.9	19.4	-0.5	**1.5**	0.6
42	200.2	2.002	23.3	20.7	2.6	146.5	1.465	20.9	20.0	1.0	73.2	0.732	18.7	18.7	0.0	185.5	1.855	19.8	19.7	0.1	**1.5**	0.6
43	195.3	1.953	23.0	20.2	2.8	141.6	1.416	20.9	20.0	1.0	68.4	0.684	18.9	18.9	0.0	185.5	1.855	17.7	19.7	-2.0	**1.5**	0.6
44	195.3	1.953	23.2	20.3	2.9	141.6	1.416	20.9	19.8	1.1	63.5	0.635	19.0	19.0	0.0	185.5	1.855	18.0	19.4	-1.5	**1.5**	0.6
45	195.3	1.953	23.2	20.6	2.5	141.6	1.416	20.9	19.9	1.0	63.5	0.635	18.7	18.9	-0.1	180.7	1.807	20.5	19.4	1.1	**1.5**	0.6
46	195.3	1.953	23.2	20.5	2.6	136.7	1.367	21.1	20.1	1.0	58.6	0.586	19.0	18.9	0.1	180.7	1.807	18.0	19.7	-1.7	**1.4**	0.6
47	195.3	1.953	23.2	20.5	2.6	136.7	1.367	21.1	20.0	1.1	53.7	0.537	18.9	18.9	0.0	180.7	1.807	20.4	19.7	0.7	**1.4**	0.6
48	195.3	1.953	23.0	20.1	2.9	136.7	1.367	20.9	20.0	1.0	53.7	0.537	18.9	18.7	0.1	180.7	1.807	19.6	19.6	0.0	**1.4**	0.6
49	190.4	1.904	23.0	20.1	2.9	136.7	1.367	21.1	20.1	1.0	48.8	0.488	19.0	18.9	0.1	180.7	1.807	18.8	19.3	-0.5	**1.4**	0.6
50	190.4	1.904	23.3	20.4	2.9	131.8	1.318	20.9	20.0	1.0	48.8	0.488	18.6	18.7	-0.1	180.7	1.807	17.8	19.7	-2.0	**1.4**	0.6
51	190.4	1.904	23.0	20.2	2.8	131.8	1.318	21.1	20.0	1.1						175.8	1.758	19.9	19.9	0.0	**1.2**	0.9
52	190.4	1.904	23.0	20.1	2.9	127.0	1.270	21.1	20.1	1.0						170.9	1.709	19.6	19.9	-0.2	**1.2**	0.9
53	190.4	1.904	23.0	20.2	2.8	127.0	1.270	21.1	20.1	1.0						170.9	1.709	20.1	19.6	0.5	**1.2**	0.9
54	185.5	1.855	23.0	20.1	2.9	127.0	1.270	21.1	20.0	1.1						170.9	1.709	19.5	19.5	0.0	**1.2**	0.8
55	185.5	1.855	23.0	20.2	2.8	127.0	1.270	21.1	20.1	1.0						170.9	1.709	20.9	19.5	1.5	**1.2**	0.8
56	185.5	1.855	23.0	20.1	2.9	122.1	1.221	21.1	20.1	1.0						170.9	1.709	19.7	19.6	0.1	**1.2**	0.8
57	185.5	1.855	23.0	19.9	3.1	122.1	1.221	21.1	20.0	1.1						170.9	1.709	20.8	19.7	1.1	**1.2**	0.8
58	185.5	1.855	23.0	19.9	3.1	122.1	1.221	21.1	20.0	1.1						170.9	1.709	20.1	19.3	0.7	**1.2**	0.8
59	185.5	1.855	23.0	20.1	2.9	117.2	1.172	21.1	20.0	1.1						166.0	1.660	18.0	19.2	-1.2	**1.2**	0.8
60	180.7	1.807	23.0	20.0	3.0	117.2	1.172	21.1	20.0	1.1						166.0	1.660	19.5	19.5	0.0	**1.2**	0.8
61	180.7	1.807	23.0	19.9	3.1	117.2	1.172	21.1	20.0	1.1						166.0	1.660	21.1	19.7	1.3	**1.2**	0.8
62	180.7	1.807	22.9	19.8	3.1	117.2	1.172	20.9	20.0	1.0						166.0	1.660	20.9	19.7	1.2	**1.2**	0.8
63	180.7	1.807	22.8	19.9	2.9	112.3	1.123	20.9	19.8	1.1						166.0	1.660	20.8	19.5	1.3	**1.1**	0.8
64	180.7	1.807	22.9	19.9	3.0	107.4	1.074	21.1	19.7	1.3						166.0	1.660	20.9	19.4	1.6	**1.1**	0.8
65	180.7	1.807	22.8	19.8	3.0	107.4	1.074	21.2	19.9	1.3						161.1	1.611	20.0	19.5	0.5	**1.1**	0.8
66	175.8	1.758	22.6	19.8	2.9	107.4	1.074	21.2	19.7	1.4						161.1	1.611	20.7	19.7	1.0	**1.1**	0.8
67	175.8	1.758	22.8	20.1	2.8	107.4	1.074	21.2	19.6	1.6						161.1	1.611	20.9	19.7	1.2	**1.1**	0.8
68	175.8	1.758	22.8	20.1	2.8	107.4	1.074	21.2	20.0	1.2						161.1	1.611	17.8	19.6	-1.8	**1.1**	0.8
69	175.8	1.758	22.8	20.0	2.8	102.5	1.025	21.0	19.7	1.3						161.1	1.611	20.7	19.4	1.3	**1.1**	0.8
70	175.8	1.758	22.8	20.0	2.8	102.5	1.025	21.0	19.7	1.3						161.1	1.611	18.8	19.5	-0.7	**1.1**	0.8
71	175.8	1.758	22.9	20.1	2.9	102.5	1.025	20.8	19.6	1.2						161.1	1.611	19.6	19.6	0.0	**1.1**	0.8
72	170.9	1.709	22.9	19.8	3.1	102.5	1.025	21.1	19.8	1.3						161.1	1.611	17.8	19.7	-2.0	**1.1**	0.8
73	170.9	1.709	22.6	19.6	3.0	102.5	1.025	21.0	19.6	1.3						156.3	1.563	20.5	19.4	1.1	**1.1**	0.8
74	170.9	1.709	22.8	19.8	3.0	102.5	1.025	20.8	19.8	1.1						156.3	1.563	18.8	19.3	-0.5	**1.1**	0.8
75	170.9	1.709	22.9	19.9	3.0	97.7	0.977	21.0	19.8	1.2						156.3	1.563	20.9	19.4	1.6	**1.1**	0.8
76	170.9	1.709	22.8	19.6	3.1	97.7	0.977	21.0	19.6	1.3						156.3	1.563	19.4	19.6	-0.2	**1.1**	0.8
77	166.0	1.660	22.8	19.6	3.1	97.7	0.977	21.0	19.8	1.2						156.3	1.563	19.6	19.6	0.0	**1.0**	0.8
78	170.9	1.709	22.6	19.9	2.8	97.7	0.977	21.3	20.1	1.2						156.3	1.563	19.9	19.5	0.4	**1.1**	0.8
79	166.0	1.660	22.8	19.5	3.2	97.7	0.977	21.3	20.0	1.3						156.3	1.563	17.9	19.4	-1.5	**1.0**	0.8
80	166.0	1.660	22.6	19.8	2.9	97.7	0.977	21.2	20.1	1.1						156.3	1.563	20.9	19.6	1.3	**1.0**	0.8
81	161.1	1.611	22.6	19.4	3.3	92.8	0.928	21.2	20.0	1.2						156.3	1.563	18.2	19.6	-1.3	**1.0**	0.8
82	166.0	1.660	22.6	19.5	3.1	92.8	0.928	21.3	19.9	1.4						151.4	1.514	20.9	19.7	1.2	**1.0**	0.8
83	166.0	1.660	22.6	19.5	3.1	92.8	0.928	21.1	19.9	1.2						151.4	1.514	19.2	19.3	-0.1	**1.0**	0.8
84	161.1	1.611	22.5	19.5	3.0	92.8	0.928	20.8	19.5	1.3						151.4	1.514	18.2	19.2	-1.0	**1.0**	0.7
85	161.1	1.611	22.5	19.5	3.0	92.8	0.928	21.0	19.6	1.3						151.4	1.514	17.8	19.6	-1.8	**1.0**	0.7
86	161.1	1.611	22.5	19.5	3.0	87.9	0.879	21.0	19.6	1.3						151.4	1.514	21.1	19.9	1.2	**1.0**	0.7
87	161.1	1.611	22.6	19.6	3.0	87.9	0.879	21.0	19.8	1.2						151.4	1.514	20.5	19.6	1.0	**1.0**	0.7
88	161.1	1.611	22.5	19.6	2.9	87.9	0.879	21.1	19.9	1.2						151.4	1.514	18.4	19.5	-1.1	**1.0**	0.7

Table A.1-6 continued...

89	161.1	1.611	22.5	19.5	3.0	87.9	0.879	21.1	19.8	1.3
90	161.1	1.611	22.4	19.2	3.3	87.9	0.879	21.1	19.8	1.3
91	161.1	1.611	22.4	19.4	3.0	87.9	0.879	21.0	19.8	1.2
92	156.3	1.563	22.4	19.2	3.3	83.0	0.830	21.1	19.8	1.3
93	156.3	1.563	22.4	19.1	3.4	83.0	0.830	21.1	19.8	1.3
94	156.3	1.563	22.4	19.3	3.1	83.0	0.830	21.1	19.9	1.2
95	156.3	1.563	22.4	19.1	3.4	83.0	0.830	21.1	20.1	1.1
96	156.3	1.563	22.4	19.2	3.3	83.0	0.830	21.3	19.8	1.4
97	156.3	1.563	22.3	18.9	3.4	83.0	0.830	21.1	19.8	1.3
98	156.3	1.563	22.3	19.1	3.1	78.1	0.781	20.9	19.6	1.3
99	156.3	1.563	22.1	19.0	3.1	78.1	0.781	21.1	19.9	1.2
100	151.4	1.514	22.4	19.1	3.4	78.1	0.781	21.1	19.9	1.2
101	151.4	1.514	22.1	19.0	3.1	78.1	0.781	21.1	19.8	1.3
102	151.4	1.514	22.3	18.9	3.4	78.1	0.781	21.1	19.8	1.3
103	151.4	1.514	22.3	19.0	3.3	78.1	0.781	21.1	19.8	1.3
104	151.4	1.514	22.4	19.2	3.3	73.2	0.732	21.1	19.8	1.3
105	151.4	1.514	22.1	18.8	3.3	73.2	0.732	21.3	20.1	1.2
106	151.4	1.514	22.4	19.3	3.1	73.2	0.732	21.3	19.8	1.4
107	151.4	1.514	22.3	19.1	3.1	73.2	0.732	21.1	19.6	1.4
108	151.4	1.514	22.3	18.9	3.4	73.2	0.732	21.1	19.8	1.3
109	146.5	1.465	22.1	18.7	3.4	73.2	0.732	21.3	19.9	1.3
110	146.5	1.465	22.1	18.7	3.4	73.2	0.732	21.3	19.9	1.3
111	146.5	1.465	22.1	18.8	3.3	73.2	0.732	21.1	19.9	1.2
112	146.5	1.465	22.1	18.8	3.3	68.4	0.684	21.3	20.1	1.2
113	146.5	1.465	22.1	19.0	3.1	68.4	0.684	21.5	20.3	1.2
114	146.5	1.465	22.0	18.7	3.3	68.4	0.684	21.2	20.0	1.2
115	146.5	1.465	22.1	19.1	3.0	68.4	0.684	21.2	20.0	1.2
116	141.6	1.416	22.0	19.0	3.0	68.4	0.684	21.3	19.9	1.4
117	141.6	1.416	22.0	19.2	2.8	68.4	0.684	21.2	20.0	1.2
118	141.6	1.416	22.1	19.2	2.9	63.5	0.635	21.2	19.9	1.3
119	141.6	1.416	22.1	19.1	3.0	63.5	0.635	21.2	19.9	1.3
120	141.6	1.416	22.0	19.3	2.7	63.5	0.635	21.2	20.0	1.2
121	141.6	1.416	22.0	18.8	3.1	63.5	0.635	21.2	20.0	1.2
122	141.6	1.416	22.0	19.0	3.0	63.5	0.635	21.3	20.0	1.3
123	141.6	1.416	22.0	19.0	3.0	63.5	0.635	21.2	20.0	1.2
124	136.7	1.367	22.0	18.8	3.1	63.5	0.635	21.2	20.0	1.2
125	141.6	1.416	22.0	19.0	3.0	63.5	0.635	21.3	20.0	1.3
126	136.7	1.367	22.0	19.2	2.8	58.6	0.586	21.0	19.8	1.2
127	136.7	1.367	22.0	19.0	3.0	58.6	0.586	21.1	19.4	1.7
128	136.7	1.367	22.0	19.0	3.0	58.6	0.586	21.1	19.8	1.3
129	136.7	1.367	21.8	18.9	2.9	58.6	0.586	21.1	19.8	1.3
130	136.7	1.367	22.0	19.0	3.0	58.6	0.586	21.1	19.6	1.4
131	136.7	1.367	21.8	18.9	2.9	58.6	0.586	21.3	19.8	1.4
132	136.7	1.367	22.0	19.2	2.8	58.6	0.586	21.1	19.8	1.3
133	136.7	1.367	22.0	19.0	3.0	58.6	0.586	21.2	19.9	1.3
134	131.8	1.318	22.0	19.0	3.0	53.7	0.537	21.4	20.1	1.3
135	131.8	1.318	22.0	19.0	3.0	53.7	0.537	21.3	20.0	1.3
136	131.8	1.318	22.0	19.3	2.7	53.7	0.537	21.3	19.8	1.4
151.4	1.514	18.0	19.5	-1.5	**1.0**	0.7
151.4	1.514	18.2	19.6	-1.3	**1.0**	0.7
146.5	1.465	19.7	19.9	-0.1	**1.0**	0.7
146.5	1.465	19.2	19.3	-0.1	**1.0**	0.7
146.5	1.465	19.5	19.5	0.0	**1.0**	0.7
146.5	1.465	18.9	19.5	-0.6	**1.0**	0.7
146.5	1.465	19.2	19.7	-0.5	**1.0**	0.7
146.5	1.465	19.5	19.6	-0.1	**1.0**	0.7
146.5	1.465	19.3	19.3	0.0	**1.0**	0.7
146.5	1.465	19.2	19.4	-0.1	**1.0**	0.7
146.5	1.465	20.9	19.6	1.3	**1.0**	0.7
146.5	1.465	20.5	19.6	1.0	**0.9**	0.7
146.5	1.465	19.5	19.7	-0.2	**0.9**	0.7
141.6	1.416	19.2	19.5	-0.2	**0.9**	0.7
141.6	1.416	17.6	19.4	-1.7	**0.9**	0.7
141.6	1.416	20.7	19.5	1.2	**0.9**	0.7
141.6	1.416	20.0	19.7	0.2	**0.9**	0.7
141.6	1.416	19.0	19.6	-0.6	**0.9**	0.7
141.6	1.416	18.4	19.5	-1.1	**0.9**	0.7
141.6	1.416	18.5	19.4	-0.9	**0.9**	0.7
141.6	1.416	19.0	19.5	-0.5	**0.9**	0.7
136.7	1.367	17.6	19.7	-2.1	**0.9**	0.7
136.7	1.367	20.1	19.6	0.5	**0.9**	0.7
136.7	1.367	18.6	19.4	-0.7	**0.9**	0.7
136.7	1.367	18.6	19.4	-0.7	**0.9**	0.7
136.7	1.367	19.0	19.6	-0.6	**0.9**	0.7
136.7	1.367	19.6	19.7	-0.1	**0.9**	0.7
136.7	1.367	18.0	19.6	-1.6	**0.9**	0.7
136.7	1.367	20.8	19.5	1.3	**0.9**	0.7
136.7	1.367	20.5	19.5	1.0	**0.9**	0.7
136.7	1.367	20.0	19.7	0.2	**0.9**	0.7
136.7	1.367	20.6	19.6	1.0	**0.9**	0.7
131.8	1.318	18.6	19.5	-0.9	**0.8**	0.7
131.8	1.318	19.5	19.4	0.1	**0.8**	0.7
131.8	1.318	19.5	19.6	-0.1	**0.8**	0.7
131.8	1.318	18.0	19.7	-1.7	**0.8**	0.6
131.8	1.318	20.9	19.6	1.3	**0.8**	0.7
131.8	1.318	19.2	19.5	-0.2	**0.8**	0.7
131.8	1.318	20.2	19.5	0.7	**0.8**	0.7
131.8	1.318	20.7	19.6	1.1	**0.8**	0.7
127.0	1.270	18.3	19.6	-1.3	**0.8**	0.6
127.0	1.270	17.9	19.5	-1.6	**0.8**	0.6
127.0	1.270	17.8	19.4	-1.6	**0.8**	0.6
127.0	1.270	19.9	19.5	0.4	**0.8**	0.6
127.0	1.270	17.8	19.7	-1.8	**0.8**	0.6
127.0	1.270	20.1	19.7	0.5	**0.8**	0.6
127.0	1.270	20.1	19.5	0.6	**0.8**	0.6
127.0	1.270	19.2	19.5	-0.4	**0.8**	0.6

Table A.1-6 continued...

137	131.8	1.318	22.0	19.2	2.8	53.7	0.537	21.4	20.2	1.2
138	131.8	1.318	22.0	19.3	2.7	53.7	0.537	21.1	19.9	1.2
139	131.8	1.318	22.0	19.1	2.9	53.7	0.537	21.3	19.9	1.3
140	131.8	1.318	22.0	19.1	2.9	53.7	0.537	21.3	20.1	1.2
141	131.8	1.318	22.0	19.1	2.9	48.8	0.488	21.1	19.8	1.3
142	131.8	1.318	21.8	19.0	2.8	48.8	0.488	21.1	19.9	1.2
143	131.8	1.318	21.8	18.7	3.1	48.8	0.488	21.1	19.6	1.4
144	127.0	1.270	21.6	18.7	2.9	48.8	0.488	21.4	19.8	1.6
145	127.0	1.270	21.5	18.5	3.0	43.9	0.439	21.3	19.8	1.4
146	127.0	1.270	21.6	19.0	2.7	43.9	0.439	21.4	20.0	1.4
147	127.0	1.270	21.6	19.1	2.5	43.9	0.439	21.1	19.9	1.2
148	127.0	1.270	21.6	19.1	2.5	43.9	0.439	21.0	19.8	1.2
149	127.0	1.270	21.4	18.8	2.5	43.9	0.439	21.2	19.8	1.4
150	127.0	1.270	21.6	19.1	2.5	43.9	0.439	21.1	19.8	1.3
151	122.1	1.221	21.5	19.3	2.2	43.9	0.439	21.3	20.1	1.2
152	117.2	1.172	21.6	19.1	2.5	43.9	0.439	21.3	20.1	1.2
153	112.3	1.123	21.5	19.1	2.4	43.9	0.439	21.3	20.1	1.2
154	117.2	1.172	21.6	19.1	2.5	43.9	0.439	21.3	19.9	1.3
155	117.2	1.172	21.6	19.3	2.3	43.9	0.439	21.3	19.9	1.3
156	117.2	1.172	21.5	19.2	2.3	43.9	0.439	21.3	19.9	1.3
157	117.2	1.172	21.5	18.9	2.5	43.9	0.439	21.1	19.8	1.3
158	112.3	1.123	21.6	19.1	2.5	43.9	0.439	21.3	19.9	1.3
159	112.3	1.123	21.6	19.2	2.4	43.9	0.439	21.3	19.9	1.3
160	112.3	1.123	21.6	19.1	2.5	43.9	0.439	21.3	19.9	1.3
161	112.3	1.123	21.6	19.3	2.3	39.1	0.391	21.4	20.1	1.3
162	112.3	1.123	21.6	19.2	2.4	39.1	0.391	21.4	20.2	1.2
163	112.3	1.123	21.6	19.3	2.3	39.1	0.391	21.4	20.1	1.3
164	112.3	1.123	21.5	19.3	2.2	39.1	0.391	21.4	20.1	1.3
165	112.3	1.123	21.8	19.5	2.3	39.1	0.391	21.3	19.9	1.3
166	112.3	1.123	21.5	19.2	2.3	39.1	0.391	21.4	20.1	1.3
167	112.3	1.123	21.9	19.6	2.3	39.1	0.391	21.4	20.0	1.4
168	112.3	1.123	21.7	19.5	2.2	39.1	0.391	21.3	19.7	1.6
169	107.4	1.074	21.5	19.2	2.3	39.1	0.391	21.3	19.8	1.4
170	107.4	1.074	21.8	19.5	2.3	39.1	0.391	21.4	20.0	1.4
171	107.4	1.074	21.6	19.2	2.4	39.1	0.391	21.4	20.1	1.3
172	107.4	1.074	21.6	19.2	2.4	39.1	0.391	21.3	19.9	1.3
173	107.4	1.074	21.7	19.4	2.3	39.1	0.391	21.4	20.2	1.2
174	107.4	1.074	21.6	19.2	2.4	39.1	0.391	21.4	20.2	1.2
175	107.4	1.074	21.5	19.1	2.4	39.1	0.391	21.3	19.7	1.6
176	107.4	1.074	21.6	19.1	2.5	39.1	0.391	21.3	19.9	1.3
177	107.4	1.074	21.6	19.2	2.4	34.2	0.342	21.4	20.0	1.4
178	107.4	1.074	21.6	19.2	2.4	34.2	0.342	21.3	19.9	1.3
179	107.4	1.074	21.6	19.3	2.3	34.2	0.342	21.3	20.1	1.2
180	107.4	1.074	21.8	19.3	2.5	34.2	0.342	21.4	20.1	1.3
181	102.5	1.025	21.8	19.4	2.4	34.2	0.342	21.1	19.8	1.3
182	102.5	1.025	21.6	19.1	2.5	34.2	0.342	21.4	20.1	1.3
183	102.5	1.025	21.8	19.4	2.4	34.2	0.342	21.5	20.1	1.4
184	102.5	1.025	21.8	19.4	2.4	34.2	0.342	21.3	20.1	1.2

127.0	1.270	17.6	19.2	-1.6	**0.8**	0.6
127.0	1.270	17.8	19.5	-1.7	**0.8**	0.6
127.0	1.270	19.7	19.6	0.1	**0.8**	0.6
127.0	1.270	18.6	19.6	-1.0	**0.8**	0.6
127.0	1.270	19.2	19.4	-0.1	**0.8**	0.6
122.1	1.221	20.6	19.4	1.2	**0.8**	0.6
122.1	1.221	20.8	19.5	1.3	**0.8**	0.6
122.1	1.221	21.0	19.8	1.2	**0.7**	0.6
122.1	1.221	17.6	19.6	-2.0	**0.7**	0.6
122.1	1.221	20.6	19.5	1.1	**0.7**	0.6
122.1	1.221	17.8	19.5	-1.7	**0.7**	0.6
122.1	1.221	18.9	19.4	-0.5	**0.7**	0.6
122.1	1.221	17.6	19.6	-2.0	**0.7**	0.6
122.1	1.221	17.9	19.6	-1.7	**0.7**	0.6
122.1	1.221	19.6	19.5	0.1	**0.7**	0.6
117.2	1.172	19.6	19.4	0.2	**0.7**	0.6
117.2	1.172	19.4	19.5	-0.1	**0.7**	0.6
117.2	1.172	19.0	19.6	-0.6	**0.7**	0.6
117.2	1.172	20.0	19.9	0.1	**0.7**	0.6
117.2	1.172	20.7	19.6	1.1	**0.7**	0.6
117.2	1.172	17.6	19.4	-1.7	**0.7**	0.6
117.2	1.172	20.8	19.4	1.5	**0.7**	0.6
117.2	1.172	17.8	19.5	-1.7	**0.7**	0.6
117.2	1.172	19.7	19.8	-0.1	**0.7**	0.6
117.2	1.172	17.6	19.6	-2.0	**0.7**	0.6
117.2	1.172	21.0	19.7	1.3	**0.7**	0.6
117.2	1.172	19.9	19.4	0.5	**0.7**	0.6
117.2	1.172	20.0	19.5	0.5	**0.7**	0.6
112.3	1.123	18.2	19.7	-1.5	**0.7**	0.6
112.3	1.123	17.8	19.8	-2.0	**0.7**	0.6
112.3	1.123	17.8	19.8	-2.0	**0.7**	0.6
112.3	1.123	19.9	19.5	0.4	**0.7**	0.6
112.3	1.123	18.6	19.4	-0.7	**0.6**	0.5
112.3	1.123	20.2	19.7	0.5	**0.6**	0.5
112.3	1.123	20.6	19.7	1.0	**0.6**	0.5
112.3	1.123	19.2	19.8	-0.6	**0.6**	0.5
112.3	1.123	18.8	19.7	-0.9	**0.6**	0.5
112.3	1.123	17.9	19.5	-1.6	**0.6**	0.5
107.4	1.074	20.3	19.7	0.6	**0.6**	0.5
107.4	1.074	19.2	19.5	-0.4	**0.6**	0.5
107.4	1.074	20.4	19.8	0.6	**0.6**	0.5
102.5	1.025	21.2	19.7	1.4	**0.6**	0.5
102.5	1.025	19.0	19.6	-0.6	**0.6**	0.5
102.5	1.025	18.4	19.7	-1.3	**0.6**	0.5
102.5	1.025	18.4	19.7	-1.3	**0.6**	0.5
102.5	1.025	20.8	19.7	1.1	**0.6**	0.5
102.5	1.025	20.7	19.6	1.1	**0.6**	0.5
102.5	1.025	20.6	19.5	1.1	**0.6**	0.5

Table A.1-6 continued...

185	102.5	1.025	21.6	19.1	2.5	34.2	0.342	21.3	19.9	1.3	102.5	1.025	17.8	19.3	-1.5	**0.6**	0.5
186	102.5	1.025	21.6	19.0	2.7	34.2	0.342	21.3	19.9	1.3	97.7	0.977	21.0	19.7	1.3	**0.6**	0.5
187	102.5	1.025	21.6	19.1	2.5	34.2	0.342	21.3	19.9	1.3	97.7	0.977	19.4	19.5	-0.1	**0.6**	0.5
188	102.5	1.025	21.6	19.1	2.5	34.2	0.342	21.4	20.1	1.3	97.7	0.977	20.6	19.4	1.2	**0.6**	0.5
189	102.5	1.025	21.6	19.2	2.4	34.2	0.342	21.4	19.9	1.4	97.7	0.977	20.9	19.5	1.5	**0.6**	0.5
190	97.7	0.977	21.6	19.2	2.4	29.3	0.293	21.2	19.8	1.4	97.7	0.977	21.2	19.6	1.6	**0.6**	0.5
191	97.7	0.977	21.6	19.1	2.5	29.3	0.293	21.2	19.8	1.4	97.7	0.977	21.0	19.7	1.3	**0.6**	0.5
192	97.7	0.977	21.8	19.1	2.7	29.3	0.293	21.5	20.1	1.4	97.7	0.977	20.1	19.4	0.7	**0.6**	0.5
193	97.7	0.977	21.6	19.2	2.4	29.3	0.293	21.3	19.9	1.3	97.7	0.977	18.2	19.5	-1.2	**0.6**	0.5
194	97.7	0.977	21.8	19.1	2.7	29.3	0.293	21.3	19.9	1.3	97.7	0.977	20.0	19.5	0.5	**0.6**	0.5
195	97.7	0.977	21.8	19.1	2.7	29.3	0.293	21.5	20.1	1.4	97.7	0.977	18.2	19.6	-1.3	**0.6**	0.5
196	97.7	0.977	21.8	19.3	2.5	29.3	0.293	21.4	19.9	1.4	97.7	0.977	18.7	19.4	-0.7	**0.6**	0.5
197	97.7	0.977	22.0	19.4	2.5	29.3	0.293	21.3	20.1	1.2	97.7	0.977	20.6	19.3	1.3	**0.6**	0.5
198	97.7	0.977	22.0	19.6	2.4	29.3	0.293	21.3	20.1	1.2	97.7	0.977	19.3	19.5	-0.1	**0.6**	0.5
199	97.7	0.977	22.0	19.4	2.5	29.3	0.293	21.4	20.2	1.2	97.7	0.977	17.7	19.3	-1.6	**0.6**	0.5
200	97.7	0.977	21.9	19.6	2.3	29.3	0.293	21.3	20.1	1.2	97.7	0.977	20.5	19.4	1.1	**0.6**	0.5
201											92.8	0.928	18.7	19.5	-0.9	**0.2**	0.5
202											97.7	0.977	19.2	19.3	-0.1	**0.2**	0.5
203											92.8	0.928	19.9	19.3	0.6	**0.2**	0.5
204											92.8	0.928	20.6	19.4	1.2	**0.2**	0.5
205											92.8	0.928	20.9	19.5	1.3	**0.2**	0.5
206											92.8	0.928	17.7	19.4	-1.7	**0.2**	0.5
207											92.8	0.928	17.7	19.3	-1.6	**0.2**	0.5
208											92.8	0.928	18.7	19.5	-0.7	**0.2**	0.5
209											92.8	0.928	20.9	19.6	1.3	**0.2**	0.5
210											92.8	0.928	19.2	19.4	-0.2	**0.2**	0.5
211											92.8	0.928	18.4	19.3	-0.9	**0.2**	0.5
212											92.8	0.928	17.8	19.2	-1.3	**0.2**	0.5
213											92.8	0.928	18.5	19.7	-1.2	**0.2**	0.5
214											92.8	0.928	20.5	19.7	0.8	**0.2**	0.5
215											92.8	0.928	18.3	19.4	-1.1	**0.2**	0.5
216											92.8	0.928	18.8	19.3	-0.5	**0.2**	0.5
217											87.9	0.879	17.9	19.1	-1.2	**0.2**	0.4
218											87.9	0.879	17.6	19.5	-2.0	**0.2**	0.4
219											87.9	0.879	19.8	19.5	0.2	**0.2**	0.4
220											87.9	0.879	19.1	19.5	-0.4	**0.2**	0.4
221											87.9	0.879	17.8	19.3	-1.5	**0.2**	0.4
222											87.9	0.879	19.7	19.4	0.2	**0.2**	0.4
223											87.9	0.879	19.2	19.5	-0.4	**0.2**	0.4
224											87.9	0.879	18.0	19.5	-1.5	**0.2**	0.4
225											87.9	0.879	18.0	19.5	-1.5	**0.2**	0.4
226											87.9	0.879	20.6	19.4	1.2	**0.2**	0.4
227											87.9	0.879	20.9	19.7	1.2	**0.2**	0.4
228											87.9	0.879	18.1	19.3	-1.2	**0.2**	0.4
229											87.9	0.879	19.5	19.2	0.4	**0.2**	0.4
230											87.9	0.879	19.6	19.5	0.1	**0.2**	0.4
231											83.0	0.830	17.8	19.5	-1.7	**0.2**	0.4
232											83.0	0.830	19.7	19.4	0.2	**0.2**	0.4

Table A.1-7 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was empty and carbon dioxide purging time was 30 min.

Sample No.	E11-30					E12-30					E13-30					E14-30						
																					Replicate No.	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.4	21.0	2.4	253.9	2.539	19.1	17.5	1.6	253.9	2.539	19.7	18.7	1.0	253.9	2.539	19.0	19.7	-0.7	**2.5**	0.0
1	249.0	2.490	23.3	21.0	2.3	239.3	2.393	19.3	17.8	1.5	229.5	2.295	19.5	18.9	0.6	229.5	2.295	19.5	19.8	-0.2	**2.4**	0.1
2	244.1	2.441	23.4	21.1	2.3	234.4	2.344	19.0	17.7	1.3	224.6	2.246	19.3	19.0	0.2	224.6	2.246	18.1	19.6	-1.5	**2.3**	0.1
3	244.1	2.441	23.4	21.1	2.3	229.5	2.295	18.9	17.6	1.3	214.8	2.148	19.0	18.9	0.1	224.6	2.246	21.0	19.8	1.2	**2.3**	0.1
4	239.3	2.393	23.4	21.1	2.3	229.5	2.295	18.9	17.6	1.3	210.0	2.100	19.0	18.9	0.1	219.7	2.197	19.7	19.7	0.0	**2.2**	0.1
5	239.3	2.393	23.4	21.1	2.3	229.5	2.295	18.8	17.4	1.3	205.1	2.051	19.0	18.8	0.2	219.7	2.197	18.2	19.8	-1.6	**2.2**	0.1
6	239.3	2.393	23.3	21.0	2.3	224.6	2.246	18.9	17.4	1.5	205.1	2.051	19.0	18.9	0.1	214.8	2.148	20.4	19.8	0.6	**2.2**	0.1
7	239.3	2.393	23.3	21.0	2.3	224.6	2.246	18.8	17.4	1.3	200.2	2.002	19.0	18.9	0.1	214.8	2.148	20.3	19.6	0.7	**2.2**	0.2
8	239.3	2.393	23.4	21.0	2.4	219.7	2.197	19.0	17.6	1.3	195.3	1.953	18.8	18.9	-0.1	214.8	2.148	18.1	19.7	-1.6	**2.2**	0.2
9	234.4	2.344	23.4	21.1	2.3	219.7	2.197	19.0	17.5	1.5	195.3	1.953	18.9	18.9	0.0	214.8	2.148	17.8	19.7	-1.8	**2.2**	0.2
10	234.4	2.344	23.4	21.1	2.3	219.7	2.197	18.8	17.5	1.3	190.4	1.904	19.0	18.8	0.2	210.0	2.100	18.1	19.7	-1.6	**2.1**	0.2
11	234.4	2.344	23.4	21.3	2.2	219.7	2.197	18.8	17.5	1.3	185.5	1.855	19.0	18.9	0.1	210.0	2.100	19.4	19.7	-0.2	**2.1**	0.2
12	229.5	2.295	23.1	20.9	2.2	214.8	2.148	18.8	17.5	1.3	180.7	1.807	19.0	18.8	0.2	210.0	2.100	17.9	19.7	-1.8	**2.1**	0.2
13	229.5	2.295	23.3	21.1	2.2	214.8	2.148	18.8	17.5	1.3	175.8	1.758	19.0	18.8	0.2	210.0	2.100	17.6	19.5	-2.0	**2.1**	0.2
14	229.5	2.295	23.3	21.0	2.3	214.8	2.148	18.8	17.5	1.3	175.8	1.758	19.0	18.9	0.1	210.0	2.100	19.0	19.7	-0.6	**2.1**	0.2
15	229.5	2.295	23.4	21.1	2.3	214.8	2.148	18.7	17.5	1.2	170.9	1.709	19.1	19.1	0.0	205.1	2.051	19.2	19.8	-0.6	**2.1**	0.2
16	229.5	2.295	23.4	21.3	2.2	210.0	2.100	18.7	17.5	1.2	166.0	1.660	18.8	18.8	0.0	205.1	2.051	19.0	19.7	-0.7	**2.0**	0.3
17	229.5	2.295	23.4	21.3	2.2	210.0	2.100	18.7	17.4	1.3	166.0	1.660	19.2	18.9	0.2	205.1	2.051	19.6	19.6	0.0	**2.0**	0.3
18	224.6	2.246	23.4	21.3	2.2	210.0	2.100	18.7	17.3	1.5	161.1	1.611	19.1	18.9	0.1	205.1	2.051	20.8	19.6	1.2	**2.0**	0.3
19	224.6	2.246	23.1	21.1	2.0	210.0	2.100	18.7	17.4	1.3	161.1	1.611	19.0	18.8	0.2	205.1	2.051	20.5	19.8	0.7	**2.0**	0.3
20	234.4	2.344	22.6	13.2	9.4	210.0	2.100	18.7	17.3	1.5	156.3	1.563	19.2	18.9	0.2	205.1	2.051	19.6	19.6	0.0	**2.0**	0.3
21	239.3	2.393	22.7	15.4	7.3	210.0	2.100	18.7	17.4	1.3	151.4	1.514	19.1	18.9	0.1	200.2	2.002	19.0	19.6	-0.6	**2.0**	0.4
22	239.3	2.393	22.9	17.2	5.7	205.1	2.051	18.6	17.1	1.5	151.4	1.514	19.1	18.9	0.1	200.2	2.002	19.0	19.8	-0.7	**2.0**	0.4
23	234.4	2.344	22.6	18.0	4.6	205.1	2.051	18.6	17.2	1.3	146.5	1.465	19.2	18.9	0.2	200.2	2.002	20.5	19.6	0.8	**2.0**	0.4
24	234.4	2.344	22.6	13.5	9.1	205.1	2.051	18.6	17.2	1.3	146.5	1.465	19.1	18.9	0.1	200.2	2.002	20.7	19.5	1.2	**2.0**	0.4
25	244.1	2.441	21.4	11.0	10.4	205.1	2.051	18.7	17.4	1.3	141.6	1.416	19.1	19.1	0.0	200.2	2.002	19.1	19.5	-0.4	**2.0**	0.4
26	253.9	2.539	20.9	8.5	12.4	205.1	2.051	18.7	17.3	1.5	136.7	1.367	19.1	18.9	0.1	200.2	2.002	19.5	19.4	0.1	**2.0**	0.5
27	258.8	2.588	20.8	6.3	14.5	205.1	2.051	18.7	17.3	1.5	136.7	1.367	18.9	18.8	0.1	195.3	1.953	18.2	19.5	-1.3	**2.0**	0.5
28	263.7	2.637	19.7	6.5	13.2	205.1	2.051	18.7	17.4	1.3	131.8	1.318	19.1	18.8	0.2	195.3	1.953	19.4	19.3	0.1	**2.0**	0.5
29	258.8	2.588	19.1	6.8	12.3	200.2	2.002	18.6	17.4	1.2	131.8	1.318	18.9	18.9	0.0	195.3	1.953	17.9	19.4	-1.5	**2.0**	0.5
30	258.8	2.588	19.0	7.2	11.8	200.2	2.002	18.6	17.4	1.2	127.0	1.270	18.8	18.9	-0.1	195.3	1.953	19.4	19.3	0.1	**2.0**	0.5
31	258.8	2.588	18.6	6.4	12.2	200.2	2.002	18.6	17.3	1.3	122.1	1.221	18.9	18.9	0.0	195.3	1.953	21.0	19.6	1.4	**1.9**	0.6
32	258.8	2.588	18.7	5.2	13.5	200.2	2.002	18.6	17.2	1.3	122.1	1.221	19.1	18.9	0.1	195.3	1.953	19.4	19.3	0.1	**1.9**	0.6
33	258.8	2.588	18.6	6.7	12.0	200.2	2.002	18.4	17.1	1.3	117.2	1.172	19.1	18.9	0.1	195.3	1.953	19.4	19.1	0.2	**1.9**	0.6
34	253.9	2.539	18.3	5.7	12.6	200.2	2.002	18.6	17.3	1.3	117.2	1.172	18.9	18.9	0.0	195.3	1.953	18.0	19.3	-1.2	**1.9**	0.6
35	253.9	2.539	18.1	6.1	12.0	195.3	1.953	18.4	17.1	1.3	117.2	1.172	19.2	18.9	0.2	190.4	1.904	19.6	19.3	0.2	**1.9**	0.6
36	249.0	2.490	17.6	7.2	10.4	195.3	1.953	18.6	17.2	1.3	112.3	1.123	19.1	18.8	0.2	190.4	1.904	18.0	19.3	-1.2	**1.9**	0.6
37	249.0	2.490	17.3	6.6	10.7	195.3	1.953	18.6	17.4	1.1	112.3	1.123	19.1	18.9	0.1	190.4	1.904	20.4	19.4	1.0	**1.9**	0.6
38	249.0	2.490	17.0	5.8	11.2	195.3	1.953	18.6	17.4	1.1	107.4	1.074	18.8	18.8	0.0	190.4	1.904	19.5	19.3	0.2	**1.9**	0.6
39	249.0	2.490	17.5	8.3	9.2	195.3	1.953	18.7	17.6	1.1	107.4	1.074	19.1	18.9	0.1	185.5	1.855	20.8	19.3	1.5	**1.8**	0.6
40	244.1	2.441	18.0	11.1	6.9	190.4	1.904	18.6	17.7	0.9	102.5	1.025	19.2	18.9	0.2	185.5	1.855	18.0	19.3	-1.2	**1.8**	0.6

Table A.1-7 continued...

41	239.3	2.393	18.3	12.6	5.8	190.4	1.904	18.5	17.5	1.0	102.5	1.025	19.1	18.9	0.1	185.5	1.855	20.1	19.3	0.9	**1.8**	0.6
42	234.4	2.344	18.5	13.9	4.7	190.4	1.904	18.7	17.7	1.0	102.5	1.025	19.1	18.9	0.1	185.5	1.855	20.7	19.4	1.2	**1.8**	0.6
43	234.4	2.344	18.6	14.5	4.2	190.4	1.904	18.6	17.7	0.9	97.7	0.977	19.1	18.9	0.1	185.5	1.855	19.4	19.4	0.0	**1.8**	0.6
44	234.4	2.344	18.9	15.3	3.6	190.4	1.904	18.6	17.9	0.6	97.7	0.977	19.1	18.9	0.1	185.5	1.855	19.4	19.4	0.0	**1.8**	0.6
45	229.5	2.295	19.1	15.8	3.3	185.5	1.855	18.7	18.1	0.6	92.8	0.928	18.8	18.8	0.0	185.5	1.855	17.9	19.5	-1.6	**1.7**	0.6
46	229.5	2.295	19.3	16.4	2.8	185.5	1.855	18.4	17.8	0.6	92.8	0.928	18.9	18.9	0.0	180.7	1.807	17.7	19.6	-1.8	**1.7**	0.6
47	229.5	2.295	19.3	16.6	2.7	185.5	1.855	18.7	18.0	0.7	92.8	0.928	19.1	18.8	0.2	180.7	1.807	20.5	19.7	0.8	**1.7**	0.6
48	229.5	2.295	19.7	17.0	2.7	180.7	1.807	18.7	18.0	0.7	87.9	0.879	19.1	18.9	0.1	180.7	1.807	19.4	19.7	-0.2	**1.7**	0.6
49	229.5	2.295	19.9	17.3	2.6	180.7	1.807	18.7	18.0	0.7	87.9	0.879	19.1	18.9	0.1	180.7	1.807	18.7	19.5	-0.9	**1.7**	0.6
50	229.5	2.295	19.9	17.4	2.5	180.7	1.807	18.7	18.0	0.7	87.9	0.879	18.9	18.8	0.1	180.7	1.807	17.8	19.7	-1.8	**1.7**	0.6
51	229.5	2.295	20.1	17.6	2.5	180.7	1.807	18.7	18.0	0.7	83.0	0.830	19.1	18.8	0.2	180.7	1.807	18.7	19.5	-0.9	**1.7**	0.6
52	234.4	2.344	20.1	17.2	2.9	180.7	1.807	18.6	17.9	0.7	83.0	0.830	19.2	18.9	0.2	180.7	1.807	19.7	19.7	0.0	**1.7**	0.6
53	234.4	2.344	20.4	18.0	2.4	180.7	1.807	18.8	18.0	0.7	78.1	0.781	19.1	18.9	0.1	175.8	1.758	17.7	19.7	-2.0	**1.7**	0.7
54	234.4	2.344	20.8	18.7	2.1	180.7	1.807	18.9	18.2	0.7	78.1	0.781	19.1	18.9	0.1	175.8	1.758	18.8	19.6	-0.7	**1.7**	0.7
55	234.4	2.344	21.1	19.3	1.8	180.7	1.807	18.8	18.2	0.6	78.1	0.781	19.2	18.8	0.4	175.8	1.758	19.7	19.6	0.1	**1.7**	0.7
56	234.4	2.344	21.2	19.3	1.8	180.7	1.807	18.9	18.2	0.7	73.2	0.732	19.1	18.9	0.1	175.8	1.758	19.2	19.4	-0.2	**1.7**	0.7
57	234.4	2.344	21.3	19.3	2.1	175.8	1.758	18.8	18.1	0.7	73.2	0.732	18.9	18.9	0.0	175.8	1.758	19.4	19.3	0.1	**1.6**	0.7
58	234.4	2.344	21.4	19.6	1.8	180.7	1.807	18.8	18.1	0.7	73.2	0.732	18.9	18.9	0.0	175.8	1.758	17.8	19.1	-1.3	**1.7**	0.7
59	234.4	2.344	21.5	19.5	2.1	180.7	1.807	18.8	18.1	0.7	73.2	0.732	19.1	18.9	0.1	175.8	1.758	19.3	19.2	0.1	**1.7**	0.7
60	234.4	2.344	21.6	19.7	1.9	175.8	1.758	18.8	18.1	0.7	68.4	0.684	19.1	18.9	0.1	175.8	1.758	18.0	19.3	-1.3	**1.6**	0.7
61	229.5	2.295	21.8	19.6	2.2	175.8	1.758	18.7	17.9	0.7	68.4	0.684	18.9	18.9	0.0	170.9	1.709	19.6	19.2	0.4	**1.6**	0.7
62	229.5	2.295	21.6	19.7	1.9	175.8	1.758	18.9	18.1	0.9	68.4	0.684	19.2	18.9	0.2	170.9	1.709	17.8	19.3	-1.5	**1.6**	0.7
63	229.5	2.295	21.8	19.8	2.0	175.8	1.758	18.8	18.1	0.7	68.4	0.684	19.0	18.8	0.2	170.9	1.709	18.2	19.3	-1.1	**1.6**	0.7
64	229.5	2.295	22.0	19.8	2.2	175.8	1.758	18.8	18.1	0.7	63.5	0.635	19.1	18.9	0.1	170.9	1.709	20.7	19.5	1.2	**1.6**	0.7
65	229.5	2.295	21.9	19.9	1.9	175.8	1.758	18.8	18.0	0.9	63.5	0.635	19.2	18.8	0.4	170.9	1.709	20.5	19.1	1.3	**1.6**	0.7
66	224.6	2.246	22.0	20.0	2.0	175.8	1.758	18.9	18.1	0.9	63.5	0.635	19.2	18.9	0.2	166.0	1.660	19.5	19.5	0.0	**1.6**	0.7
67	224.6	2.246	22.0	19.9	2.2	175.8	1.758	18.9	18.1	0.9	63.5	0.635	19.2	18.9	0.2	166.0	1.660	20.2	19.6	0.6	**1.6**	0.7
68	224.6	2.246	22.0	19.9	2.2	175.8	1.758	19.0	18.3	0.7	58.6	0.586	18.9	18.9	0.0	166.0	1.660	17.8	19.6	-1.7	**1.6**	0.7
69	219.7	2.197	22.2	20.3	1.9	170.9	1.709	19.0	18.3	0.7	58.6	0.586	19.1	18.9	0.1	166.0	1.660	18.3	19.4	-1.1	**1.5**	0.7
70	219.7	2.197	22.2	20.2	2.0	170.9	1.709	19.0	18.3	0.7	53.7	0.537	19.1	18.8	0.2	166.0	1.660	20.8	19.5	1.3	**1.5**	0.7
71	219.7	2.197	22.4	20.3	2.0	170.9	1.709	19.2	18.4	0.7	53.7	0.537	19.1	18.8	0.2	161.1	1.611	18.9	19.7	-0.9	**1.5**	0.7
72	214.8	2.148	22.4	20.2	2.2	170.9	1.709	19.0	18.3	0.7	53.7	0.537	18.9	18.8	0.1	161.1	1.611	18.5	19.9	-1.3	**1.5**	0.7
73	214.8	2.148	22.2	20.3	1.9	170.9	1.709	19.0	18.3	0.7	53.7	0.537	18.9	18.9	0.0	161.1	1.611	18.3	19.5	-1.2	**1.5**	0.7
74	214.8	2.148	22.4	20.4	2.0	170.9	1.709	19.0	18.2	0.9	53.7	0.537	18.9	18.9	0.0	156.3	1.563	20.6	19.7	0.8	**1.5**	0.7
75	214.8	2.148	22.4	20.1	2.3	170.9	1.709	19.0	18.3	0.7	48.8	0.488	19.1	18.9	0.1	156.3	1.563	19.9	19.7	0.1	**1.5**	0.7
76	210.0	2.100	22.6	20.3	2.3	170.9	1.709	19.0	18.3	0.7	48.8	0.488	19.2	18.9	0.2	156.3	1.563	18.0	19.7	-1.7	**1.5**	0.7
77	210.0	2.100	22.6	20.3	2.3	170.9	1.709	19.2	18.5	0.7	48.8	0.488	19.2	18.9	0.2	156.3	1.563	18.0	19.4	-1.3	**1.5**	0.7
78	205.1	2.051	22.6	20.5	2.2	170.9	1.709	19.2	18.5	0.7	48.8	0.488	19.0	18.8	0.2	156.3	1.563	18.2	19.3	-1.1	**1.5**	0.7
79	205.1	2.051	22.6	20.5	2.2	170.9	1.709	19.0	18.2	0.9	43.9	0.439	19.2	18.8	0.4	156.3	1.563	19.9	19.4	0.5	**1.4**	0.7
80	205.1	2.051	22.6	20.6	2.0	170.9	1.709	19.2	18.4	0.9	43.9	0.439	19.1	18.9	0.1	156.3	1.563	17.5	19.2	-1.7	**1.4**	0.7
81	200.2	2.002	22.6	20.5	2.2	170.9	1.709	19.2	18.4	0.9	43.9	0.439	19.2	18.9	0.2	151.4	1.514	18.8	19.2	-0.5	**1.4**	0.7
82	200.2	2.002	22.6	20.5	2.2	166.0	1.660	19.2	18.4	0.9	43.9	0.439	19.1	18.9	0.1	151.4	1.514	20.7	19.2	1.5	**1.4**	0.7
83	200.2	2.002	22.6	20.1	2.5	166.0	1.660	19.0	18.2	0.9	43.9	0.439	18.9	18.9	0.0	151.4	1.514	19.5	19.2	0.2	**1.4**	0.7
84	195.3	1.953	22.8	20.6	2.2	166.0	1.660	19.0	18.2	0.9	39.1	0.391	18.8	18.9	-0.1	151.4	1.514	19.4	19.4	0.0	**1.4**	0.7
85	195.3	1.953	22.8	20.5	2.3	166.0	1.660	19.2	18.2	1.0	39.1	0.391	19.1	18.9	0.1	151.4	1.514	19.0	19.4	-0.4	**1.4**	0.7
86	195.3	1.953	23.1	20.7	2.4	166.0	1.660	18.9	18.0	1.0	39.1	0.391	19.1	18.8	0.2	151.4	1.514	19.5	19.4	0.1	**1.4**	0.7
87	190.4	1.904	23.0	20.7	2.3	166.0	1.660	18.9	17.8	1.1	39.1	0.391	19.1	18.9	0.1	151.4	1.514	18.3	19.4	-1.1	**1.4**	0.7
88	190.4	1.904	23.0	20.7	2.3	166.0	1.660	19.1	17.8	1.2	39.1	0.391	18.9	18.9	0.0	151.4	1.514	20.6	19.4	1.2	**1.4**	0.7

Table A.1-7 continued...

89	190.4	1.904	23.0	20.8	2.2	166.0	1.660	19.2	18.1	1.1	39.1	0.391	18.9	18.9	0.0	151.4	1.514	19.7	19.4	0.4	**1.4**	0.7
90	185.5	1.855	23.0	20.7	2.3	161.1	1.611	19.1	18.0	1.1	39.1	0.391	19.1	18.8	0.2	146.5	1.465	19.5	19.4	0.1	**1.3**	0.6
91	185.5	1.855	23.1	21.0	2.2	161.1	1.611	19.1	17.7	1.3	34.2	0.342	18.8	18.9	-0.1	146.5	1.465	18.3	19.4	-1.1	**1.3**	0.7
92	185.5	1.855	23.0	20.8	2.2	161.1	1.611	18.9	17.8	1.1	34.2	0.342	18.9	18.9	0.0	146.5	1.465	20.2	19.4	0.9	**1.3**	0.7
93	180.7	1.807	23.1	21.0	2.2	161.1	1.611	19.1	18.0	1.1	34.2	0.342	19.1	18.9	0.1	146.5	1.465	21.1	19.4	1.7	**1.3**	0.7
94	180.7	1.807	23.1	21.0	2.2	161.1	1.611	19.1	17.8	1.2	34.2	0.342	18.9	18.8	0.1	146.5	1.465	19.0	19.2	-0.2	**1.3**	0.7
95	180.7	1.807	23.3	21.3	2.0	156.3	1.563	19.2	17.8	1.3	34.2	0.342	19.1	18.9	0.1	146.5	1.465	21.2	19.4	1.8	**1.3**	0.7
96	175.8	1.758	23.3	21.0	2.3	156.3	1.563	19.1	17.8	1.2	34.2	0.342	19.1	18.9	0.1	141.6	1.416	17.8	19.2	-1.5	**1.3**	0.6
97	175.8	1.758	23.3	21.1	2.2	156.3	1.563	19.1	17.7	1.3	29.3	0.293	18.9	18.9	0.0	141.6	1.416	20.6	19.4	1.2	**1.3**	0.7
98	175.8	1.758	23.4	21.1	2.3	156.3	1.563	19.1	17.7	1.3	29.3	0.293	19.1	18.8	0.2	141.6	1.416	18.9	19.2	-0.4	**1.3**	0.7
99	175.8	1.758	23.3	21.0	2.3	156.3	1.563	19.1	17.6	1.5	29.3	0.293	19.2	18.8	0.4	141.6	1.416	18.8	19.4	-0.6	**1.3**	0.7
100	175.8	1.758	23.5	21.2	2.3	151.4	1.514	19.1	17.7	1.3	29.3	0.293	19.1	18.9	0.1	141.6	1.416	17.5	19.2	-1.7	**1.2**	0.7
101	170.9	1.709	23.5	21.1	2.4	151.4	1.514	18.9	17.5	1.3	29.3	0.293	18.9	18.8	0.1	141.6	1.416	19.4	19.4	0.0	**1.2**	0.6
102	170.9	1.709	23.5	21.2	2.3	151.4	1.514	18.9	17.4	1.5	29.3	0.293	19.1	18.8	0.2	141.6	1.416	17.5	19.2	-1.7	**1.2**	0.6
103	170.9	1.709	23.6	21.2	2.4	151.4	1.514	18.9	17.4	1.5	29.3	0.293	19.2	18.9	0.2	141.6	1.416	19.7	19.5	0.2	**1.2**	0.6
104	166.0	1.660	23.6	21.2	2.4	151.4	1.514	19.1	17.7	1.3	29.3	0.293	18.9	18.9	0.0	136.7	1.367	19.1	19.4	-0.2	**1.2**	0.6
105	170.9	1.709	23.6	21.2	2.4	151.4	1.514	19.1	17.6	1.5	29.3	0.293	18.9	18.8	0.1	136.7	1.367	20.5	19.4	1.1	**1.2**	0.6
106	166.0	1.660	23.8	21.4	2.4	151.4	1.514	18.9	17.5	1.5	29.3	0.293	19.1	18.9	0.1	136.7	1.367	17.5	19.3	-1.8	**1.2**	0.6
107	166.0	1.660	23.8	21.5	2.3	146.5	1.465	18.9	17.5	1.5	24.4	0.244	19.1	18.9	0.1	136.7	1.367	19.7	19.5	0.2	**1.2**	0.6
108	161.1	1.611	23.8	21.4	2.4	146.5	1.465	19.1	17.6	1.5	24.4	0.244	18.9	18.8	0.1	136.7	1.367	21.1	19.6	1.4	**1.2**	0.6
109	161.1	1.611	23.8	21.4	2.4	146.5	1.465	18.9	17.6	1.3	24.4	0.244	18.7	18.8	-0.1	136.7	1.367	18.6	19.6	-1.0	**1.2**	0.6
110	161.1	1.611	23.8	21.2	2.5	146.5	1.465	18.9	17.5	1.5	24.4	0.244	19.1	18.8	0.2	136.7	1.367	19.2	19.5	-0.2	**1.2**	0.6
111	161.1	1.611	23.8	21.4	2.4	146.5	1.465	19.0	17.5	1.5	24.4	0.244	18.9	18.8	0.1	136.7	1.367	20.1	19.6	0.5	**1.2**	0.6
112	161.1	1.611	23.8	21.2	2.5	146.5	1.465	19.0	17.4	1.6	24.4	0.244	19.1	18.8	0.2	131.8	1.318	18.0	19.7	-1.7	**1.2**	0.6
113	156.3	1.563	23.8	21.2	2.5	146.5	1.465	18.9	17.5	1.3	24.4	0.244	18.9	18.8	0.1	131.8	1.318	21.1	19.6	1.4	**1.1**	0.6
114	156.3	1.563	23.9	21.4	2.5	146.5	1.465	18.8	17.4	1.5	19.5	0.195	18.9	18.9	0.0	131.8	1.318	17.6	19.6	-2.0	**1.1**	0.6
115	156.3	1.563	23.9	21.4	2.5	141.6	1.416	18.8	17.5	1.3	19.5	0.195	18.9	18.8	0.1	131.8	1.318	19.6	19.6	0.0	**1.1**	0.6
116	156.3	1.563	23.9	21.4	2.5	141.6	1.416	18.8	17.5	1.3	19.5	0.195	18.9	18.8	0.1	131.8	1.318	19.5	19.6	-0.1	**1.1**	0.6
117	156.3	1.563	23.9	21.5	2.4	141.6	1.416	19.0	17.6	1.3	19.5	0.195	18.8	18.8	0.0	131.8	1.318	21.1	19.6	1.4	**1.1**	0.6
118	151.4	1.514	23.9	21.4	2.5	141.6	1.416	19.0	17.6	1.3	19.5	0.195	18.8	18.8	0.0	131.8	1.318	17.8	19.6	-1.8	**1.1**	0.6
119	151.4	1.514	23.9	21.4	2.5	141.6	1.416	18.9	17.6	1.2	19.5	0.195	18.7	18.8	-0.1	127.0	1.270	21.2	19.6	1.6	**1.1**	0.6
120	151.4	1.514	23.9	21.5	2.4	141.6	1.416	19.2	17.6	1.6	19.5	0.195	18.8	18.8	0.0	127.0	1.270	17.4	19.5	-2.1	**1.1**	0.6
121	151.4	1.514	23.9	21.4	2.5	136.7	1.367	18.9	17.5	1.3	19.5	0.195	18.9	18.8	0.1	127.0	1.270	20.8	19.6	1.2	**1.1**	0.6
122	151.4	1.514	23.9	21.4	2.5	136.7	1.367	19.0	17.7	1.3	19.5	0.195	19.1	18.8	0.2	127.0	1.270	18.8	19.5	-0.7	**1.1**	0.6
123	146.5	1.465	24.1	21.6	2.5	136.7	1.367	18.7	17.3	1.5	19.5	0.195	19.1	18.9	0.1	127.0	1.270	17.6	19.6	-2.0	**1.1**	0.6
124	146.5	1.465	24.1	21.6	2.5	136.7	1.367	19.0	17.4	1.6	19.5	0.195	19.1	18.9	0.1	127.0	1.270	18.9	19.6	-0.7	**1.1**	0.6
125	146.5	1.465	24.1	21.6	2.5	136.7	1.367	18.9	17.6	1.3	19.5	0.195	19.1	18.9	0.1	127.0	1.270	20.8	19.6	1.2	**1.1**	0.6
126	146.5	1.465	24.1	21.6	2.5	136.7	1.367	18.7	17.4	1.3	14.6	0.146	18.9	18.9	0.0	127.0	1.270	18.9	19.8	-0.9	**1.1**	0.6
127	146.5	1.465	24.1	21.6	2.5	136.7	1.367	18.9	17.4	1.5	14.6	0.146	19.1	18.9	0.1	127.0	1.270	21.2	19.9	1.3	**1.1**	0.6
128	141.6	1.416	24.2	21.6	2.6	136.7	1.367	18.9	17.4	1.5	14.6	0.146	18.9	18.9	0.0	122.1	1.221	17.3	19.6	-2.3	**1.0**	0.6
129	141.6	1.416	24.1	21.6	2.5	136.7	1.367	18.9	17.6	1.3	14.6	0.146	19.1	18.8	0.2	122.1	1.221	17.9	19.5	-1.6	**1.0**	0.6
130	141.6	1.416	24.1	21.6	2.5	136.7	1.367	18.9	17.4	1.5	14.6	0.146	18.9	18.9	0.0	122.1	1.221	17.4	19.6	-2.2	**1.0**	0.6
131	136.7	1.367	24.1	21.6	2.5	131.8	1.318	18.9	17.4	1.5	14.6	0.146	19.1	18.9	0.1	122.1	1.221	17.6	19.6	-2.0	**1.0**	0.6
132	141.6	1.416	24.1	21.5	2.6	131.8	1.318	18.7	17.3	1.5	14.6	0.146	19.1	18.9	0.1	122.1	1.221	20.7	19.6	1.1	**1.0**	0.6
133	136.7	1.367	24.1	21.6	2.5	131.8	1.318	18.7	17.3	1.5	14.6	0.146	19.1	18.8	0.2	122.1	1.221	20.2	19.6	0.6	**1.0**	0.6
134	136.7	1.367	24.1	21.6	2.5	131.8	1.318	18.9	17.4	1.5	14.6	0.146	18.9	18.8	0.1	122.1	1.221	19.1	19.6	-0.5	**1.0**	0.6
135	136.7	1.367	24.1	21.7	2.4	131.8	1.318	18.7	17.3	1.5	14.6	0.146	18.9	18.8	0.1	122.1	1.221	17.5	19.6	-2.1	**1.0**	0.6
136	136.7	1.367	24.1	21.6	2.5	131.8	1.318	18.7	17.4	1.3	14.6	0.146	18.9	18.8	0.1	117.2	1.172	20.9	19.7	1.2	**1.0**	0.6

Table A.1-7 continued...

137	136.7	1.367	24.1	21.6	2.5	131.8	1.318	18.9	17.4	1.5	14.6	0.146	19.2	18.8	0.4	117.2	1.172	19.6	19.6	0.0	**1.0**	0.6
138	136.7	1.367	24.0	21.6	2.4	131.8	1.318	18.7	17.2	1.5						117.2	1.172	19.9	19.8	0.1	**1.0**	0.6
139	136.7	1.367	24.1	21.5	2.6	131.8	1.318	18.7	17.4	1.3						117.2	1.172	20.9	19.7	1.2	**1.0**	0.6
140	131.8	1.318	24.0	21.6	2.4	131.8	1.318	18.7	17.4	1.3						117.2	1.172	19.0	19.6	-0.6	**1.0**	0.6
141	131.8	1.318	24.1	21.5	2.6	131.8	1.318	18.7	17.4	1.3						117.2	1.172	19.9	19.7	0.1	**1.0**	0.6
142	131.8	1.318	24.1	21.7	2.4	127.0	1.270	18.7	17.4	1.3						117.2	1.172	21.2	19.6	1.6	**0.9**	0.6
143	131.8	1.318	24.0	21.7	2.3	127.0	1.270	18.7	17.4	1.3						117.2	1.172	20.7	19.7	1.0	**0.9**	0.6
144	127.0	1.270	24.1	22.0	2.2	127.0	1.270	18.6	17.2	1.3						117.2	1.172	20.9	19.7	1.2	**0.9**	0.6
145	127.0	1.270	24.3	22.1	2.2	127.0	1.270	18.6	17.1	1.5						117.2	1.172	17.4	19.6	-2.2	**0.9**	0.6
146	127.0	1.270	24.5	22.2	2.3	127.0	1.270	18.6	17.2	1.3						117.2	1.172	20.9	19.6	1.3	**0.9**	0.6
147	127.0	1.270	24.3	22.0	2.3	127.0	1.270	18.6	17.2	1.3						112.3	1.123	17.5	19.7	-2.2	**0.9**	0.6
148	127.0	1.270	24.3	22.0	2.3	127.0	1.270	18.6	17.2	1.3						112.3	1.123	17.9	19.6	-1.7	**0.9**	0.6
149	127.0	1.270	24.5	22.1	2.4	127.0	1.270	18.6	17.1	1.5						112.3	1.123	20.9	19.6	1.3	**0.9**	0.6
150	122.1	1.221	24.5	22.1	2.4	127.0	1.270	18.6	17.2	1.3						112.3	1.123	17.6	19.6	-2.0	**0.9**	0.6
151	122.1	1.221	24.5	21.9	2.5	127.0	1.270	18.6	17.2	1.3						112.3	1.123	20.8	19.7	1.1	**0.9**	0.6
152	122.1	1.221	24.3	22.1	2.3	127.0	1.270	18.6	17.1	1.5						112.3	1.123	19.4	19.6	-0.2	**0.9**	0.6
153	122.1	1.221	24.3	22.3	2.0	127.0	1.270	18.6	17.1	1.5						112.3	1.123	21.1	19.7	1.3	**0.9**	0.6
154	122.1	1.221	24.5	22.5	2.0	127.0	1.270	18.7	17.3	1.5						112.3	1.123	19.5	19.6	-0.1	**0.9**	0.6
155	122.1	1.221	24.6	22.6	2.0	127.0	1.270	18.5	17.1	1.3						107.4	1.074	20.5	19.7	0.7	**0.9**	0.6
156	117.2	1.172	24.3	22.1	2.3	127.0	1.270	18.7	17.3	1.5						107.4	1.074	17.8	19.9	-2.1	**0.9**	0.6
157	117.2	1.172	24.3	22.1	2.3	127.0	1.270	18.6	17.2	1.5						107.4	1.074	19.1	19.7	-0.6	**0.9**	0.6
158	117.2	1.172	24.5	22.1	2.4	127.0	1.270	18.5	17.1	1.3						107.4	1.074	19.1	19.6	-0.5	**0.9**	0.6
159	112.3	1.123	24.7	22.5	2.2	127.0	1.270	18.5	16.9	1.6						107.4	1.074	20.9	19.6	1.3	**0.9**	0.6
160	117.2	1.172	24.7	22.5	2.2	127.0	1.270	18.5	17.1	1.3						107.4	1.074	21.0	19.8	1.2	**0.9**	0.6
161	117.2	1.172	24.7	22.6	2.0	127.0	1.270	18.5	17.1	1.3						107.4	1.074	18.9	19.5	-0.6	**0.9**	0.6
162	117.2	1.172	24.7	22.4	2.3	127.0	1.270	18.5	17.2	1.2						107.4	1.074	20.9	19.6	1.3	**0.9**	0.6
163	117.2	1.172	24.7	22.3	2.4	122.1	1.221	18.5	17.1	1.3						107.4	1.074	20.6	19.8	0.8	**0.9**	0.6
164	117.2	1.172	24.9	22.3	2.5	127.0	1.270	18.6	17.3	1.3						107.4	1.074	19.4	19.5	-0.1	**0.9**	0.6
165	112.3	1.123	24.9	22.6	2.3	122.1	1.221	18.5	17.1	1.3						107.4	1.074	17.6	19.5	-1.8	**0.9**	0.6
166	112.3	1.123	25.0	22.7	2.3	122.1	1.221	18.5	17.0	1.5						107.4	1.074	18.9	19.5	-0.6	**0.9**	0.6
167	112.3	1.123	25.0	22.7	2.3	122.1	1.221	18.5	17.1	1.3						102.5	1.025	17.6	19.5	-1.8	**0.8**	0.6
168	112.3	1.123	25.0	22.6	2.4	122.1	1.221	18.5	17.1	1.3						102.5	1.025	19.4	19.4	0.0	**0.8**	0.6
169	112.3	1.123	25.0	22.5	2.5	122.1	1.221	18.6	17.2	1.3						102.5	1.025	19.6	19.5	0.1	**0.8**	0.6
170	107.4	1.074	25.0	22.5	2.5	122.1	1.221	18.6	17.2	1.3						102.5	1.025	18.4	19.5	-1.1	**0.8**	0.6
171	107.4	1.074	24.9	22.9	2.0	122.1	1.221	18.5	17.0	1.5						102.5	1.025	20.7	19.5	1.2	**0.8**	0.6
172	107.4	1.074	25.0	22.9	2.2	122.1	1.221	18.4	16.9	1.5						102.5	1.025	19.6	19.5	0.1	**0.8**	0.6
173	107.4	1.074	25.0	22.7	2.3	122.1	1.221	18.4	16.9	1.5						102.5	1.025	18.9	19.6	-0.7	**0.8**	0.6
174	107.4	1.074	24.9	22.5	2.4	122.1	1.221	18.6	17.2	1.3						102.5	1.025	20.6	19.6	1.0	**0.8**	0.6
175	107.4	1.074	25.0	22.4	2.6	122.1	1.221	18.5	17.1	1.3						102.5	1.025	18.9	19.5	-0.6	**0.8**	0.6
176	102.5	1.025	24.9	22.4	2.5	122.1	1.221	18.3	17.1	1.2						97.7	0.977	17.6	19.6	-2.0	**0.8**	0.5
177	102.5	1.025	25.0	22.4	2.6	122.1	1.221	18.4	16.9	1.5						97.7	0.977	19.1	19.6	-0.5	**0.8**	0.5
178	102.5	1.025	24.9	22.4	2.5	122.1	1.221	18.3	16.9	1.3						97.7	0.977	17.8	19.6	-1.8	**0.8**	0.5
179	102.5	1.025	25.0	22.4	2.6	117.2	1.172	18.2	17.0	1.2						97.7	0.977	18.6	19.6	-1.0	**0.8**	0.5
180	102.5	1.025	24.9	22.1	2.8	117.2	1.172	18.2	17.1	1.1						97.7	0.977	18.9	19.5	-0.6	**0.8**	0.5
181	97.7	0.977	25.0	22.3	2.8	117.2	1.172	18.2	17.3	1.0						97.7	0.977	19.8	19.7	0.1	**0.8**	0.5
182	97.7	0.977	25.0	22.1	2.9	122.1	1.221	18.4	17.4	1.0						97.7	0.977	19.8	19.5	0.2	**0.8**	0.5
183	92.8	0.928	25.0	22.1	2.9	117.2	1.172	18.4	17.5	0.9						97.7	0.977	20.9	19.4	1.6	**0.8**	0.5
184	92.8	0.928	25.0	22.3	2.8	122.1	1.221	18.2	17.4	0.7						97.7	0.977	20.2	19.4	0.9	**0.8**	0.5

Table A.1-7 continued...

185	92.8	0.928	25.0	22.3	2.8	122.1	1.221	18.4	17.6	0.7
186	92.8	0.928	25.0	22.1	2.9	122.1	1.221	18.4	17.6	0.7
187	92.8	0.928	24.7	21.9	2.8	122.1	1.221	18.4	17.6	0.7
188	92.8	0.928	24.9	22.0	2.9	122.1	1.221	18.4	17.6	0.7
189	87.9	0.879	24.9	22.1	2.8	122.1	1.221	18.5	17.7	0.7
190	87.9	0.879	24.9	22.1	2.8	122.1	1.221	18.4	17.7	0.6
191	87.9	0.879	24.9	22.2	2.6	122.1	1.221	18.5	17.8	0.7
192	87.9	0.879	24.9	22.1	2.8	122.1	1.221	18.4	17.6	0.7
193	87.9	0.879	24.7	21.9	2.8	122.1	1.221	18.5	17.8	0.7
194	87.9	0.879	24.9	22.0	2.9	122.1	1.221	18.2	17.6	0.6
195	87.9	0.879	24.7	21.9	2.8	122.1	1.221	18.4	17.6	0.7
196	87.9	0.879	24.7	21.8	2.9	122.1	1.221	18.5	17.8	0.7
197	83.0	0.830	24.7	21.8	2.9	122.1	1.221	18.5	17.9	0.6
198	83.0	0.830	24.7	21.9	2.8	122.1	1.221	18.7	18.0	0.7
199	83.0	0.830	24.7	21.9	2.8	122.1	1.221	18.6	18.1	0.5
200	83.0	0.830	24.7	21.8	2.9	122.1	1.221	18.6	18.0	0.6
201	83.0	0.830	24.7	21.9	2.8	122.1	1.221	18.7	18.1	0.6
202	83.0	0.830	24.7	21.8	2.9	122.1	1.221	18.6	17.8	0.7
203	83.0	0.830	24.7	21.9	2.8	122.1	1.221	18.7	18.1	0.6
204	83.0	0.830	24.7	21.9	2.8	122.1	1.221	18.7	18.1	0.6
205	83.0	0.830	24.7	21.9	2.8	127.0	1.270	18.7	18.0	0.7
206	78.1	0.781	24.7	21.8	2.9	127.0	1.270	18.9	18.0	0.9
207	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.7	18.0	0.7
208	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.7	18.0	0.7
209	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.7	18.0	0.7
210	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.7	17.8	0.9
211	78.1	0.781	24.7	21.9	2.8	122.1	1.221	18.7	18.0	0.7
212	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.9	18.2	0.7
213	78.1	0.781	24.7	21.9	2.8	127.0	1.270	18.8	18.3	0.5
214	73.2	0.732	24.7	21.9	2.8	127.0	1.270	18.9	18.2	0.7
215	73.2	0.732	24.7	22.0	2.6	127.0	1.270	18.7	17.9	0.9
216	73.2	0.732	24.7	21.9	2.8	127.0	1.270	18.7	18.0	0.7
217	73.2	0.732	24.7	21.9	2.8	122.1	1.221	18.9	18.2	0.7
218	73.2	0.732	24.7	22.0	2.6	122.1	1.221	18.9	18.2	0.7
219	73.2	0.732	24.7	22.0	2.6	122.1	1.221	18.9	18.2	0.7
220	73.2	0.732	24.5	21.9	2.6	127.0	1.270	18.9	18.2	0.7
221	73.2	0.732	24.4	21.7	2.6	122.1	1.221	18.9	18.2	0.7
222	73.2	0.732	24.5	21.9	2.6	122.1	1.221	18.9	18.1	0.9
223	73.2	0.732	24.5	21.7	2.8	127.0	1.270	18.9	18.1	0.9
224	73.2	0.732	24.5	21.7	2.8	122.1	1.221	18.9	18.1	0.9
225	73.2	0.732	24.5	21.9	2.6	122.1	1.221	19.1	18.2	0.9
226	68.4	0.684	24.4	22.0	2.4	122.1	1.221	19.1	18.2	0.9
227	68.4	0.684	24.5	21.9	2.6	122.1	1.221	19.1	18.2	0.9
228	68.4	0.684	24.4	21.9	2.5	127.0	1.270	19.0	18.1	1.0
229	68.4	0.684	24.4	21.9	2.5	122.1	1.221	19.0	18.1	1.0
230	68.4	0.684	24.4	21.7	2.6	122.1	1.221	19.0	17.9	1.1
231	68.4	0.684	24.5	21.9	2.6	122.1	1.221	19.0	17.9	1.1
232	68.4	0.684	24.4	21.7	2.6	122.1	1.221	19.0	17.9	1.1

97.7	0.977	18.9	19.4	-0.5	**0.8**	0.5
97.7	0.977	19.4	19.5	-0.1	**0.8**	0.5
92.8	0.928	18.6	19.4	-0.7	**0.8**	0.5
92.8	0.928	17.6	19.4	-1.7	**0.8**	0.5
92.8	0.928	19.6	19.5	0.1	**0.8**	0.5
92.8	0.928	20.8	19.5	1.3	**0.8**	0.5
92.8	0.928	17.5	19.4	-1.8	**0.8**	0.5
92.8	0.928	18.6	19.5	-0.9	**0.8**	0.5
92.8	0.928	17.6	19.5	-1.8	**0.8**	0.5
92.8	0.928	19.7	19.5	0.2	**0.8**	0.5
92.8	0.928	20.0	19.8	0.2	**0.8**	0.5
92.8	0.928	18.3	19.6	-1.3	**0.8**	0.5
92.8	0.928	17.6	19.8	-2.2	**0.7**	0.5
87.9	0.879	17.8	19.6	-1.8	**0.7**	0.5
87.9	0.879	17.6	19.8	-2.2	**0.7**	0.5
87.9	0.879	17.8	19.8	-2.0	**0.7**	0.5
87.9	0.879	21.1	19.6	1.4	**0.7**	0.5
87.9	0.879	17.4	19.6	-2.2	**0.7**	0.5
87.9	0.879	20.7	19.6	1.1	**0.7**	0.5
87.9	0.879	19.8	19.8	0.0	**0.7**	0.5
87.9	0.879	19.8	19.8	0.0	**0.7**	0.5
87.9	0.879	20.7	19.7	1.0	**0.7**	0.5
87.9	0.879	18.3	19.8	-1.5	**0.7**	0.5
87.9	0.879	19.7	19.7	0.0	**0.7**	0.5
83.0	0.830	19.9	19.6	0.2	**0.7**	0.5
83.0	0.830	19.3	19.8	-0.5	**0.7**	0.5
83.0	0.830	19.5	19.7	-0.1	**0.7**	0.5
83.0	0.830	18.8	19.7	-1.0	**0.7**	0.5
83.0	0.830	20.1	19.6	0.5	**0.7**	0.5
78.1	0.781	18.1	19.9	-1.8	**0.7**	0.5
78.1	0.781	20.6	20.0	0.6	**0.7**	0.5
78.1	0.781	21.2	20.0	1.2	**0.7**	0.5
78.1	0.781	19.9	19.7	0.1	**0.7**	0.5
78.1	0.781	20.8	19.7	1.1	**0.7**	0.5
78.1	0.781	19.1	19.9	-0.7	**0.7**	0.5
73.2	0.732	19.5	19.7	-0.2	**0.7**	0.5
73.2	0.732	17.6	19.9	-2.3	**0.7**	0.5
73.2	0.732	19.4	19.9	-0.5	**0.7**	0.5
73.2	0.732	17.6	19.9	-2.2	**0.7**	0.5
73.2	0.732	20.9	19.7	1.2	**0.7**	0.5
73.2	0.732	21.2	19.7	1.4	**0.7**	0.5
73.2	0.732	21.1	19.6	1.6	**0.7**	0.5
73.2	0.732	18.0	19.9	-1.8	**0.7**	0.5
73.2	0.732	21.1	19.9	1.2	**0.7**	0.5
73.2	0.732	21.3	19.7	1.6	**0.7**	0.5
73.2	0.732	17.5	19.7	-2.2	**0.7**	0.5
73.2	0.732	20.9	19.9	1.1	**0.7**	0.5
73.2	0.732	19.7	19.7	0.0	**0.7**	0.5

Table A.1-8 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1 (2 row caulking) when bin was empty and carbon dioxide purging time was 60 min.

										Replicate No.												
Sample No.	E11-60					E12-60					E13-60					E14-60						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	22.5	20.6	1.9	253.9	2.539	20.4	18.7	1.7	253.9	2.539	20.6	20.0	0.6	253.9	2.539	19.7	19.3	0.4	**2.5**	0.0
1	249.0	2.490	22.4	20.5	1.9	229.5	2.295	20.0	18.6	1.5	229.5	2.295	20.4	20.3	0.1	249.0	2.490	20.8	19.6	1.2	**2.4**	0.1
2	249.0	2.490	22.5	20.6	1.9	219.7	2.197	19.9	18.5	1.5	219.7	2.197	20.0	20.1	-0.1	244.1	2.441	18.1	20.0	-1.8	**2.3**	0.2
3	244.1	2.441	22.5	20.7	1.8	214.8	2.148	19.8	18.5	1.3	210.0	2.100	20.0	19.9	0.1	239.3	2.393	20.7	19.9	0.8	**2.3**	0.2
4	244.1	2.441	22.5	20.6	1.9	210.0	2.100	19.7	18.5	1.2	205.1	2.051	20.0	19.9	0.1	239.3	2.393	17.9	19.8	-1.8	**2.2**	0.2
5	244.1	2.441	22.5	20.6	1.9	210.0	2.100	19.9	18.6	1.2	200.2	2.002	20.1	20.7	-0.6	239.3	2.393	18.1	19.4	-1.2	**2.2**	0.2
6	244.1	2.441	22.5	20.6	1.9	205.1	2.051	19.7	18.5	1.2	195.3	1.953	19.8	20.1	-0.2	234.4	2.344	17.9	19.4	-1.5	**2.2**	0.2
7	244.1	2.441	22.4	19.9	2.5	205.1	2.051	19.7	18.6	1.1	190.4	1.904	19.8	20.0	-0.1	234.4	2.344	21.0	19.3	1.7	**2.2**	0.3
8	244.1	2.441	22.2	19.8	2.4	200.2	2.002	19.7	18.5	1.2	185.5	1.855	19.7	19.8	-0.1	234.4	2.344	20.7	19.4	1.3	**2.2**	0.3
9	244.1	2.441	22.0	19.5	2.5	200.2	2.002	19.6	18.6	1.0	185.5	1.855	19.9	20.0	-0.1	229.5	2.295	18.7	19.8	-1.1	**2.1**	0.3
10	239.3	2.393	22.2	19.9	2.3	195.3	1.953	19.7	18.5	1.2	180.7	1.807	19.8	20.0	-0.2	229.5	2.295	20.6	20.0	0.6	**2.1**	0.3
11	239.3	2.393	22.2	19.9	2.3	195.3	1.953	19.6	18.5	1.1	175.8	1.758	19.8	19.9	-0.1	229.5	2.295	19.2	20.0	-0.9	**2.1**	0.3
12	239.3	2.393	22.3	20.3	2.0	190.4	1.904	19.8	18.7	1.1	170.9	1.709	19.8	19.8	0.0	229.5	2.295	20.6	19.6	1.0	**2.1**	0.3
13	234.4	2.344	22.3	20.4	1.9	190.4	1.904	19.7	18.4	1.2	166.0	1.660	19.8	20.1	-0.2	229.5	2.295	19.3	19.5	-0.2	**2.1**	0.3
14	234.4	2.344	22.3	20.4	1.9	185.5	1.855	19.7	18.4	1.2	161.1	1.611	19.8	19.9	-0.1	224.6	2.246	19.0	19.3	-0.2	**2.0**	0.3
15	234.4	2.344	22.2	20.3	1.9	185.5	1.855	19.7	18.6	1.1	161.1	1.611	19.8	19.8	0.0	224.6	2.246	20.6	19.4	1.2	**2.0**	0.3
16	234.4	2.344	22.2	20.3	1.9	180.7	1.807	19.7	18.6	1.1	151.4	1.514	19.3	19.8	-0.5	224.6	2.246	19.4	19.5	-0.1	**2.0**	0.4
17	229.5	2.295	22.3	20.5	1.8	180.7	1.807	19.7	18.3	1.3	151.4	1.514	19.6	19.9	-0.4	219.7	2.197	21.0	19.8	1.2	**2.0**	0.4
18	229.5	2.295	22.3	20.5	1.8	175.8	1.758	19.7	18.4	1.2	146.5	1.465	19.6	19.8	-0.2	219.7	2.197	19.7	20.0	-0.4	**1.9**	0.4
19	229.5	2.295	22.3	20.4	1.9	175.8	1.758	19.4	18.6	0.9	146.5	1.465	19.6	19.8	-0.2	219.7	2.197	21.1	19.9	1.2	**1.9**	0.4
20	229.5	2.295	22.5	20.6	1.9	170.9	1.709	19.5	18.6	1.0	141.6	1.416	19.6	19.9	-0.2	219.7	2.197	19.4	19.8	-0.4	**1.9**	0.4
21	224.6	2.246	22.5	20.7	1.8	170.9	1.709	19.7	18.4	1.2	136.7	1.367	19.6	20.0	-0.4	219.7	2.197	18.9	19.4	-0.5	**1.9**	0.4
22	224.6	2.246	22.5	20.6	1.9	166.0	1.660	19.5	18.4	1.1	136.7	1.367	19.6	19.7	-0.1	214.8	2.148	18.1	19.4	-1.3	**1.9**	0.4
23	224.6	2.246	22.5	20.6	1.9	166.0	1.660	19.5	18.6	1.0	131.8	1.318	19.6	19.7	-0.1	214.8	2.148	20.7	19.4	1.3	**1.8**	0.4
24	224.6	2.246	22.3	20.4	1.9	166.0	1.660	19.5	18.6	1.0	127.0	1.270	19.6	19.9	-0.2	214.8	2.148	20.0	19.8	0.1	**1.8**	0.5
25	219.7	2.197	22.5	20.6	1.9	161.1	1.611	19.5	18.6	1.0	127.0	1.270	19.2	19.9	-0.6	214.8	2.148	20.6	19.9	0.7	**1.8**	0.4
26	219.7	2.197	22.5	20.6	1.9	161.1	1.611	19.4	18.6	0.9	122.1	1.221	19.8	19.9	-0.1	210.0	2.100	21.0	20.0	1.0	**1.8**	0.5
27	219.7	2.197	22.5	20.6	1.9	156.3	1.563	19.5	18.7	0.9	122.1	1.221	19.5	19.9	-0.4	210.0	2.100	19.7	19.9	-0.2	**1.8**	0.5
28	219.7	2.197	22.4	20.6	1.8	156.3	1.563	19.4	18.6	0.9	117.2	1.172	19.8	19.8	0.0	210.0	2.100	19.3	19.4	-0.1	**1.8**	0.5
29	214.8	2.148	22.5	20.6	1.9	151.4	1.514	19.5	18.6	1.0	117.2	1.172	19.7	19.9	-0.2	210.0	2.100	18.2	19.4	-1.2	**1.7**	0.5
30	214.8	2.148	22.5	20.6	1.9	151.4	1.514	19.4	18.7	0.7	112.3	1.123	19.5	19.9	-0.4	210.0	2.100	18.0	19.5	-1.5	**1.7**	0.5
31	214.8	2.148	22.4	20.6	1.8	151.4	1.514	19.5	18.6	1.0	112.3	1.123	19.5	19.8	-0.2	205.1	2.051	19.2	19.4	-0.2	**1.7**	0.5
32	214.8	2.148	22.5	20.6	1.9	151.4	1.514	19.7	18.7	1.0	107.4	1.074	19.5	19.8	-0.2	205.1	2.051	18.4	19.8	-1.5	**1.7**	0.5
33	214.8	2.148	22.4	20.6	1.8	151.4	1.514	19.6	18.6	1.0	107.4	1.074	19.7	19.8	-0.1	205.1	2.051	18.1	19.9	-1.8	**1.7**	0.5
34	214.8	2.148	22.5	20.7	1.8	146.5	1.465	19.8	18.8	1.0	102.5	1.025	19.7	20.0	-0.2	205.1	2.051	20.7	20.0	0.7	**1.7**	0.5
35	210.0	2.100	22.4	20.7	1.7	146.5	1.465	19.6	18.6	1.0	102.5	1.025	19.7	20.0	-0.2	200.2	2.002	20.6	19.7	0.8	**1.6**	0.5
36	210.0	2.100	22.4	20.6	1.8	146.5	1.465	19.6	18.6	1.0	97.7	0.977	19.5	19.7	-0.1	200.2	2.002	19.5	19.6	-0.1	**1.6**	0.5
37	210.0	2.100	22.4	20.6	1.8	141.6	1.416	19.6	18.6	1.0	97.7	0.977	19.7	19.8	-0.1	200.2	2.002	20.9	19.5	1.3	**1.6**	0.5
38	205.1	2.051	22.4	20.7	1.7	141.6	1.416	19.6	18.6	1.0	92.8	0.928	19.7	19.8	-0.1	200.2	2.002	19.0	19.3	-0.2	**1.6**	0.5
39	205.1	2.051	22.4	20.6	1.8	141.6	1.416	19.6	18.7	0.9	92.8	0.928	19.7	19.8	-0.1	200.2	2.002	21.1	19.4	1.7	**1.6**	0.5
40	205.1	2.051	22.5	20.6	1.9	136.7	1.367	19.6	18.6	1.0	92.8	0.928	19.7	19.8	-0.1	195.3	1.953	21.0	19.8	1.2	**1.6**	0.5

Table A.1-8 continued...

41	205.1	2.051	22.5	20.7	1.8	136.7	1.367	19.6	18.6	1.0	87.9	0.879	19.4	19.8	-0.4	195.3	1.953	21.0	19.8	1.2	**1.6**	0.5
42	200.2	2.002	22.5	20.6	1.9	136.7	1.367	19.6	18.7	0.9	87.9	0.879	19.5	19.7	-0.1	195.3	1.953	17.7	20.1	-2.5	**1.6**	0.5
43	200.2	2.002	22.5	20.7	1.8	131.8	1.318	19.8	18.8	1.0	87.9	0.879	19.5	19.7	-0.1	195.3	1.953	19.7	20.0	-0.4	**1.5**	0.5
44	200.2	2.002	22.5	20.6	1.9	131.8	1.318	19.8	18.9	0.9	83.0	0.830	19.6	19.8	-0.2	195.3	1.953	19.2	19.8	-0.6	**1.5**	0.6
45	200.2	2.002	22.4	20.6	1.8	131.8	1.318	19.8	18.9	0.9	83.0	0.830	19.5	19.8	-0.4	195.3	1.953	19.8	19.5	0.2	**1.5**	0.6
46	200.2	2.002	22.3	20.5	1.8	127.0	1.270	19.8	18.9	0.9	83.0	0.830	19.5	19.8	-0.4	190.4	1.904	19.1	19.6	-0.5	**1.5**	0.6
47	200.2	2.002	22.5	19.7	2.8	127.0	1.270	19.6	18.9	0.7	78.1	0.781	19.8	20.0	-0.2	190.4	1.904	20.7	19.3	1.5	**1.5**	0.6
48	200.2	2.002	22.5	19.6	2.9	127.0	1.270	19.8	18.9	0.9	78.1	0.781	19.8	20.0	-0.2	190.4	1.904	20.0	19.5	0.5	**1.5**	0.6
49	200.2	2.002	22.2	19.5	2.6	127.0	1.270	19.8	18.7	1.1	73.2	0.732	19.8	20.0	-0.2	190.4	1.904	20.6	19.8	0.8	**1.5**	0.6
50	200.2	2.002	22.2	19.8	2.4	122.1	1.221	19.9	18.8	1.1	73.2	0.732	19.8	20.0	-0.2	185.5	1.855	18.4	20.0	-1.6	**1.5**	0.6
51	200.2	2.002	22.2	19.9	2.3	122.1	1.221	19.6	18.6	1.0	73.2	0.732	19.8	19.9	-0.1	185.5	1.855	18.3	19.9	-1.6	**1.5**	0.6
52	195.3	1.953	22.5	20.1	2.4	122.1	1.221	19.8	18.9	0.9	73.2	0.732	19.6	20.0	-0.4	185.5	1.855	20.4	19.8	0.6	**1.4**	0.6
53	195.3	1.953	22.3	20.4	1.9	117.2	1.172	19.8	18.8	1.0	68.4	0.684	19.8	20.0	-0.2	185.5	1.855	19.7	19.4	0.4	**1.4**	0.6
54	195.3	1.953	22.6	20.7	1.9	117.2	1.172	19.8	18.8	1.0	68.4	0.684	19.6	20.0	-0.4	185.5	1.855	19.9	19.4	0.5	**1.4**	0.6
55	190.4	1.904	22.5	20.7	1.8	117.2	1.172	19.8	18.8	1.0	68.4	0.684	19.6	20.0	-0.4	180.7	1.807	18.1	19.4	-1.3	**1.4**	0.6
56	190.4	1.904	22.5	20.7	1.8	112.3	1.123	19.9	18.8	1.1	68.4	0.684	19.8	19.9	-0.1	180.7	1.807	18.1	19.9	-1.8	**1.4**	0.6
57	190.4	1.904	22.5	20.6	1.9	112.3	1.123	19.8	18.8	1.0	68.4	0.684	19.3	19.9	-0.6	180.7	1.807	19.9	20.0	-0.1	**1.4**	0.6
58	190.4	1.904	22.3	20.2	2.2	112.3	1.123	19.8	18.8	1.0	68.4	0.684	19.6	19.9	-0.2	180.7	1.807	18.1	20.1	-2.1	**1.4**	0.6
59	195.3	1.953	22.5	19.7	2.8	112.3	1.123	19.8	18.8	1.0	63.5	0.635	19.5	19.9	-0.4	180.7	1.807	18.1	20.1	-2.0	**1.4**	0.6
60	195.3	1.953	22.5	18.8	3.7	107.4	1.074	19.8	18.8	1.0	63.5	0.635	19.6	19.9	-0.2	175.8	1.758	18.9	19.8	-1.0	**1.4**	0.6
61	200.2	2.002	22.3	13.6	8.8	107.4	1.074	19.6	18.6	1.0	63.5	0.635	19.8	20.1	-0.2	175.8	1.758	18.3	19.5	-1.2	**1.4**	0.6
62	210.0	2.100	21.0	7.0	14.0	107.4	1.074	19.8	18.8	1.0	58.6	0.586	19.6	19.9	-0.2	175.8	1.758	21.0	19.4	1.6	**1.4**	0.7
63	210.0	2.100	18.7	4.4	14.3	107.4	1.074	19.6	18.7	0.9	58.6	0.586	19.7	19.9	-0.2	175.8	1.758	20.3	19.5	0.9	**1.4**	0.7
64	205.1	2.051	17.0	4.0	13.0	102.5	1.025	19.6	18.6	1.0	58.6	0.586	19.7	19.9	-0.2	175.8	1.758	19.4	19.7	-0.4	**1.4**	0.7
65	205.1	2.051	16.0	2.3	13.6	102.5	1.025	19.8	18.8	1.0	58.6	0.586	19.8	20.1	-0.2	170.9	1.709	20.1	19.9	0.2	**1.3**	0.7
66	200.2	2.002	15.2	3.3	11.9	102.5	1.025	19.9	18.9	1.0	58.6	0.586	19.7	19.7	0.0	170.9	1.709	18.3	20.0	-1.7	**1.3**	0.6
67	195.3	1.953	14.7	1.2	13.5	97.7	0.977	19.8	18.8	1.0	53.7	0.537	19.6	19.6	0.0	170.9	1.709	20.3	19.9	0.4	**1.3**	0.7
68	190.4	1.904	14.8	2.1	12.7	97.7	0.977	19.8	18.8	1.0	53.7	0.537	19.6	19.9	-0.2	170.9	1.709	18.9	19.5	-0.6	**1.3**	0.6
69	190.4	1.904	14.2	1.2	13.0	97.7	0.977	19.8	18.7	1.1	53.7	0.537	19.6	19.9	-0.2	170.9	1.709	18.1	19.4	-1.3	**1.3**	0.6
70	190.4	1.904	14.1	1.2	12.9	97.7	0.977	19.8	18.5	1.2	53.7	0.537	19.5	19.9	-0.4	170.9	1.709	19.5	19.4	0.1	**1.3**	0.6
71	185.5	1.855	13.8	3.5	10.3	92.8	0.928	19.8	18.5	1.2	53.7	0.537	19.6	20.1	-0.5	166.0	1.660	20.7	19.7	1.1	**1.2**	0.6
72	180.7	1.807	14.7	6.9	7.8	92.8	0.928	19.8	18.5	1.2	48.8	0.488	19.7	19.8	-0.1	166.0	1.660	21.0	20.0	1.0	**1.2**	0.6
73	180.7	1.807	15.4	9.1	6.3	87.9	0.879	19.9	18.5	1.3	48.8	0.488	19.7	19.9	-0.2	166.0	1.660	19.8	20.0	-0.2	**1.2**	0.6
74	180.7	1.807	15.7	10.1	5.6	87.9	0.879	19.8	18.5	1.2	48.8	0.488	19.5	19.8	-0.2	166.0	1.660	20.7	19.9	0.8	**1.2**	0.6
75	180.7	1.807	16.1	10.4	5.8	87.9	0.879	19.8	18.5	1.2	48.8	0.488	19.7	19.9	-0.2	166.0	1.660	19.3	19.7	-0.4	**1.2**	0.6
76	185.5	1.855	16.4	11.1	5.3	87.9	0.879	19.8	18.5	1.2	48.8	0.488	19.6	19.8	-0.2	166.0	1.660	18.3	19.4	-1.1	**1.2**	0.6
77	190.4	1.904	16.6	11.6	5.0	83.0	0.830	19.9	18.7	1.2	48.8	0.488	19.6	19.8	-0.2	161.1	1.611	18.1	19.4	-1.3	**1.2**	0.7
78	190.4	1.904	17.0	12.9	4.0	83.0	0.830	19.8	18.7	1.1	48.8	0.488	19.7	19.9	-0.2	161.1	1.611	19.4	19.5	-0.1	**1.2**	0.7
79	190.4	1.904	17.3	14.0	3.3	83.0	0.830	19.6	18.5	1.1	48.8	0.488	19.7	19.8	-0.1	161.1	1.611	18.1	19.8	-1.7	**1.2**	0.7
80	190.4	1.904	17.7	15.2	2.5	83.0	0.830	19.9	18.7	1.2	43.9	0.439	19.4	19.8	-0.4	161.1	1.611	17.9	19.9	-2.0	**1.2**	0.7
81	190.4	1.904	17.8	15.8	2.1	78.1	0.781	19.8	18.7	1.1	43.9	0.439	19.6	19.9	-0.4	161.1	1.611	19.5	20.1	-0.6	**1.2**	0.7
82	195.3	1.953	18.2	16.5	1.7	78.1	0.781	19.6	18.5	1.1	43.9	0.439	19.9	20.0	-0.1	156.3	1.563	19.2	19.6	-0.4	**1.2**	0.7
83	195.3	1.953	18.2	17.1	1.1	78.1	0.781	19.6	18.7	1.0	43.9	0.439	19.9	20.1	-0.2	156.3	1.563	19.9	19.4	0.5	**1.2**	0.7
84	195.3	1.953	18.5	17.2	1.2	78.1	0.781	19.6	18.7	1.0	43.9	0.439	19.9	20.0	-0.1	156.3	1.563	20.0	19.4	0.6	**1.2**	0.7
85	195.3	1.953	18.9	17.7	1.2	73.2	0.732	19.8	18.8	1.0	43.9	0.439	19.7	19.9	-0.1	156.3	1.563	19.2	19.4	-0.2	**1.2**	0.7
86	200.2	2.002	19.1	17.7	1.3	73.2	0.732	19.8	18.7	1.1	43.9	0.439	20.0	20.2	-0.1	156.3	1.563	19.4	19.7	-0.2	**1.2**	0.7
87	200.2	2.002	19.1	18.2	1.0	73.2	0.732	19.9	18.5	1.3	43.9	0.439	20.0	20.0	0.0	151.4	1.514	19.4	20.0	-0.6	**1.2**	0.7
88	200.2	2.002	19.4	18.5	0.9	73.2	0.732	19.8	18.7	1.1	43.9	0.439	19.9	20.0	-0.1	151.4	1.514	19.8	20.0	-0.2	**1.2**	0.7

Table A.1-8 continued...

89	205.1	2.051	19.4	18.5	0.9	73.2	0.732	19.8	18.7	1.1	43.9	0.439	19.7	19.9	-0.2	151.4	1.514	18.9	19.8	-0.9	**1.2**	0.7
90	205.1	2.051	19.7	19.0	0.7	73.2	0.732	19.9	18.7	1.2	43.9	0.439	19.9	20.0	-0.1	151.4	1.514	17.9	19.9	-2.0	**1.2**	0.7
91	205.1	2.051	19.8	18.9	0.9	68.4	0.684	19.8	18.8	1.0	43.9	0.439	19.9	19.9	0.0	151.4	1.514	19.8	19.4	0.4	**1.2**	0.7
92	205.1	2.051	19.9	19.1	0.9	68.4	0.684	19.8	18.7	1.1	43.9	0.439	19.9	19.9	0.0	151.4	1.514	19.0	19.4	-0.4	**1.2**	0.7
93	205.1	2.051	20.1	19.0	1.1	68.4	0.684	19.8	18.7	1.1	39.1	0.391	19.9	20.0	-0.1	151.4	1.514	19.9	19.9	0.0	**1.2**	0.8
94	205.1	2.051	20.1	19.0	1.1	68.4	0.684	19.9	18.5	1.3	39.1	0.391	19.8	20.0	-0.2	146.5	1.465	18.1	20.0	-1.8	**1.1**	0.8
95	205.1	2.051	20.1	18.9	1.2	63.5	0.635	19.9	18.4	1.5	39.1	0.391	19.8	19.9	-0.1	146.5	1.465	18.2	20.0	-1.8	**1.1**	0.8
96	205.1	2.051	20.2	19.0	1.2	63.5	0.635	19.9	18.2	1.7	39.1	0.391	20.1	20.1	0.0	146.5	1.465	21.0	19.8	1.2	**1.1**	0.8
97	205.1	2.051	20.2	18.9	1.3	63.5	0.635	19.6	18.1	1.5	39.1	0.391	20.1	20.1	0.0	146.5	1.465	20.6	19.4	1.2	**1.1**	0.8
98	200.2	2.002	20.2	18.9	1.3	58.6	0.586	19.7	18.1	1.6	39.1	0.391	19.7	20.1	-0.4	146.5	1.465	18.4	19.4	-1.0	**1.1**	0.8
99	200.2	2.002	20.4	18.9	1.5	63.5	0.635	19.5	18.1	1.5	39.1	0.391	19.8	20.1	-0.2	146.5	1.465	20.1	19.6	0.5	**1.1**	0.7
100	200.2	2.002	20.5	18.9	1.6	58.6	0.586	19.5	18.2	1.3	39.1	0.391	20.1	20.1	0.0	146.5	1.465	21.0	19.7	1.3	**1.1**	0.8
101	200.2	2.002	20.7	19.5	1.2	58.6	0.586	19.7	18.2	1.5	39.1	0.391	19.7	20.1	-0.4	141.6	1.416	20.9	19.8	1.1	**1.1**	0.7
102	195.3	1.953	20.7	19.4	1.3	58.6	0.586	19.5	18.3	1.2	39.1	0.391	19.8	19.9	-0.1	141.6	1.416	19.5	20.0	-0.5	**1.1**	0.7
103	195.3	1.953	20.9	19.7	1.2	58.6	0.586	19.5	18.4	1.1	39.1	0.391	20.0	20.1	-0.1	141.6	1.416	20.7	20.0	0.7	**1.1**	0.7
104	195.3	1.953	21.0	19.8	1.2	53.7	0.537	19.5	18.3	1.2	39.1	0.391	19.8	19.9	-0.1	141.6	1.416	20.1	20.0	0.1	**1.1**	0.7
105	195.3	1.953	20.9	19.7	1.2	53.7	0.537	19.7	18.5	1.2	39.1	0.391	19.8	20.1	-0.2	141.6	1.416	18.2	19.6	-1.3	**1.1**	0.7
106	195.3	1.953	21.0	19.6	1.4	53.7	0.537	19.7	18.4	1.3	39.1	0.391	19.8	19.9	-0.1	136.7	1.367	17.9	19.3	-1.3	**1.1**	0.7
107	190.4	1.904	21.2	19.5	1.7	53.7	0.537	19.9	18.7	1.2	39.1	0.391	20.0	20.1	-0.1	136.7	1.367	19.0	19.3	-0.2	**1.0**	0.7
108	190.4	1.904	21.1	19.6	1.4	53.7	0.537	19.9	18.5	1.3	39.1	0.391	19.8	20.1	-0.2	136.7	1.367	17.7	19.4	-1.7	**1.0**	0.7
109	190.4	1.904	21.2	19.6	1.6	53.7	0.537	19.4	18.3	1.1	39.1	0.391	19.8	20.1	-0.2	136.7	1.367	20.7	19.8	1.0	**1.0**	0.7
110	185.5	1.855	21.4	19.7	1.7	48.8	0.488	19.5	18.3	1.2	39.1	0.391	20.0	20.1	-0.1	136.7	1.367	20.6	20.0	0.6	**1.0**	0.7
111	185.5	1.855	21.3	19.7	1.6	48.8	0.488	19.7	18.5	1.2	39.1	0.391	20.0	20.1	-0.1	136.7	1.367	18.3	20.1	-1.8	**1.0**	0.7
112	185.5	1.855	21.3	19.7	1.6	48.8	0.488	19.8	18.5	1.2	34.2	0.342	20.0	20.1	-0.1	136.7	1.367	19.8	19.8	0.0	**1.0**	0.7
113	180.7	1.807	21.4	19.4	1.9	48.8	0.488	19.8	18.5	1.2	34.2	0.342	20.0	20.1	-0.1	136.7	1.367	19.8	19.4	0.4	**1.0**	0.7
114	180.7	1.807	21.4	19.4	1.9	48.8	0.488	19.7	18.6	1.1	34.2	0.342	20.1	20.0	0.1	131.8	1.318	17.9	19.2	-1.3	**1.0**	0.7
115	180.7	1.807	21.4	19.4	1.9	48.8	0.488	19.7	18.2	1.5	34.2	0.342	20.0	20.1	-0.1	131.8	1.318	20.6	19.4	1.2	**1.0**	0.7
116	175.8	1.758	21.4	19.4	1.9	48.8	0.488	19.9	18.4	1.5	34.2	0.342	20.0	20.1	-0.1	131.8	1.318	18.2	19.8	-1.6	**1.0**	0.7
117	175.8	1.758	21.4	19.4	1.9	48.8	0.488	19.6	18.4	1.2	34.2	0.342	19.8	20.1	-0.2	131.8	1.318	17.9	20.0	-2.1	**1.0**	0.7
118	175.8	1.758	21.4	19.4	1.9	43.9	0.439	19.6	18.2	1.3	34.2	0.342	20.0	20.1	-0.1	131.8	1.318	17.8	20.0	-2.2	**1.0**	0.7
119	175.8	1.758	21.4	19.7	1.7	43.9	0.439	19.6	18.5	1.1	34.2	0.342	19.7	20.1	-0.4	131.8	1.318	20.9	19.7	1.2	**1.0**	0.7
120	170.9	1.709	21.5	19.6	1.9	43.9	0.439	19.4	18.2	1.2	34.2	0.342	20.0	20.1	-0.1	131.8	1.318	18.7	19.5	-0.9	**1.0**	0.7
121	170.9	1.709	21.5	19.6	1.9	43.9	0.439	19.7	18.4	1.3	34.2	0.342	20.0	20.1	-0.1	131.8	1.318	20.6	19.4	1.2	**1.0**	0.7
122	170.9	1.709	21.5	19.6	1.9	43.9	0.439	19.7	18.5	1.2	34.2	0.342	20.0	20.1	-0.1	127.0	1.270	19.4	19.5	-0.1	**0.9**	0.7
123	166.0	1.660	21.5	19.6	1.9	39.1	0.391	19.5	18.3	1.2	34.2	0.342	19.8	20.1	-0.2	127.0	1.270	20.9	19.8	1.1	**0.9**	0.7
124	166.0	1.660	21.5	19.7	1.8	39.1	0.391	19.7	18.5	1.2	34.2	0.342	19.8	20.1	-0.2	127.0	1.270	19.9	20.0	-0.1	**0.9**	0.7
125	166.0	1.660	21.5	19.6	1.9	39.1	0.391	19.4	18.3	1.1	34.2	0.342	19.8	20.0	-0.1	127.0	1.270	18.8	20.1	-1.3	**0.9**	0.7
126	166.0	1.660	21.7	19.9	1.8	39.1	0.391	19.4	18.3	1.1	34.2	0.342	19.7	20.0	-0.2	127.0	1.270	17.8	19.7	-2.0	**0.9**	0.7
127	161.1	1.611	21.7	19.8	1.9	39.1	0.391	19.5	18.5	1.0	34.2	0.342	20.1	20.1	0.0	127.0	1.270	19.9	19.7	0.2	**0.9**	0.6
128	161.1	1.611	21.7	19.7	1.9	39.1	0.391	19.6	18.4	1.2	34.2	0.342	20.0	20.0	0.0	127.0	1.270	21.0	19.4	1.6	**0.9**	0.6
129	161.1	1.611	21.7	19.6	2.0	39.1	0.391	19.6	18.5	1.1	34.2	0.342	20.1	20.1	0.0	122.1	1.221	19.4	19.2	0.1	**0.9**	0.6
130	161.1	1.611	21.8	19.9	1.9	39.1	0.391	19.5	18.4	1.1	34.2	0.342	20.0	20.1	-0.1	122.1	1.221	18.4	19.5	-1.1	**0.9**	0.6
131	161.1	1.611	21.8	19.9	1.9	34.2	0.342	19.6	18.4	1.2	34.2	0.342	20.1	20.2	-0.1	122.1	1.221	19.9	19.9	0.0	**0.9**	0.6
132	156.3	1.563	21.8	19.9	1.9	34.2	0.342	19.6	18.5	1.1	34.2	0.342	20.1	20.1	0.0	122.1	1.221	20.6	20.3	0.4	**0.9**	0.6
133	156.3	1.563	21.8	19.8	2.0	34.2	0.342	19.6	18.5	1.1	34.2	0.342	20.1	20.1	0.0	122.1	1.221	20.7	20.2	0.5	**0.9**	0.6
134	156.3	1.563	21.8	19.8	2.0	34.2	0.342	19.8	18.5	1.2	34.2	0.342	19.7	20.0	-0.2	122.1	1.221	19.0	19.7	-0.6	**0.9**	0.6
135	151.4	1.514	21.8	19.8	2.0	34.2	0.342	19.8	18.5	1.2	29.3	0.293	20.0	20.1	-0.1	122.1	1.221	20.0	19.4	0.6	**0.8**	0.6
136	151.4	1.514	22.0	19.8	2.2	34.2	0.342	19.8	18.5	1.2	29.3	0.293	20.1	20.0	0.1	117.2	1.172	20.8	19.4	1.5	**0.8**	0.6

Table A.1-8 continued...

137	151.4	1.514	21.8	19.8	2.0	34.2	0.342	19.8	18.4	1.3	29.3	0.293	19.8	20.0	-0.1	117.2	1.172	20.1	19.8	0.4	**0.8**	0.6
138	151.4	1.514	21.8	19.9	1.9	29.3	0.293	19.6	18.7	1.0	29.3	0.293	19.9	20.1	-0.2	117.2	1.172	20.7	20.1	0.6	**0.8**	0.6
139	151.4	1.514	21.8	19.9	1.9	29.3	0.293	19.6	18.4	1.2	29.3	0.293	20.2	20.3	-0.1	117.2	1.172	21.0	19.9	1.1	**0.8**	0.6
140	151.4	1.514	22.0	20.0	2.0	29.3	0.293	19.8	18.4	1.3	29.3	0.293	20.0	20.0	0.0	117.2	1.172	18.9	19.7	-0.7	**0.8**	0.6
141	146.5	1.465	22.0	20.1	1.9	29.3	0.293	19.5	18.4	1.1	29.3	0.293	19.8	20.1	-0.2	117.2	1.172	20.7	19.4	1.3	**0.8**	0.6
142	146.5	1.465	22.0	20.0	2.0	29.3	0.293	19.6	18.4	1.2	29.3	0.293	20.0	20.1	-0.1	117.2	1.172	20.6	19.2	1.3	**0.8**	0.6
143	146.5	1.465	22.0	20.0	2.0	29.3	0.293	19.6	18.5	1.1	29.3	0.293	20.0	20.1	-0.1	117.2	1.172	20.9	19.8	1.1	**0.8**	0.6
144	146.5	1.465	22.0	20.0	2.0	29.3	0.293	19.6	18.5	1.1	29.3	0.293	20.0	20.1	-0.1	117.2	1.172	19.7	19.7	0.0	**0.8**	0.6
145	146.5	1.465	22.0	20.0	2.0	29.3	0.293	19.8	18.5	1.2	29.3	0.293	19.8	19.9	-0.1	117.2	1.172	18.0	20.0	-2.0	**0.8**	0.6
146	141.6	1.416	22.0	20.0	2.0	29.3	0.293	19.6	18.2	1.3	29.3	0.293	19.8	20.1	-0.2	117.2	1.172	20.0	19.9	0.1	**0.8**	0.6
147	141.6	1.416	22.2	20.1	2.0	24.4	0.244	19.6	18.5	1.1	29.3	0.293	20.0	20.0	0.0	112.3	1.123	19.9	19.4	0.5	**0.8**	0.6
148	141.6	1.416	22.2	20.3	1.9	24.4	0.244	19.8	18.5	1.2	29.3	0.293	20.0	20.1	-0.1	112.3	1.123	20.5	19.4	1.1	**0.8**	0.6
149	141.6	1.416	22.0	20.0	2.0	24.4	0.244	19.6	18.5	1.1	34.2	0.342	20.0	20.0	0.0	112.3	1.123	18.1	19.5	-1.5	**0.8**	0.6
150	141.6	1.416	22.2	20.1	2.0	24.4	0.244	19.6	18.5	1.1	34.2	0.342	20.0	20.0	0.0	112.3	1.123	18.0	19.7	-1.7	**0.8**	0.6
151	141.6	1.416	22.0	20.1	1.9											112.3	1.123	20.3	20.0	0.2	**0.6**	0.7
152	136.7	1.367	22.3	20.3	2.0											112.3	1.123	19.9	19.8	0.1	**0.6**	0.7
153	136.7	1.367	22.2	20.3	1.9											112.3	1.123	19.1	19.2	-0.1	**0.6**	0.7
154	136.7	1.367	22.2	20.1	2.0											107.4	1.074	18.9	19.4	-0.5	**0.6**	0.7
155	136.7	1.367	22.1	20.0	2.2											107.4	1.074	18.1	19.6	-1.5	**0.6**	0.7
156	136.7	1.367	22.2	20.3	1.9											107.4	1.074	20.6	19.9	0.7	**0.6**	0.7
157	136.7	1.367	22.2	20.3	1.9											107.4	1.074	19.7	20.0	-0.2	**0.6**	0.7
158	136.7	1.367	22.0	20.4	1.7											107.4	1.074	20.5	19.9	0.6	**0.6**	0.7
159	131.8	1.318	22.2	20.4	1.8											107.4	1.074	18.6	19.4	-0.7	**0.6**	0.7
160	131.8	1.318	22.2	20.3	1.9											107.4	1.074	19.3	19.4	-0.1	**0.6**	0.7
161	131.8	1.318	22.2	20.1	2.0											107.4	1.074	18.2	19.7	-1.5	**0.6**	0.7
162	131.8	1.318	22.2	20.3	1.9											107.4	1.074	20.7	20.1	0.6	**0.6**	0.7
163	131.8	1.318	22.2	20.3	1.9											102.5	1.025	19.4	20.0	-0.6	**0.6**	0.7
164	127.0	1.270	22.3	20.3	2.0											102.5	1.025	19.1	19.5	-0.4	**0.6**	0.7
165	127.0	1.270	22.3	20.3	2.0											102.5	1.025	18.1	19.4	-1.3	**0.6**	0.7
166	127.0	1.270	22.3	20.3	2.0											102.5	1.025	19.7	19.2	0.5	**0.6**	0.7
167	127.0	1.270	22.2	20.3	1.9											102.5	1.025	18.3	19.6	-1.3	**0.6**	0.7
168	122.1	1.221	22.3	20.3	2.0											102.5	1.025	17.9	20.1	-2.2	**0.6**	0.7
169	122.1	1.221	22.3	20.3	2.0											102.5	1.025	19.6	19.6	0.0	**0.6**	0.7
170	117.2	1.172	22.2	20.3	1.9											102.5	1.025	20.5	19.2	1.2	**0.5**	0.6
171	117.2	1.172	22.3	20.3	2.0											102.5	1.025	17.8	19.1	-1.3	**0.5**	0.6
172	117.2	1.172	22.3	20.3	2.0											102.5	1.025	20.0	19.5	0.5	**0.5**	0.6
173	117.2	1.172	22.3	20.3	2.0											102.5	1.025	19.6	19.9	-0.2	**0.5**	0.6
174	117.2	1.172	22.2	20.3	1.9											97.7	0.977	18.0	20.1	-2.1	**0.5**	0.6
175	117.2	1.172	22.5	20.4	2.0											97.7	0.977	18.3	19.5	-1.2	**0.5**	0.6
176	117.2	1.172	22.3	20.4	1.9											97.7	0.977	19.1	19.1	0.0	**0.5**	0.6
177	117.2	1.172	22.3	20.3	2.0											97.7	0.977	20.6	19.2	1.3	**0.5**	0.6
178	117.2	1.172	22.3	20.1	2.2											97.7	0.977	18.5	19.7	-1.2	**0.5**	0.6
179	117.2	1.172	22.2	20.3	1.9											97.7	0.977	20.5	19.9	0.6	**0.5**	0.6
180	112.3	1.123	22.2	20.3	1.9											97.7	0.977	18.1	19.6	-1.5	**0.5**	0.6
181	112.3	1.123	22.5	20.3	2.2											97.7	0.977	20.9	19.4	1.6	**0.5**	0.6
182	112.3	1.123	22.3	20.1	2.2											97.7	0.977	19.6	19.2	0.4	**0.5**	0.6
183	112.3	1.123	22.3	20.3	2.0											97.7	0.977	20.7	19.5	1.2	**0.5**	0.6
184	112.3	1.123	22.5	20.4	2.0											97.7	0.977	17.9	20.0	-2.1	**0.5**	0.6

Table A.1-8 continued...

185	112.3	1.123	22.5	20.3	2.2
186	112.3	1.123	22.5	20.4	2.0
187	112.3	1.123	22.5	20.3	2.2
188	112.3	1.123	22.5	20.3	2.2
189	107.4	1.074	22.3	20.3	2.0
190	107.4	1.074	22.5	20.3	2.2
191	107.4	1.074	22.5	20.2	2.3
192	107.4	1.074	22.5	20.4	2.0
193	107.4	1.074	22.5	20.3	2.2
194	107.4	1.074	22.5	20.3	2.2
195	107.4	1.074	22.5	20.3	2.2
196	107.4	1.074	22.2	20.1	2.0
197	102.5	1.025	22.5	20.3	2.2
198	102.5	1.025	22.6	20.5	2.2
199	102.5	1.025	22.3	20.3	2.0
200	102.5	1.025	22.3	20.3	2.0

92.8	0.928	20.7	19.9	0.8	**0.5**	0.6
92.8	0.928	18.9	19.5	-0.6	**0.5**	0.6
92.8	0.928	18.1	19.2	-1.1	**0.5**	0.6
92.8	0.928	17.9	19.5	-1.6	**0.5**	0.6
92.8	0.928	20.5	19.7	0.7	**0.5**	0.6
92.8	0.928	19.0	20.0	-1.0	**0.5**	0.6
92.8	0.928	19.8	19.9	-0.1	**0.5**	0.6
92.8	0.928	19.1	19.2	-0.1	**0.5**	0.6
92.8	0.928	18.8	19.4	-0.6	**0.5**	0.6
87.9	0.879	18.1	19.7	-1.6	**0.5**	0.6
87.9	0.879	17.9	20.0	-2.1	**0.5**	0.6
87.9	0.879	20.8	19.6	1.2	**0.5**	0.6
87.9	0.879	19.5	19.4	0.1	**0.5**	0.6
87.9	0.879	20.7	19.4	1.3	**0.5**	0.6
87.9	0.879	20.2	19.6	0.6	**0.5**	0.6
87.9	0.879	17.9	20.0	-2.1	**0.5**	0.6
87.9	0.879	19.7	19.6	0.1	**0.2**	0.4
87.9	0.879	20.7	19.2	1.5	**0.2**	0.4
87.9	0.879	20.3	19.5	0.7	**0.2**	0.4
87.9	0.879	18.1	19.6	-1.5	**0.2**	0.4
87.9	0.879	19.1	20.0	-0.9	**0.2**	0.4
87.9	0.879	18.9	19.7	-0.9	**0.2**	0.4
87.9	0.879	20.3	19.4	1.0	**0.2**	0.4
83.0	0.830	20.3	19.2	1.1	**0.2**	0.4
83.0	0.830	20.5	19.5	1.0	**0.2**	0.4
83.0	0.830	18.9	19.9	-1.0	**0.2**	0.4
83.0	0.830	19.5	20.0	-0.5	**0.2**	0.4
83.0	0.830	17.9	19.7	-1.8	**0.2**	0.4
83.0	0.830	18.3	19.7	-1.3	**0.2**	0.4
83.0	0.830	19.9	19.2	0.6	**0.2**	0.4
83.0	0.830	19.1	19.5	-0.4	**0.2**	0.4
83.0	0.830	18.1	19.9	-1.7	**0.2**	0.4
83.0	0.830	17.8	20.1	-2.3	**0.2**	0.4
83.0	0.830	19.5	19.7	-0.2	**0.2**	0.4
83.0	0.830	20.7	19.4	1.3	**0.2**	0.4
78.1	0.781	20.0	19.2	0.7	**0.2**	0.4
78.1	0.781	18.3	19.4	-1.1	**0.2**	0.4
78.1	0.781	20.7	19.9	0.8	**0.2**	0.4
78.1	0.781	19.0	20.1	-1.1	**0.2**	0.4
78.1	0.781	20.9	19.7	1.2	**0.2**	0.4
78.1	0.781	19.6	19.4	0.2	**0.2**	0.4
78.1	0.781	18.3	19.5	-1.2	**0.2**	0.4
78.1	0.781	19.6	19.5	0.1	**0.2**	0.4
78.1	0.781	19.7	20.1	-0.5	**0.2**	0.4
78.1	0.781	18.1	20.0	-1.8	**0.2**	0.4
73.2	0.732	19.0	19.5	-0.5	**0.2**	0.4
73.2	0.732	19.7	19.1	0.6	**0.2**	0.4
73.2	0.732	19.1	19.5	-0.4	**0.2**	0.4

Table A.1-9 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 1' (2 row caulking with additional protective coating) when bin was empty and carbon dioxide purging time was 60 min.

Sample No.	E11-pc					E12-pc					E13-pc					E14-pc						
Replicate No.																						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	20.9	19.6	1.3	258.8	2.588	19.1	17.9	1.2	258.8	2.588	20.2	19.6	0.6	258.8	2.588	18.7	19.9	-1.2	**2.6**	0.0
1	244.1	2.441	21.1	19.7	1.4	234.4	2.344	18.9	23.3	-4.3	224.6	2.246	19.7	20.7	-1.0	234.4	2.344	21.7	19.7	2.0	**2.3**	0.1
2	239.3	2.393	21.0	19.5	1.4	224.6	2.246	18.7	18.2	0.5	214.8	2.148	19.6	19.6	0.0	229.5	2.295	21.5	19.4	2.1	**2.3**	0.1
3	234.4	2.344	21.0	19.5	1.4	219.7	2.197	18.6	17.8	0.7	210.0	2.100	19.5	19.5	0.0	224.6	2.246	21.0	19.5	1.4	**2.2**	0.1
4	229.5	2.295	20.9	19.4	1.5	214.8	2.148	18.6	18.0	0.6	200.2	2.002	19.3	19.5	-0.2	224.6	2.246	18.1	20.0	-2.0	**2.2**	0.1
5	229.5	2.295	21.0	19.5	1.6	214.8	2.148	18.3	17.9	0.4	195.3	1.953	19.4	19.6	-0.1	219.7	2.197	18.3	20.1	-1.8	**2.1**	0.1
6	224.6	2.246	21.0	19.5	1.6	210.0	2.100	18.5	18.0	0.5	190.4	1.904	19.4	19.6	-0.1	219.7	2.197	20.0	20.0	0.0	**2.1**	0.2
7	224.6	2.246	20.9	19.5	1.5	210.0	2.100	18.5	18.1	0.4	185.5	1.855	19.4	19.4	0.0	214.8	2.148	17.9	19.7	-1.7	**2.1**	0.2
8	224.6	2.246	20.9	19.5	1.5	205.1	2.051	18.4	17.9	0.5	180.7	1.807	19.2	19.4	-0.2	214.8	2.148	18.1	19.3	-1.2	**2.1**	0.2
9	219.7	2.197	20.9	19.5	1.5	210.0	2.100	17.8	11.7	6.1	170.9	1.709	19.2	19.4	-0.2	214.8	2.148	19.3	19.3	0.0	**2.0**	0.2
10	219.7	2.197	20.9	19.3	1.6	219.7	2.197	15.9	8.3	7.6	166.0	1.660	19.1	19.4	-0.4	210.0	2.100	20.4	19.4	1.0	**2.0**	0.3
11	219.7	2.197	20.9	19.5	1.5	224.6	2.246	13.8	8.0	5.8	161.1	1.611	19.2	19.5	-0.2	210.0	2.100	19.2	20.0	-0.7	**2.0**	0.3
12	214.8	2.148	21.1	19.5	1.6	219.7	2.197	14.8	10.6	4.2	156.3	1.563	19.4	19.5	-0.1	210.0	2.100	19.5	20.0	-0.5	**2.0**	0.3
13	214.8	2.148	21.1	19.5	1.6	210.0	2.100	15.2	12.5	2.7	151.4	1.514	19.1	19.4	-0.2	205.1	2.051	18.1	20.0	-1.8	**2.0**	0.3
14	214.8	2.148	21.1	19.4	1.7	200.2	2.002	15.8	14.0	1.8	151.4	1.514	19.1	19.4	-0.2	210.0	2.100	21.0	19.6	1.3	**1.9**	0.3
15	214.8	2.148	21.0	19.4	1.6	195.3	1.953	16.3	15.2	1.1	146.5	1.465	19.1	19.2	-0.1	205.1	2.051	20.2	19.3	0.9	**1.9**	0.3
16	210.0	2.100	21.0	19.4	1.6	195.3	1.953	16.5	16.0	0.5	141.6	1.416	19.2	19.4	-0.2	205.1	2.051	21.0	19.5	1.5	**1.9**	0.3
17	210.0	2.100	21.0	19.4	1.6	190.4	1.904	16.6	16.3	0.2	136.7	1.367	19.2	19.4	-0.2	205.1	2.051	19.0	19.9	-0.9	**1.9**	0.3
18	210.0	2.100	21.1	19.6	1.6	190.4	1.904	16.6	16.8	-0.1	131.8	1.318	19.2	19.3	-0.1	205.1	2.051	18.0	20.0	-2.0	**1.8**	0.4
19	210.0	2.100	21.1	19.6	1.6	185.5	1.855	16.7	16.7	0.0	127.0	1.270	19.2	19.5	-0.2	200.2	2.002	20.8	20.0	0.8	**1.8**	0.4
20	205.1	2.051	21.0	19.6	1.4	185.5	1.855	17.0	17.2	-0.2	127.0	1.270	19.2	19.5	-0.2	200.2	2.002	17.8	19.8	-2.0	**1.8**	0.4
21	205.1	2.051	21.0	19.4	1.6	185.5	1.855	16.9	17.3	-0.4	122.1	1.221	19.3	19.5	-0.1	200.2	2.002	20.7	19.4	1.3	**1.8**	0.4
22	205.1	2.051	21.0	19.6	1.4	180.7	1.807	17.1	17.4	-0.4	117.2	1.172	18.9	19.3	-0.5	200.2	2.002	20.6	19.3	1.3	**1.8**	0.4
23	205.1	2.051	21.0	19.4	1.6	180.7	1.807	17.0	17.7	-0.7	112.3	1.123	19.2	19.3	-0.1	200.2	2.002	20.8	19.4	1.5	**1.7**	0.4
24	200.2	2.002	21.0	19.4	1.6	180.7	1.807	17.2	17.9	-0.7	112.3	1.123	19.1	19.3	-0.2	195.3	1.953	17.9	19.5	-1.6	**1.7**	0.4
25	200.2	2.002	21.2	19.6	1.6	175.8	1.758	17.2	17.7	-0.5	107.4	1.074	19.1	19.2	-0.1	195.3	1.953	19.4	19.9	-0.5	**1.7**	0.4
26	200.2	2.002	21.2	19.6	1.6	180.7	1.807	16.9	12.3	4.5	102.5	1.025	19.1	19.3	-0.2	195.3	1.953	20.8	20.1	0.7	**1.7**	0.5
27	200.2	2.002	21.2	19.6	1.6	190.4	1.904	15.5	11.3	4.2	102.5	1.025	19.1	19.5	-0.4	195.3	1.953	20.6	20.0	0.6	**1.7**	0.5
28	195.3	1.953	21.1	19.5	1.6	185.5	1.855	15.8	13.4	2.3	97.7	0.977	19.4	19.4	0.0	195.3	1.953	19.2	19.8	-0.6	**1.7**	0.5
29	195.3	1.953	21.1	19.5	1.6	180.7	1.807	16.0	14.6	1.3	92.8	0.928	19.1	19.4	-0.2	195.3	1.953	20.9	19.4	1.5	**1.7**	0.5
30	195.3	1.953	21.1	19.5	1.6	175.8	1.758	16.1	15.5	0.6	92.8	0.928	19.1	19.2	-0.1	190.4	1.904	18.2	19.3	-1.1	**1.6**	0.5
31	195.3	1.953	21.1	19.5	1.6	170.9	1.709	16.3	16.1	0.2	87.9	0.879	19.3	19.4	-0.1	190.4	1.904	15.2	19.5	-4.3	**1.6**	0.5
32	195.3	1.953	21.1	19.5	1.6	166.0	1.660	16.6	16.4	0.2	83.0	0.830	19.1	19.4	-0.2	190.4	1.904	18.7	19.8	-1.1	**1.6**	0.5
33	190.4	1.904	21.1	19.5	1.6	166.0	1.660	16.7	16.8	-0.1	78.1	0.781	19.1	19.4	-0.2	190.4	1.904	17.8	20.0	-2.2	**1.6**	0.5
34	190.4	1.904	21.1	19.5	1.6	161.1	1.611	17.0	17.1	-0.1	73.2	0.732	19.1	19.3	-0.1	190.4	1.904	15.4	19.9	-4.5	**1.5**	0.6
35	190.4	1.904	21.1	19.5	1.6	161.1	1.611	16.7	17.3	-0.6	73.2	0.732	19.3	19.6	-0.2	185.5	1.855	20.6	19.4	1.2	**1.5**	0.5
36	190.4	1.904	21.2	19.5	1.7	161.1	1.611	16.9	17.6	-0.7	68.4	0.684	19.3	19.6	-0.2	185.5	1.855	11.3	19.3	-8.0	**1.5**	0.6
37	185.5	1.855	21.1	19.5	1.6	156.3	1.563	16.9	17.6	-0.7	68.4	0.684	19.1	19.4	-0.4	185.5	1.855	18.5	20.0	-1.5	**1.5**	0.6
38	185.5	1.855	21.1	19.5	1.6	156.3	1.563	17.1	17.8	-0.7	68.4	0.684	19.3	19.4	-0.1	185.5	1.855	18.0	19.9	-2.0	**1.5**	0.6
39	185.5	1.855	21.1	19.5	1.6	151.4	1.514	17.1	17.8	-0.7	63.5	0.635	19.2	19.4	-0.2	185.5	1.855	20.8	20.1	0.7	**1.5**	0.6
40	185.5	1.855	21.1	19.4	1.7	151.4	1.514	17.4	18.1	-0.7	63.5	0.635	19.2	19.4	-0.2	185.5	1.855	19.7	19.9	-0.2	**1.5**	0.6

Table A.1-9 continued...

41	185.5	1.855	21.1	19.5	1.6	151.4	1.514	17.6	18.3	-0.7	63.5	0.635	19.2	19.4	-0.2	180.7	1.807	18.4	19.5	-1.1	**1.5**	0.6
42	180.7	1.807	21.1	19.7	1.4	151.4	1.514	17.3	18.2	-0.9	58.6	0.586	19.1	19.3	-0.2	180.7	1.807	20.5	19.3	1.2	**1.4**	0.6
43	180.7	1.807	21.0	19.7	1.3	151.4	1.514	17.6	18.2	-0.6	58.6	0.586	19.2	19.3	-0.1	180.7	1.807	19.8	19.3	0.5	**1.4**	0.6
44	180.7	1.807	21.1	19.5	1.6	151.4	1.514	17.5	18.5	-1.0	53.7	0.537	19.4	19.5	-0.1	180.7	1.807	19.3	19.3	0.0	**1.4**	0.6
45	180.7	1.807	21.0	19.5	1.4	146.5	1.465	17.8	18.4	-0.6	53.7	0.537	19.2	19.3	-0.1	180.7	1.807	20.1	19.5	0.6	**1.4**	0.6
46	175.8	1.758	21.0	19.5	1.4	146.5	1.465	17.7	18.4	-0.7	53.7	0.537	19.2	19.3	-0.1	175.8	1.758	18.1	20.1	-2.0	**1.4**	0.6
47	175.8	1.758	21.1	19.5	1.6	146.5	1.465	17.7	18.3	-0.6	48.8	0.488	19.2	19.3	-0.1	175.8	1.758	19.2	19.9	-0.7	**1.4**	0.6
48	175.8	1.758	21.1	19.5	1.6	146.5	1.465	17.7	18.3	-0.6	48.8	0.488	19.4	19.4	0.0	175.8	1.758	17.8	19.6	-1.7	**1.4**	0.6
49	175.8	1.758	21.2	19.6	1.6	141.6	1.416	17.7	18.5	-0.7	48.8	0.488	19.4	19.5	-0.1	175.8	1.758	20.0	19.5	0.5	**1.4**	0.6
50	175.8	1.758	21.2	19.7	1.4	141.6	1.416	17.8	18.5	-0.6	43.9	0.439	19.0	19.5	-0.5	175.8	1.758	17.8	19.1	-1.3	**1.3**	0.6
51	175.8	1.758	21.2	19.6	1.6	141.6	1.416	17.8	18.5	-0.6	43.9	0.439	19.3	19.5	-0.2	175.8	1.758	18.1	19.5	-1.3	**1.3**	0.6
52	170.9	1.709	21.2	19.6	1.6	141.6	1.416	17.9	18.6	-0.7	43.9	0.439	19.3	19.5	-0.2	170.9	1.709	19.4	19.5	-0.1	**1.3**	0.6
53	170.9	1.709	21.2	19.6	1.6	136.7	1.367	17.8	18.5	-0.7	39.1	0.391	19.4	19.5	-0.1	170.9	1.709	18.1	19.7	-1.6	**1.3**	0.6
54	170.9	1.709	21.3	19.6	1.7	136.7	1.367	18.0	18.4	-0.4	39.1	0.391	19.4	19.5	-0.1	170.9	1.709	18.9	19.9	-1.0	**1.3**	0.6
55	170.9	1.709	21.2	19.6	1.6	136.7	1.367	18.0	18.5	-0.5	39.1	0.391	19.5	19.5	0.0	170.9	1.709	18.9	19.8	-0.9	**1.3**	0.6
56	166.0	1.660	21.2	19.7	1.4	131.8	1.318	18.0	18.5	-0.5	39.1	0.391	19.4	19.5	-0.1	170.9	1.709	20.9	19.4	1.5	**1.3**	0.6
57	166.0	1.660	21.0	19.6	1.4	131.8	1.318	18.1	18.8	-0.7	34.2	0.342	19.4	19.5	-0.1	166.0	1.660	20.6	19.5	1.1	**1.2**	0.6
58	166.0	1.660	21.2	19.6	1.6	131.8	1.318	18.1	18.7	-0.6	34.2	0.342	19.2	19.5	-0.4	166.0	1.660	20.9	19.5	1.5	**1.2**	0.6
59	166.0	1.660	21.2	19.7	1.4	131.8	1.318	17.9	18.7	-0.7	34.2	0.342	19.3	19.4	-0.1	166.0	1.660	20.8	19.4	1.3	**1.2**	0.6
60	166.0	1.660	21.0	19.6	1.4	127.0	1.270	18.4	18.9	-0.5	34.2	0.342	19.4	19.5	-0.1	166.0	1.660	18.0	19.6	-1.6	**1.2**	0.6
61	166.0	1.660	21.0	19.6	1.4	127.0	1.270	18.4	18.7	-0.4	29.3	0.293	19.3	19.4	-0.1	166.0	1.660	20.2	19.8	0.5	**1.2**	0.6
62	161.1	1.611	21.2	19.6	1.6	127.0	1.270	18.4	18.6	-0.2	29.3	0.293	19.2	19.4	-0.2	166.0	1.660	20.3	20.1	0.2	**1.2**	0.6
63	161.1	1.611	21.2	19.6	1.6	122.1	1.221	18.4	18.6	-0.2	29.3	0.293	19.4	19.4	0.0	166.0	1.660	18.0	19.6	-1.6	**1.2**	0.6
64	161.1	1.611	21.0	19.6	1.4	122.1	1.221	18.5	18.6	-0.1	29.3	0.293	19.4	19.4	0.0	161.1	1.611	18.8	19.3	-0.5	**1.2**	0.6
65	161.1	1.611	21.2	19.5	1.7	122.1	1.221	18.2	18.7	-0.5	24.4	0.244	19.3	19.4	-0.1	161.1	1.611	17.8	19.2	-1.3	**1.2**	0.6
66	156.3	1.563	21.2	19.6	1.6	117.2	1.172	18.2	18.6	-0.4	24.4	0.244	19.4	19.4	0.0	161.1	1.611	17.7	19.3	-1.6	**1.1**	0.6
67	156.3	1.563	21.2	19.5	1.7	117.2	1.172	18.4	18.6	-0.2	24.4	0.244	19.3	19.4	-0.1	161.1	1.611	20.8	19.7	1.1	**1.1**	0.6
68	156.3	1.563	21.3	19.6	1.7	117.2	1.172	18.4	18.7	-0.4	24.4	0.244	19.3	19.4	-0.1	161.1	1.611	17.9	20.0	-2.1	**1.1**	0.6
69	156.3	1.563	21.2	19.6	1.6	117.2	1.172	18.7	18.8	-0.1	24.4	0.244	19.3	19.4	-0.1	161.1	1.611	20.4	19.9	0.5	**1.1**	0.6
70	156.3	1.563	21.3	19.6	1.7	112.3	1.123	18.5	18.8	-0.2	19.5	0.195	19.6	19.6	0.0	156.3	1.563	18.3	19.9	-1.6	**1.1**	0.6
71	156.3	1.563	21.2	19.6	1.6	112.3	1.123	18.5	18.8	-0.2	19.5	0.195	19.2	19.4	-0.2	156.3	1.563	18.8	19.4	-0.6	**1.1**	0.6
72	151.4	1.514	21.3	19.6	1.7	107.4	1.074	18.7	18.8	-0.1	19.5	0.195	19.3	19.4	-0.1	156.3	1.563	19.3	19.2	0.1	**1.1**	0.6
73	151.4	1.514	21.2	19.8	1.4	107.4	1.074	18.5	18.7	-0.1	19.5	0.195	19.3	19.4	-0.1	156.3	1.563	20.1	19.4	0.7	**1.1**	0.6
74	151.4	1.514	21.2	19.6	1.6	107.4	1.074	18.5	18.8	-0.2	19.5	0.195	19.2	19.4	-0.2	156.3	1.563	19.1	19.5	-0.4	**1.1**	0.6
75	151.4	1.514	21.2	19.6	1.6	102.5	1.025	18.5	18.8	-0.2	19.5	0.195	19.3	19.4	-0.1	151.4	1.514	19.5	19.7	-0.2	**1.1**	0.6
76	151.4	1.514	21.2	19.5	1.7	102.5	1.025	18.5	18.8	-0.2	19.5	0.195	19.2	19.6	-0.4	151.4	1.514	20.7	20.1	0.6	**1.1**	0.6
77	151.4	1.514	21.2	19.6	1.6	102.5	1.025	18.6	18.6	0.0	14.6	0.146	19.4	19.4	0.0	151.4	1.514	19.0	20.1	-1.1	**1.0**	0.6
78	146.5	1.465	21.3	19.7	1.6	97.7	0.977	18.5	18.5	0.0	14.6	0.146	19.4	19.4	0.0	151.4	1.514	18.1	19.8	-1.7	**1.0**	0.6
79	146.5	1.465	21.3	19.8	1.4	97.7	0.977	18.8	18.7	0.1	14.6	0.146	19.5	19.7	-0.2	151.4	1.514	19.1	19.7	-0.6	**1.0**	0.6
80	146.5	1.465	21.1	19.6	1.4	92.8	0.928	18.7	18.5	0.2	14.6	0.146	19.5	19.6	-0.1	151.4	1.514	20.9	19.5	1.5	**1.0**	0.6
81	146.5	1.465	21.4	19.7	1.7	92.8	0.928	18.6	18.6	0.0	14.6	0.146	19.5	19.6	-0.1	146.5	1.465	17.9	19.4	-1.5	**1.0**	0.6
82	146.5	1.465	21.4	19.7	1.7	92.8	0.928	18.6	18.6	0.0	14.6	0.146	19.6	19.6	0.0	146.5	1.465	19.5	19.5	0.0	**1.0**	0.6
83	146.5	1.465	21.3	19.8	1.4	87.9	0.879	18.6	18.5	0.1	14.6	0.146	19.3	19.6	-0.2	146.5	1.465	19.8	19.4	0.4	**1.0**	0.6
84	141.6	1.416	21.4	19.7	1.7	87.9	0.879	18.4	18.4	0.0	9.8	0.098	19.5	19.6	-0.1	146.5	1.465	21.2	19.7	1.6	**1.0**	0.6
85	141.6	1.416	21.4	19.7	1.7	87.9	0.879	18.6	18.4	0.1	9.8	0.098	19.5	19.5	0.0	146.5	1.465	18.0	19.7	-1.7	**1.0**	0.6
86	141.6	1.416	21.3	19.7	1.6	83.0	0.830	18.6	18.4	0.1	9.8	0.098	19.5	19.6	-0.1	141.6	1.416	19.4	19.9	-0.5	**0.9**	0.6
87	141.6	1.416	21.3	19.7	1.6	83.0	0.830	18.6	18.4	0.1	9.8	0.098	19.5	19.5	0.0	141.6	1.416	17.9	20.0	-2.1	**0.9**	0.6
88	141.6	1.416	21.4	19.7	1.7	83.0	0.830	18.7	18.6	0.1	9.8	0.098	19.3	19.6	-0.2	141.6	1.416	20.7	19.9	0.8	**0.9**	0.6

Table A.1-9 continued...

89	141.6	1.416	21.4	19.8	1.6	78.1	0.781	18.7	18.4	0.2	9.8	0.098	19.5	19.5	0.0	141.6	1.416	19.4	19.7	-0.4	**0.9**	0.6
90	136.7	1.367	21.4	19.7	1.7	78.1	0.781	18.6	18.4	0.1	9.8	0.098	19.3	19.3	0.0	141.6	1.416	18.5	19.6	-1.1	**0.9**	0.6
91	136.7	1.367	21.4	19.7	1.7	78.1	0.781	18.4	18.4	0.0	9.8	0.098	19.2	19.5	-0.2	141.6	1.416	20.9	19.5	1.5	**0.9**	0.6
92	136.7	1.367	21.3	19.8	1.4	73.2	0.732	18.4	18.3	0.1	4.9	0.049	19.2	19.6	-0.4	141.6	1.416	17.6	19.4	-1.7	**0.9**	0.6
93	136.7	1.367	21.4	19.7	1.7	73.2	0.732	18.4	18.3	0.1	4.9	0.049	19.5	19.5	0.0	141.6	1.416	18.0	19.2	-1.2	**0.9**	0.6
94	136.7	1.367	21.3	19.7	1.6	73.2	0.732	18.4	18.4	0.0	4.9	0.049	19.6	19.8	-0.1	136.7	1.367	20.9	19.4	1.5	**0.9**	0.6
95	136.7	1.367	21.1	19.7	1.4	68.4	0.684	18.5	18.4	0.1	4.9	0.049	19.1	19.5	-0.4	136.7	1.367	20.5	19.4	1.1	**0.9**	0.6
96	136.7	1.367	21.4	19.7	1.7	68.4	0.684	18.4	18.3	0.1	4.9	0.049	19.2	19.6	-0.4	136.7	1.367	20.9	19.5	1.3	**0.9**	0.6
97	131.8	1.318	21.3	19.7	1.6	68.4	0.684	18.5	18.4	0.1	4.9	0.049	19.3	19.5	-0.1	136.7	1.367	20.6	19.6	1.0	**0.9**	0.6
98	131.8	1.318	21.3	19.7	1.6	68.4	0.684	18.6	18.4	0.2	4.9	0.049	19.3	19.5	-0.1	136.7	1.367	20.9	20.0	0.8	**0.9**	0.6
99	131.8	1.318	21.3	19.8	1.4	63.5	0.635	18.6	18.5	0.1	4.9	0.049	19.6	19.8	-0.1	136.7	1.367	18.3	19.9	-1.6	**0.8**	0.6
100	131.8	1.318	21.3	19.7	1.6	63.5	0.635	18.6	18.2	0.4	4.9	0.049	19.5	19.6	-0.1	136.7	1.367	20.7	20.0	0.7	**0.8**	0.6
101	131.8	1.318	21.3	19.7	1.6	63.5	0.635	18.5	18.2	0.2						136.7	1.367	21.0	20.1	0.8	**0.8**	0.6
102	131.8	1.318	21.3	19.7	1.6	58.6	0.586	18.5	18.3	0.1						136.7	1.367	20.8	19.9	1.0	**0.8**	0.7
103	127.0	1.270	21.3	19.8	1.4	58.6	0.586	18.5	18.3	0.1						136.7	1.367	18.0	19.7	-1.7	**0.8**	0.6
104	127.0	1.270	21.3	19.7	1.6	58.6	0.586	18.6	18.5	0.1						136.7	1.367	19.7	19.6	0.1	**0.8**	0.6
105	127.0	1.270	21.3	19.7	1.6	58.6	0.586	18.8	18.5	0.2						136.7	1.367	17.9	19.5	-1.6	**0.8**	0.6
106	127.0	1.270	21.3	19.7	1.6	53.7	0.537	18.6	18.5	0.1						131.8	1.318	19.9	19.5	0.4	**0.8**	0.6
107	127.0	1.270	21.3	19.7	1.6	53.7	0.537	18.3	18.3	0.0						131.8	1.318	19.0	19.4	-0.4	**0.8**	0.6
108	127.0	1.270	21.1	19.7	1.4	53.7	0.537	18.8	18.5	0.2						131.8	1.318	20.9	19.4	1.6	**0.8**	0.6
109	127.0	1.270	21.3	19.7	1.6	53.7	0.537	18.5	18.3	0.1						131.8	1.318	18.1	19.2	-1.1	**0.8**	0.6
110	122.1	1.221	21.3	19.7	1.6	48.8	0.488	18.7	18.3	0.4						131.8	1.318	20.5	19.4	1.1	**0.8**	0.6
111	122.1	1.221	21.3	19.7	1.6	48.8	0.488	18.5	18.3	0.1						131.8	1.318	19.9	19.6	0.2	**0.8**	0.6
112	122.1	1.221	21.4	19.7	1.7	48.8	0.488	18.3	18.3	0.0						127.0	1.270	20.0	19.9	0.1	**0.7**	0.6
113	122.1	1.221	21.3	19.7	1.6	48.8	0.488	18.2	18.3	-0.1						127.0	1.270	19.7	19.9	-0.1	**0.7**	0.6
114	122.1	1.221	21.3	19.7	1.6	43.9	0.439	18.6	18.3	0.2						127.0	1.270	18.0	20.0	-2.0	**0.7**	0.6
115	117.2	1.172	21.3	19.7	1.6	43.9	0.439	18.4	18.2	0.2						127.0	1.270	18.1	19.9	-1.7	**0.7**	0.6
116	117.2	1.172	21.3	19.7	1.6	43.9	0.439	18.4	18.2	0.2						127.0	1.270	19.2	19.7	-0.5	**0.7**	0.6
117	117.2	1.172	21.3	19.7	1.6	43.9	0.439	18.4	18.2	0.2						127.0	1.270	17.8	19.5	-1.7	**0.7**	0.6
118	117.2	1.172	21.3	19.7	1.6	39.1	0.391	18.4	18.3	0.1						127.0	1.270	18.0	19.4	-1.3	**0.7**	0.6
119	117.2	1.172	21.3	19.7	1.6	39.1	0.391	18.6	18.3	0.2						127.0	1.270	19.9	19.2	0.6	**0.7**	0.6
120	117.2	1.172	21.1	19.5	1.6	39.1	0.391	18.5	18.2	0.4						127.0	1.270	17.8	19.2	-1.5	**0.7**	0.6
121	117.2	1.172	20.9	19.6	1.3	39.1	0.391	18.4	18.3	0.1						127.0	1.270	19.7	19.1	0.6	**0.7**	0.6
122	112.3	1.123	21.2	19.8	1.4	39.1	0.391	18.4	18.2	0.2						127.0	1.270	19.5	19.4	0.1	**0.7**	0.6
123	107.4	1.074	21.4	19.9	1.4	39.1	0.391	18.5	18.3	0.2						122.1	1.221	20.7	19.4	1.3	**0.7**	0.6
124	107.4	1.074	21.4	19.6	1.8	34.2	0.342	18.4	18.2	0.2						122.1	1.221	19.4	19.6	-0.2	**0.7**	0.6
125	107.4	1.074	21.3	19.8	1.4	34.2	0.342	18.4	18.3	0.1						122.1	1.221	19.7	19.9	-0.2	**0.7**	0.6
126	107.4	1.074	21.4	19.9	1.4	34.2	0.342	18.5	18.2	0.4						122.1	1.221	19.3	20.0	-0.7	**0.7**	0.6
127	107.4	1.074	21.3	19.6	1.7	34.2	0.342	18.4	18.1	0.2						122.1	1.221	18.4	20.0	-1.6	**0.7**	0.6
128	107.4	1.074	21.3	19.6	1.7	34.2	0.342	18.4	18.1	0.2						122.1	1.221	18.8	20.2	-1.5	**0.7**	0.6
129	107.4	1.074	21.3	19.6	1.7	29.3	0.293	18.3	17.9	0.4						117.2	1.172	20.6	20.1	0.5	**0.6**	0.6
130	102.5	1.025	21.3	19.7	1.6	29.3	0.293	18.3	18.1	0.2						117.2	1.172	17.7	20.1	-2.3	**0.6**	0.6
131	102.5	1.025	21.3	19.7	1.6	29.3	0.293	18.5	18.2	0.2						117.2	1.172	20.7	19.7	1.0	**0.6**	0.6
132	102.5	1.025	21.1	19.7	1.4	29.3	0.293	18.5	18.1	0.4						117.2	1.172	18.8	19.4	-0.6	**0.6**	0.6
133	102.5	1.025	21.1	19.7	1.4	29.3	0.293	18.5	18.1	0.4						117.2	1.172	18.0	19.3	-1.2	**0.6**	0.6
134	102.5	1.025	21.1	19.7	1.4	29.3	0.293	18.2	17.9	0.2						117.2	1.172	18.0	19.1	-1.1	**0.6**	0.6
135	97.7	0.977	21.1	19.7	1.4	24.4	0.244	18.4	18.0	0.4						117.2	1.172	17.8	19.0	-1.2	**0.6**	0.6
136	97.7	0.977	21.1	19.6	1.6	24.4	0.244	18.3	17.9	0.4						117.2	1.172	19.3	19.1	0.1	**0.6**	0.6

Table A.1-9 continued...

137	97.7	0.977	21.1	19.7	1.4	24.4	0.244	18.4	17.9	0.5
138	97.7	0.977	21.1	19.7	1.4	24.4	0.244	18.2	18.1	0.1
139	97.7	0.977	21.1	19.6	1.6	19.5	0.195	18.2	18.1	0.1
140	97.7	0.977	21.1	19.6	1.6	19.5	0.195	18.2	18.1	0.1
141	97.7	0.977	21.3	19.6	1.7	19.5	0.195	18.4	18.2	0.2
142	97.7	0.977	21.1	19.6	1.6	19.5	0.195	18.3	18.1	0.2
143	92.8	0.928	21.1	19.6	1.6	19.5	0.195	18.3	18.1	0.2
144	92.8	0.928	21.1	19.7	1.4	19.5	0.195	18.3	18.1	0.2
145	92.8	0.928	21.1	19.6	1.6	14.6	0.146	18.3	17.9	0.4
146	92.8	0.928	21.1	19.6	1.6	14.6	0.146	18.3	18.1	0.2
147	92.8	0.928	21.1	19.7	1.4	14.6	0.146	18.3	17.9	0.4
148	92.8	0.928	21.1	19.4	1.7	14.6	0.146	18.4	18.2	0.1
149	92.8	0.928	21.1	19.7	1.4	14.6	0.146	18.1	18.1	0.0
150	87.9	0.879	21.1	19.6	1.6	14.6	0.146	18.1	17.9	0.1
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112.3	1.123	18.4	19.1	-0.7	**0.6**	0.5
112.3	1.123	17.8	19.1	-1.3	**0.6**	0.5
112.3	1.123	18.9	19.3	-0.4	**0.6**	0.6
112.3	1.123	19.1	19.3	-0.1	**0.6**	0.6
112.3	1.123	19.4	19.5	-0.1	**0.6**	0.6
112.3	1.123	17.7	19.6	-2.0	**0.6**	0.6
112.3	1.123	21.0	19.9	1.1	**0.6**	0.5
112.3	1.123	18.2	19.9	-1.7	**0.6**	0.5
107.4	1.074	19.5	19.8	-0.2	**0.5**	0.5
107.4	1.074	20.0	19.6	0.4	**0.5**	0.5
107.4	1.074	20.8	19.6	1.2	**0.5**	0.5
107.4	1.074	20.4	19.5	0.9	**0.5**	0.5
107.4	1.074	20.8	19.4	1.5	**0.5**	0.5
107.4	1.074	21.1	19.3	1.8	**0.5**	0.5
102.5	1.025	20.4	19.3	1.1	**0.3**	0.5
102.5	1.025	17.9	19.3	-1.3	**0.3**	0.5
102.5	1.025	19.1	19.1	0.0	**0.3**	0.5
102.5	1.025	18.7	19.1	-0.5	**0.3**	0.5
107.4	1.074	20.1	19.1	1.0	**0.3**	0.5
107.4	1.074	18.9	19.1	-0.2	**0.3**	0.5
107.4	1.074	21.0	19.3	1.7	**0.3**	0.5
102.5	1.025	19.0	19.3	-0.2	**0.3**	0.5
107.4	1.074	19.4	19.6	-0.1	**0.3**	0.5
107.4	1.074	18.8	19.3	-0.5	**0.3**	0.5
102.5	1.025	20.7	19.6	1.1	**0.3**	0.5
102.5	1.025	18.9	19.8	-0.9	**0.3**	0.5
102.5	1.025	20.5	19.6	0.8	**0.3**	0.5
102.5	1.025	19.8	19.5	0.2	**0.3**	0.5
102.5	1.025	18.5	19.5	-1.0	**0.3**	0.5
102.5	1.025	18.2	19.5	-1.3	**0.3**	0.5
102.5	1.025	20.2	19.6	0.6	**0.3**	0.5
102.5	1.025	19.6	19.6	0.0	**0.3**	0.5
102.5	1.025	18.0	19.5	-1.5	**0.3**	0.5
102.5	1.025	18.2	19.4	-1.2	**0.3**	0.5
102.5	1.025	20.9	19.4	1.5	**0.3**	0.5
102.5	1.025	19.2	19.3	-0.1	**0.3**	0.5
97.7	0.977	20.6	19.1	1.5	**0.2**	0.5
97.7	0.977	18.0	19.1	-1.1	**0.2**	0.5
97.7	0.977	19.3	19.3	0.0	**0.2**	0.5
97.7	0.977	18.1	19.7	-1.6	**0.2**	0.5
97.7	0.977	18.1	19.9	-1.8	**0.2**	0.5
92.8	0.928	18.3	20.0	-1.7	**0.2**	0.5
92.8	0.928	17.9	19.4	-1.5	**0.2**	0.5
92.8	0.928	20.7	19.7	1.0	**0.2**	0.5
92.8	0.928	19.8	19.7	0.1	**0.2**	0.5
92.8	0.928	19.1	19.6	-0.5	**0.2**	0.5
92.8	0.928	18.9	19.5	-0.6	**0.2**	0.5
92.8	0.928	18.3	19.4	-1.1	**0.2**	0.5

Table A.2-1 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was filled with wheat (11.8% m.c.) and no carbon dioxide was added.

Sample No.	G21-0					G22-0					G23-0					G24-0					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.3	20.6	0.7	253.9	2.539	18.9	18.4	0.5	253.9	2.539	21.1	20.0	1.1	253.9	2.539	24.9	24.1	0.8	2.5	0.0
1	249.0	2.490	21.3	20.4	0.8	180.7	1.807	18.8	18.5	0.2	253.9	2.539	21.1	20.0	1.1	253.9	2.539	24.8	23.9	0.8	2.3	0.4
2	239.3	2.393	21.3	20.7	0.6	122.1	1.221	18.8	18.5	0.2	253.9	2.539	21.1	20.0	1.1	253.9	2.539	24.8	24.1	0.7	2.2	0.6
3	229.5	2.295	21.2	20.6	0.6	78.1	0.781	18.9	18.5	0.4	253.9	2.539	21.1	19.9	1.2	253.9	2.539	24.8	24.1	0.7	2.0	0.8
4	224.6	2.246	21.0	20.5	0.5	53.7	0.537	18.2	13.7	4.5	249.0	2.490	21.0	19.9	1.1	253.9	2.539	24.8	23.9	0.8	2.0	1.0
5	214.8	2.148	21.2	20.5	0.7	48.8	0.488	18.9	18.5	0.4	249.0	2.490	21.1	20.0	1.1	253.9	2.539	24.7	23.9	0.7	1.9	1.0
6	205.1	2.051	21.1	20.5	0.6	39.1	0.391	18.7	14.0	4.7	249.0	2.490	21.0	19.9	1.1	253.9	2.539	24.7	23.9	0.7	1.9	1.0
7	200.2	2.002	21.1	20.5	0.6						249.0	2.490	21.0	19.9	1.1	249.0	2.490	24.7	23.9	0.7	1.7	1.2
8	195.3	1.953	21.1	20.5	0.6						249.0	2.490	21.0	19.9	1.1	249.0	2.490	24.7	24.1	0.6	1.7	1.2
9	190.4	1.904	21.1	20.5	0.6						249.0	2.490	21.0	19.9	1.1	249.0	2.490	24.7	24.0	0.7	1.7	1.2
10	180.7	1.807	21.3	20.6	0.7						249.0	2.490	21.0	19.8	1.2	253.9	2.539	24.7	22.9	1.8	1.7	1.2
11	170.9	1.709	21.2	20.6	0.6						249.0	2.490	21.0	20.1	1.0	253.9	2.539	24.7	23.3	1.4	1.7	1.2
12	166.0	1.660	21.2	20.6	0.6						249.0	2.490	21.0	20.1	1.0	253.9	2.539	24.7	23.4	1.3	1.7	1.2
13	161.1	1.611	21.2	20.8	0.5						249.0	2.490	21.0	20.1	1.0	253.9	2.539	24.7	23.4	1.3	1.7	1.2
14	151.4	1.514	21.2	20.8	0.5						249.0	2.490	21.0	20.1	1.0	253.9	2.539	24.6	23.5	1.1	1.6	1.2
15	151.4	1.514	21.2	20.6	0.6						249.0	2.490	21.0	20.1	1.0	253.9	2.539	24.6	23.6	1.0	1.6	1.2
16	141.6	1.416	21.2	20.6	0.6						249.0	2.490	21.0	20.1	1.0	249.0	2.490	24.7	23.8	1.0	1.6	1.2
17	136.7	1.367	21.3	20.7	0.6						249.0	2.490	21.0	20.1	1.0	249.0	2.490	24.6	23.8	0.8	1.6	1.2
18	131.8	1.318	21.3	20.7	0.6						249.0	2.490	21.0	20.1	1.0	249.0	2.490	24.6	23.6	1.0	1.6	1.2
19	127.0	1.270	21.2	20.7	0.5						249.0	2.490	20.9	19.9	1.0	249.0	2.490	24.8	24.0	0.7	1.6	1.2
20	122.1	1.221	21.2	20.7	0.5						249.0	2.490	20.9	19.9	1.0	244.1	2.441	24.6	23.8	0.8	1.5	1.2
21	117.2	1.172	21.0	20.6	0.5						244.1	2.441	20.9	19.9	1.0	244.1	2.441	24.8	24.0	0.7	1.5	1.2
22	112.3	1.123	21.3	21.0	0.4						244.1	2.441	20.9	19.9	1.0	244.1	2.441	24.6	23.8	0.8	1.5	1.2
23	112.3	1.123	21.3	20.8	0.5						244.1	2.441	20.9	19.9	1.0	244.1	2.441	24.6	23.8	0.8	1.5	1.2
24	107.4	1.074	21.3	20.6	0.7						244.1	2.441	20.8	19.9	1.0	244.1	2.441	24.6	24.0	0.6	1.5	1.2
25	97.7	0.977	21.3	20.4	0.8						244.1	2.441	21.0	20.0	1.0	239.3	2.393	24.6	24.0	0.6	1.5	1.2
26	92.8	0.928	21.3	20.7	0.6						244.1	2.441	21.0	20.0	1.0	239.3	2.393	24.6	24.0	0.6	1.4	1.2
27	87.9	0.879	21.2	20.6	0.6						244.1	2.441	20.9	20.0	0.8	239.3	2.393	24.8	24.1	0.7	1.4	1.2
28	83.0	0.830	21.0	20.5	0.5						244.1	2.441	21.0	19.9	1.1	239.3	2.393	24.8	24.1	0.7	1.4	1.2
29	78.1	0.781	21.2	20.5	0.7						244.1	2.441	21.0	20.1	1.0	239.3	2.393	24.8	24.2	0.6	1.4	1.2
30	73.2	0.732	21.1	20.5	0.6						244.1	2.441	21.0	20.1	1.0	239.3	2.393	24.7	24.2	0.5	1.4	1.2
31	73.2	0.732	21.1	20.5	0.6						244.1	2.441	21.0	19.9	1.1	234.4	2.344	24.8	24.1	0.7	1.4	1.2
32	68.4	0.684	21.1	20.5	0.6						244.1	2.441	20.9	19.9	1.0	234.4	2.344	24.8	24.1	0.7	1.4	1.2
33	63.5	0.635	21.1	20.5	0.6						244.1	2.441	21.0	19.9	1.1	234.4	2.344	24.8	24.2	0.6	1.4	1.2
34	58.6	0.586	21.3	20.6	0.7						244.1	2.441	20.9	19.9	1.0	234.4	2.344	24.8	24.1	0.7	1.3	1.2
35	53.7	0.537	21.2	20.6	0.6						239.3	2.393	20.9	19.9	1.0	234.4	2.344	24.8	24.0	0.8	1.3	1.2
36	53.7	0.537	21.2	20.6	0.6						239.3	2.393	20.9	19.9	1.0	234.4	2.344	24.7	24.1	0.6	1.3	1.2
37	39.1	0.391	21.2	20.8	0.5						239.3	2.393	20.9	19.9	1.0	229.5	2.295	24.7	24.0	0.7	1.3	1.3
38	39.1	0.391	21.2	20.8	0.5						239.3	2.393	20.9	19.9	1.0	229.5	2.295	24.7	24.0	0.7	1.3	1.3
39	34.2	0.342	21.2	20.6	0.6						239.3	2.393	20.9	19.8	1.1	229.5	2.295	24.7	24.1	0.6	1.3	1.3
40	34.2	0.342	21.2	20.6	0.6						234.4	2.344	20.9	19.9	1.0	229.5	2.295	24.7	24.1	0.6	1.2	1.2
41	29.3	0.293	21.3	20.7	0.6						234.4	2.344	20.9	19.8	1.1	229.5	2.295	24.7	24.0	0.7	1.2	1.3
42	29.3	0.293	21.3	20.7	0.6						234.4	2.344	20.7	19.9	0.8	229.5	2.295	24.6	24.0	0.6	1.2	1.3
43	29.3	0.293	21.2	20.7	0.5						234.4	2.344	20.9	19.8	1.1	229.5	2.295	24.7	24.0	0.7	1.2	1.3
44	24.4	0.244	21.2	20.7	0.5						234.4	2.344	20.9	19.9	1.0	224.6	2.246	24.7	24.0	0.7	1.2	1.3
45	24.4	0.244	21.0	20.6	0.5						234.4	2.344	20.9	19.9	1.0	224.6	2.246	24.6	24.0	0.6	1.2	1.3

Table A.2-1 continued...

46	24.4	0.244	21.3	21.0	0.4
47	24.4	0.244	21.3	20.8	0.5
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229.5	2.295	20.9	19.9	1.0	224.6	2.246	24.6	24.0	0.6	1.2	1.2
229.5	2.295	20.7	19.9	0.8	224.6	2.246	24.6	24.0	0.6	1.2	1.2
229.5	2.295	20.7	20.0	0.7	224.6	2.246	24.6	24.0	0.6	1.1	1.3
229.5	2.295	20.9	19.9	1.0	224.6	2.246	24.6	24.0	0.6	1.1	1.3
229.5	2.295	20.9	20.1	0.8	224.6	2.246	24.6	24.0	0.6	1.1	1.3
229.5	2.295	20.9	20.1	0.8	219.7	2.197	24.7	24.1	0.6	1.1	1.3
229.5	2.295	20.7	19.9	0.8	219.7	2.197	24.7	24.1	0.6	1.1	1.3
224.6	2.246	20.9	20.1	0.8	219.7	2.197	24.7	24.1	0.6	1.1	1.3
224.6	2.246	20.9	20.1	0.8	219.7	2.197	24.7	24.1	0.6	1.1	1.3
224.6	2.246	20.9	20.1	0.8	219.7	2.197	24.6	24.0	0.6	1.1	1.3
224.6	2.246	20.9	20.1	0.8	219.7	2.197	24.6	24.0	0.6	1.1	1.3
224.6	2.246	20.9	20.1	0.8	219.7	2.197	24.7	24.1	0.6	1.1	1.3
224.6	2.246	20.8	20.1	0.7	219.7	2.197	24.6	23.9	0.7	1.1	1.3
219.7	2.197	20.8	20.1	0.7	219.7	2.197	24.6	24.0	0.6	1.1	1.3
224.6	2.246	20.6	19.9	0.7	214.8	2.148	24.6	24.1	0.5	1.1	1.3
219.7	2.197	20.8	20.2	0.6	214.8	2.148	24.6	24.1	0.5	1.1	1.3
219.7	2.197	20.8	20.0	0.8	214.8	2.148	24.6	24.0	0.6	1.1	1.3
219.7	2.197	20.8	20.1	0.7	214.8	2.148	24.6	24.0	0.6	1.1	1.3
219.7	2.197	21.0	20.2	0.7	214.8	2.148	24.6	24.1	0.5	1.1	1.3
219.7	2.197	21.0	20.2	0.7	214.8	2.148	24.6	24.0	0.6	1.1	1.3
219.7	2.197	20.8	20.2	0.6	214.8	2.148	24.6	24.0	0.6	1.1	1.3
219.7	2.197	20.8	20.1	0.7	214.8	2.148	24.8	24.2	0.6	1.1	1.3
219.7	2.197	20.8	20.1	0.7	214.8	2.148	24.8	24.2	0.6	1.1	1.3
214.8	2.148	20.8	20.1	0.7	214.8	2.148	24.8	24.2	0.6	1.1	1.2
214.8	2.148	20.8	20.1	0.7	210.0	2.100	24.8	24.2	0.6	1.1	1.2
214.8	2.148	21.0	20.2	0.7	210.0	2.100	24.8	24.2	0.6	1.1	1.2
214.8	2.148	20.8	20.1	0.7	210.0	2.100	24.8	24.1	0.7	1.1	1.2
214.8	2.148	20.8	20.1	0.7	210.0	2.100	24.8	24.1	0.7	1.1	1.2
214.8	2.148	20.8	20.1	0.7	210.0	2.100	24.8	24.2	0.6	1.1	1.2
214.8	2.148	20.8	20.2	0.6	210.0	2.100	24.7	24.1	0.6	1.1	1.2
214.8	2.148	20.8	20.2	0.6	210.0	2.100	24.8	24.2	0.6	1.1	1.2
214.8	2.148	20.8	20.1	0.7	205.1	2.051	24.8	24.2	0.6	1.0	1.2
214.8	2.148	20.8	20.1	0.7	205.1	2.051	24.7	24.1	0.6	1.0	1.2
214.8	2.148	20.8	20.2	0.6	205.1	2.051	24.7	24.3	0.4	1.0	1.2
214.8	2.148	20.8	20.1	0.7	205.1	2.051	24.7	24.2	0.5	1.0	1.2
214.8	2.148	20.8	20.2	0.6	205.1	2.051	24.7	24.2	0.5	1.0	1.2
214.8	2.148	20.8	20.2	0.6	205.1	2.051	24.7	24.2	0.5	1.0	1.2
214.8	2.148	20.8	20.1	0.7	205.1	2.051	24.7	24.2	0.5	1.0	1.2
214.8	2.148	20.8	20.2	0.6	205.1	2.051	24.7	24.2	0.5	1.0	1.2
214.8	2.148	20.8	20.1	0.7	205.1	2.051	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.8	20.2	0.6	205.1	2.051	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.8	20.2	0.6	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	21.0	20.3	0.7	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.9	20.3	0.6	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	21.1	20.6	0.5	200.2	2.002	24.6	24.2	0.4	1.0	1.2
210.0	2.100	21.1	20.5	0.6	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.9	20.3	0.6	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.9	20.3	0.6	200.2	2.002	24.7	24.2	0.5	1.0	1.2
210.0	2.100	20.7	20.2	0.5	200.2	2.002	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.9	20.4	0.5	200.2	2.002	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.9	20.3	0.6	200.2	2.002	24.7	24.1	0.6	1.0	1.2
205.1	2.051	20.7	20.2	0.5	200.2	2.002	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.9	20.3	0.6	195.3	1.953	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.8	20.3	0.5	195.3	1.953	24.7	24.1	0.6	1.0	1.2

Table A.2-1 continued...

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205.1	2.051	20.9	20.5	0.5	195.3	1.953	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.9	20.5	0.5	195.3	1.953	24.7	24.2	0.5	1.0	1.2
205.1	2.051	20.9	20.3	0.6	195.3	1.953	24.6	24.2	0.4	1.0	1.2
205.1	2.051	20.9	20.3	0.6	195.3	1.953	24.6	24.1	0.5	1.0	1.2
205.1	2.051	20.9	20.3	0.6	195.3	1.953	24.6	24.1	0.5	1.0	1.2
205.1	2.051	20.9	20.5	0.5	195.3	1.953	24.6	24.1	0.5	1.0	1.2
205.1	2.051	20.8	20.3	0.5	195.3	1.953	24.6	24.2	0.4	1.0	1.2
205.1	2.051	20.9	20.5	0.5	195.3	1.953	24.6	24.2	0.4	1.0	1.2
205.1	2.051	20.8	20.5	0.4	190.4	1.904	24.6	24.2	0.4	1.0	1.1
200.2	2.002	20.9	20.5	0.5	190.4	1.904	24.7	24.2	0.5	1.0	1.1
200.2	2.002	20.8	20.3	0.5	190.4	1.904	24.6	24.2	0.4	1.0	1.1
205.1	2.051	20.9	20.6	0.4	190.4	1.904	24.7	24.2	0.5	1.0	1.1
200.2	2.002	20.9	20.5	0.5	190.4	1.904	24.6	24.2	0.4	1.0	1.1
200.2	2.002	20.8	20.3	0.5	190.4	1.904	24.6	24.2	0.4	1.0	1.1
200.2	2.002	20.8	20.3	0.5	190.4	1.904	24.6	24.2	0.4	1.0	1.1
200.2	2.002	20.8	20.4	0.4	190.4	1.904	24.7	24.4	0.4	1.0	1.1
200.2	2.002	20.8	20.3	0.5	185.5	1.855	24.7	24.3	0.5	1.0	1.1
200.2	2.002	20.9	20.5	0.5	185.5	1.855	24.7	24.4	0.4	1.0	1.1
200.2	2.002	20.9	20.5	0.5	190.4	1.904	24.7	23.8	1.0	1.0	1.1
200.2	2.002	20.8	20.3	0.5	195.3	1.953	24.6	21.9	2.6	1.0	1.1
200.2	2.002	20.7	20.3	0.4	195.3	1.953	24.5	22.2	2.3	1.0	1.1
200.2	2.002	20.9	20.5	0.5	195.3	1.953	24.5	22.6	1.9	1.0	1.1
200.2	2.002	20.9	20.5	0.5	195.3	1.953	24.7	23.2	1.4	1.0	1.1
200.2	2.002	20.8	20.5	0.4	195.3	1.953	24.7	23.4	1.3	1.0	1.1
200.2	2.002	20.9	20.5	0.5	195.3	1.953	24.7	23.5	1.2	1.0	1.1
200.2	2.002	20.9	20.5	0.5	195.3	1.953	24.7	23.8	1.0	1.0	1.1
200.2	2.002	20.9	20.6	0.4	195.3	1.953	24.7	23.9	0.8	1.0	1.1
195.3	1.953	20.8	20.6	0.2	195.3	1.953	24.9	24.1	0.8	1.0	1.1
195.3	1.953	20.8	20.5	0.4	195.3	1.953	24.6	23.8	0.7	1.0	1.1
195.3	1.953	20.8	20.5	0.4	195.3	1.953	24.6	24.0	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	195.3	1.953	24.6	24.0	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	195.3	1.953	24.6	24.0	0.6	1.0	1.1
195.3	1.953	20.8	20.6	0.2	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	190.4	1.904	24.6	24.1	0.5	1.0	1.1
195.3	1.953	20.8	20.6	0.2	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	21.0	20.6	0.4	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	190.4	1.904	24.6	24.1	0.5	1.0	1.1
195.3	1.953	21.0	20.6	0.4	190.4	1.904	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.9	20.6	0.2	185.5	1.855	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.8	20.5	0.4	185.5	1.855	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.9	20.5	0.4	185.5	1.855	24.7	24.3	0.5	1.0	1.1
195.3	1.953	20.8	20.5	0.4	185.5	1.855	24.6	24.1	0.5	1.0	1.1
195.3	1.953	20.9	20.6	0.2	185.5	1.855	24.7	24.1	0.6	1.0	1.1
195.3	1.953	20.7	20.5	0.2	185.5	1.855	24.7	24.3	0.5	1.0	1.1
195.3	1.953	20.8	20.5	0.4	185.5	1.855	24.7	24.3	0.5	1.0	1.1
200.2	2.002	20.7	18.3	2.4	180.7	1.807	24.7	24.3	0.5	1.0	1.1
200.2	2.002	20.7	18.1	2.6	180.7	1.807	24.7	24.3	0.5	1.0	1.1
200.2	2.002	20.7	18.3	2.4	180.7	1.807	24.7	24.4	0.4	1.0	1.1
205.1	2.051	20.8	18.1	2.7	180.7	1.807	24.6	24.2	0.4	1.0	1.1
205.1	2.051	20.7	18.3	2.4	180.7	1.807	24.7	24.3	0.5	1.0	1.1
210.0	2.100	20.7	18.1	2.6	180.7	1.807	24.6	24.1	0.5	1.0	1.1
210.0	2.100	21.0	18.3	2.7	180.7	1.807	24.7	24.3	0.5	1.0	1.1

Table A.2-1 continued...

154	210.0	2.100	20.9	18.1	2.8	180.7	1.807	24.7	24.4	0.4	1.0	1.1
155	210.0	2.100	20.9	18.3	2.6	180.7	1.807	24.6	24.1	0.5	1.0	1.1
156	214.8	2.148	20.7	17.2	3.5	175.8	1.758	24.7	24.4	0.4	1.0	1.1
157	214.8	2.148	20.9	18.3	2.6	175.8	1.758	24.9	24.4	0.5	1.0	1.1
158	214.8	2.148	20.9	17.2	3.7	175.8	1.758	24.6	24.3	0.4	1.0	1.1
159	214.8	2.148	20.7	17.3	3.4	175.8	1.758	24.7	24.3	0.5	1.0	1.1
160	214.8	2.148	20.7	17.1	3.6	175.8	1.758	24.8	24.4	0.4	1.0	1.1
161	214.8	2.148	20.9	17.1	3.8	175.8	1.758	24.9	24.4	0.5	1.0	1.1
162	214.8	2.148	20.7	17.2	3.5	175.8	1.758	24.7	24.3	0.5	1.0	1.1
163	214.8	2.148	20.7	17.3	3.4	175.8	1.758	24.8	24.4	0.4	1.0	1.1
164	219.7	2.197	20.9	17.1	3.8	175.8	1.758	24.7	24.3	0.5	1.0	1.2
165	219.7	2.197	20.7	17.1	3.6	175.8	1.758	24.9	24.4	0.5	1.0	1.2
166	219.7	2.197	20.9	17.2	3.7	175.8	1.758	24.8	24.4	0.4	1.0	1.2
167	219.7	2.197	20.9	17.3	3.6	170.9	1.709	24.8	24.3	0.5	1.0	1.1
168	219.7	2.197	20.8	17.1	3.7	170.9	1.709	24.7	24.4	0.2	1.0	1.1
169	219.7	2.197	20.8	17.1	3.7	170.9	1.709	24.8	24.4	0.4	1.0	1.1
170	219.7	2.197	20.9	17.2	3.7	170.9	1.709	24.8	24.3	0.5	1.0	1.1
171	219.7	2.197	20.9	17.3	3.6	170.9	1.709	24.7	24.3	0.4	1.0	1.1
172	219.7	2.197	20.9	18.3	2.6	170.9	1.709	24.7	24.3	0.4	1.0	1.1
173	214.8	2.148	20.8	18.5	2.3	170.9	1.709	24.7	24.4	0.2	1.0	1.1
174	214.8	2.148	20.9	19.6	1.3	170.9	1.709	24.7	24.3	0.4	1.0	1.1
175	214.8	2.148	20.8	19.6	1.2	170.9	1.709	24.7	24.3	0.4	1.0	1.1
176	214.8	2.148	20.8	19.6	1.2	170.9	1.709	24.7	24.3	0.4	1.0	1.1
177	214.8	2.148	20.8	19.6	1.2	166.0	1.660	24.7	24.3	0.4	1.0	1.1
178	214.8	2.148	20.9	19.6	1.3	166.0	1.660	24.7	24.3	0.4	1.0	1.1
179	214.8	2.148	20.9	19.6	1.3	166.0	1.660	24.7	24.3	0.4	1.0	1.1
180	214.8	2.148	20.8	19.6	1.2	166.0	1.660	24.8	24.5	0.4	1.0	1.1
181	214.8	2.148	21.1	19.6	1.5	166.0	1.660	24.7	24.3	0.4	1.0	1.1
182	210.0	2.100	20.8	20.0	0.8	166.0	1.660	24.8	24.5	0.4	0.9	1.1
183	210.0	2.100	20.9	20.0	0.9	166.0	1.660	24.5	24.3	0.2	0.9	1.1
184	210.0	2.100	20.8	20.0	0.8	166.0	1.660	24.7	24.3	0.4	0.9	1.1
185	210.0	2.100	20.9	20.0	0.9	166.0	1.660	24.7	24.5	0.2	0.9	1.1
186	210.0	2.100	20.9	20.0	0.9	161.1	1.611	24.7	24.5	0.2	0.9	1.1
187	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.4	0.4	0.9	1.1
188	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.5	0.2	0.9	1.1
189	205.1	2.051	20.9	20.3	0.6	161.1	1.611	24.7	24.5	0.2	0.9	1.1
190	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.4	0.4	0.9	1.1
191	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.3	0.4	0.9	1.1
192	205.1	2.051	20.9	20.3	0.6	161.1	1.611	24.5	24.3	0.2	0.9	1.1
193	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.3	0.4	0.9	1.1
194	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.7	24.3	0.4	0.9	1.1
195	205.1	2.051	20.8	20.3	0.5	161.1	1.611	24.8	24.5	0.4	0.9	1.1
196	200.2	2.002	20.8	20.8	0.0	161.1	1.611	24.7	24.5	0.2	0.9	1.1
197	200.2	2.002	20.8	20.8	0.0	161.1	1.611	24.7	24.5	0.2	0.9	1.1
198	200.2	2.002	20.8	20.8	0.0	161.1	1.611	24.7	24.5	0.2	0.9	1.1
199	200.2	2.002	20.8	20.8	0.0	156.3	1.563	24.8	24.5	0.4	0.9	1.0
200	200.2	2.002	20.8	20.7	0.1	156.3	1.563	24.7	24.5	0.2	0.9	1.0
201	200.2	2.002	20.8	20.8	0.0	156.3	1.563	24.7	24.5	0.2	0.9	1.0
202	195.3	1.953	20.8	20.9	-0.1	156.3	1.563	24.7	24.5	0.2	0.9	1.0
203	195.3	1.953	20.8	20.8	0.0	156.3	1.563	24.8	24.5	0.4	0.9	1.0
204	195.3	1.953	20.8	20.8	0.0	156.3	1.563	24.7	24.4	0.4	0.9	1.0
205	195.3	1.953	20.8	20.8	0.0	156.3	1.563	24.9	24.5	0.4	0.9	1.0
206	195.3	1.953	20.8	20.8	0.0	156.3	1.563	24.7	24.5	0.2	0.9	1.0
207	195.3	1.953	20.8	20.9	-0.1	156.3	1.563	24.8	24.6	0.1	0.9	1.0

Table A.2-1 continued...

208											
209	195.3	1.953	20.8	20.9	-0.1	156.3	1.563	24.8	24.4	0.4	0.9	1.0
210	195.3	1.953	20.8	20.8	0.0	156.3	1.563	24.8	24.4	0.4	0.9	1.0
211	190.4	1.904	20.8	20.8	0.0	156.3	1.563	24.6	24.4	0.2	0.9	1.0
212	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.6	24.4	0.2	0.9	1.0
213	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.8	24.5	0.2	0.9	1.0
214	190.4	1.904	20.8	20.9	-0.1	151.4	1.514	24.8	24.5	0.2	0.9	1.0
215	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.8	24.6	0.1	0.9	1.0
216	190.4	1.904	20.8	20.9	-0.1	151.4	1.514	24.8	24.5	0.2	0.9	1.0
217	190.4	1.904	20.8	20.9	-0.1	151.4	1.514	24.8	24.6	0.1	0.9	1.0
218	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.8	24.5	0.2	0.9	1.0
219	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.8	24.5	0.2	0.9	1.0
220	190.4	1.904	20.7	20.8	-0.1	151.4	1.514	24.8	24.5	0.2	0.9	1.0
221	190.4	1.904	20.8	20.8	0.0	151.4	1.514	24.8	24.6	0.1	0.9	1.0
222	185.5	1.855	21.0	21.0	0.0	151.4	1.514	24.8	24.5	0.2	0.8	1.0
223	185.5	1.855	20.8	21.0	-0.1	151.4	1.514	24.8	24.5	0.2	0.8	1.0
224	185.5	1.855	20.8	21.1	-0.2	151.4	1.514	24.8	24.5	0.2	0.8	1.0
225	185.5	1.855	20.7	20.9	-0.2	151.4	1.514	24.8	24.6	0.1	0.8	1.0
226	185.5	1.855	20.7	20.9	-0.2	151.4	1.514	24.8	24.5	0.2	0.8	1.0
227	185.5	1.855	20.8	21.0	-0.1	146.5	1.465	24.8	24.4	0.4	0.8	1.0
228	185.5	1.855	20.8	21.1	-0.2	146.5	1.465	24.8	24.5	0.2	0.8	1.0
229	185.5	1.855	20.8	21.1	-0.2	146.5	1.465	24.8	24.7	0.1	0.8	1.0
230	185.5	1.855	20.8	21.0	-0.1	146.5	1.465	24.6	24.5	0.1	0.8	1.0
231	185.5	1.855	20.8	21.0	-0.1	146.5	1.465	24.8	24.6	0.1	0.8	1.0
232	185.5	1.855	20.7	20.9	-0.2	146.5	1.465	24.8	24.5	0.2	0.8	1.0
233	185.5	1.855	20.7	20.9	-0.2	146.5	1.465	24.8	24.4	0.4	0.8	1.0
234	185.5	1.855	20.7	20.8	-0.1	146.5	1.465	24.6	24.5	0.1	0.8	1.0
235	185.5	1.855	20.7	20.8	-0.1	146.5	1.465	24.8	24.6	0.1	0.8	1.0
236	180.7	1.807	20.7	20.8	-0.1	146.5	1.465	24.8	24.7	0.1	0.8	1.0
237	180.7	1.807	20.7	20.9	-0.2	146.5	1.465	24.8	24.7	0.1	0.8	1.0
238	180.7	1.807	21.0	21.1	-0.1	146.5	1.465	24.6	24.5	0.1	0.8	1.0
239	180.7	1.807	20.7	20.8	-0.1	146.5	1.465	24.6	24.6	0.0	0.8	1.0
240	180.7	1.807	20.7	20.9	-0.2	146.5	1.465	24.8	24.6	0.2	0.8	1.0
241	180.7	1.807	20.7	20.9	-0.2	146.5	1.465	24.6	24.5	0.1	0.8	1.0
242	180.7	1.807	20.7	20.9	-0.2	141.6	1.416	24.6	24.5	0.1	0.8	0.9
243	180.7	1.807	20.7	20.9	-0.2	141.6	1.416	24.6	24.5	0.1	0.8	0.9
244	180.7	1.807	20.8	20.8	0.0	141.6	1.416	24.8	24.5	0.2	0.8	0.9
245	180.7	1.807	20.8	20.9	-0.1	146.5	1.465	24.6	24.4	0.2	0.8	1.0
246	180.7	1.807	20.7	20.8	-0.1	141.6	1.416	24.6	24.4	0.2	0.8	0.9
247	180.7	1.807	20.7	20.9	-0.2	141.6	1.416	24.8	24.4	0.4	0.8	0.9
248	180.7	1.807	20.7	20.9	-0.2	141.6	1.416	24.8	24.5	0.2	0.8	0.9
249	180.7	1.807	20.7	20.8	-0.1	141.6	1.416	24.8	24.6	0.2	0.8	0.9
250	180.7	1.807	20.8	20.3	0.5	141.6	1.416	24.6	24.5	0.1	0.8	0.9
251	180.7	1.807	20.8	20.3	0.5	141.6	1.416	24.6	24.5	0.1	0.8	0.9
252	180.7	1.807	21.0	20.3	0.7	141.6	1.416	24.8	24.7	0.1	0.8	0.9
253	180.7	1.807	21.0	20.5	0.6	141.6	1.416	24.8	24.7	0.1	0.8	0.9
254	180.7	1.807	20.8	20.3	0.6	141.6	1.416	24.8	24.8	0.0	0.8	0.9
255	175.8	1.758	21.0	20.5	0.6	141.6	1.416	24.8	24.7	0.1	0.8	0.9
256	180.7	1.807	21.0	20.5	0.6	141.6	1.416	24.8	24.7	0.1	0.8	0.9
257	180.7	1.807	20.8	20.5	0.4	141.6	1.416	24.6	24.5	0.1	0.8	0.9
258	175.8	1.758	20.8	20.3	0.6	136.7	1.367	24.8	24.8	0.0	0.8	0.9
259	175.8	1.758	20.8	20.6	0.3	136.7	1.367	24.8	24.8	0.0	0.8	0.9
260	175.8	1.758	20.8	20.5	0.4	136.7	1.367	25.0	25.0	0.0	0.8	0.9
261	175.8	1.758	21.0	20.3	0.7	136.7	1.367	25.0	24.7	0.2	0.8	0.9
	175.8	1.758	20.8	20.3	0.6	136.7	1.367	24.9	24.9	0.0	0.8	0.9

Table A.2-1 continued...

262											
263	175.8	1.758	20.8	20.4	0.4	136.7	1.367	24.8	24.7	0.1	0.8	0.9
264	175.8	1.758	20.8	20.3	0.6	136.7	1.367	24.8	24.7	0.1	0.8	0.9
265	175.8	1.758	21.0	20.5	0.6	136.7	1.367	24.8	24.7	0.1	0.8	0.9
266	175.8	1.758	20.8	20.5	0.4	136.7	1.367	24.8	24.7	0.1	0.8	0.9
267	175.8	1.758	20.8	20.3	0.6	136.7	1.367	24.7	24.7	0.0	0.8	0.9
268	175.8	1.758	20.8	20.3	0.6	136.7	1.367	24.9	24.7	0.1	0.8	0.9
269	175.8	1.758	20.7	20.5	0.3	136.7	1.367	24.9	24.7	0.1	0.8	0.9
270	175.8	1.758	21.0	20.5	0.6	136.7	1.367	24.9	24.7	0.1	0.8	0.9
271	175.8	1.758	20.9	20.5	0.4	136.7	1.367	24.7	24.7	0.0	0.8	0.9
272	175.8	1.758	20.9	20.5	0.4	136.7	1.367	24.9	24.9	0.0	0.8	0.9
273	175.8	1.758	20.9	20.5	0.4	136.7	1.367	24.9	24.9	0.0	0.8	0.9
274	170.9	1.709	21.0	20.6	0.4	136.7	1.367	24.9	24.7	0.1	0.8	0.9
275	170.9	1.709	21.2	20.6	0.6	131.8	1.318	25.0	24.9	0.1	0.8	0.9
276	170.9	1.709	21.2	20.5	0.7	136.7	1.367	24.9	24.9	0.0	0.8	0.9
277	170.9	1.709	20.8	20.5	0.4	131.8	1.318	24.7	24.7	0.0	0.8	0.9
278	170.9	1.709	21.0	20.5	0.5	131.8	1.318	24.7	24.7	0.0	0.8	0.9
279	170.9	1.709	21.0	20.5	0.5	131.8	1.318	24.7	24.7	0.0	0.8	0.9
280	170.9	1.709	20.9	20.6	0.4	131.8	1.318	24.7	24.9	-0.1	0.8	0.9
281	170.9	1.709	21.0	20.5	0.5	131.8	1.318	24.7	24.7	0.0	0.8	0.9
282	170.9	1.709	21.0	20.6	0.4	131.8	1.318	24.9	24.9	0.0	0.8	0.9
283	170.9	1.709	20.8	20.5	0.4	131.8	1.318	24.9	24.9	0.0	0.8	0.9
284	170.9	1.709	20.9	20.6	0.3	131.8	1.318	24.9	24.9	0.0	0.8	0.9
285	170.9	1.709	20.8	20.5	0.3	131.8	1.318	24.9	24.9	0.0	0.8	0.9
286	170.9	1.709	20.9	20.5	0.5	131.8	1.318	24.9	24.9	0.0	0.8	0.9
287	170.9	1.709	21.1	20.6	0.5	131.8	1.318	24.9	24.9	0.0	0.8	0.9
288	170.9	1.709	20.9	20.6	0.3	131.8	1.318	24.8	24.9	-0.1	0.8	0.9
289	170.9	1.709	20.9	20.5	0.5	127.0	1.270	24.6	24.7	-0.1	0.7	0.9
290	166.0	1.660	20.9	20.5	0.4	127.0	1.270	24.7	24.7	0.0	0.7	0.9
291	166.0	1.660	20.8	20.5	0.3	127.0	1.270	24.9	24.9	0.0	0.7	0.9
292	166.0	1.660	20.8	20.6	0.1	127.0	1.270	24.7	24.7	0.0	0.7	0.9
293	166.0	1.660	20.9	20.5	0.5	127.0	1.270	24.7	24.7	0.0	0.7	0.9
294	166.0	1.660	20.8	20.5	0.3	127.0	1.270	24.9	24.9	0.0	0.7	0.9
295	166.0	1.660	20.8	20.5	0.3	127.0	1.270	24.9	24.9	0.0	0.7	0.9
296	166.0	1.660	20.9	20.5	0.5	127.0	1.270	24.8	24.9	-0.1	0.7	0.9
297	166.0	1.660	20.9	20.5	0.5	127.0	1.270	25.0	25.1	-0.1	0.7	0.9
298	166.0	1.660	20.9	20.5	0.5	127.0	1.270	24.8	24.9	-0.1	0.7	0.9
299	166.0	1.660	21.1	20.5	0.6	127.0	1.270	24.8	24.8	0.0	0.7	0.9
300	166.0	1.660	20.8	20.5	0.4	127.0	1.270	24.8	24.9	-0.1	0.7	0.9
301	166.0	1.660	21.0	20.6	0.4	127.0	1.270	24.8	24.9	-0.1	0.7	0.9
302	166.0	1.660	21.0	20.6	0.4	127.0	1.270	25.0	25.1	-0.1	0.7	0.9
303	166.0	1.660	21.0	20.6	0.4	127.0	1.270	25.0	25.1	-0.1	0.7	0.9
304	161.1	1.611	21.0	20.5	0.5	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
305	161.1	1.611	20.8	20.6	0.2	122.1	1.221	24.8	24.9	-0.1	0.7	0.8
306	161.1	1.611	21.0	20.6	0.4	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
307	161.1	1.611	20.8	20.5	0.4	122.1	1.221	24.8	24.9	-0.1	0.7	0.8
308	161.1	1.611	20.8	20.5	0.3	122.1	1.221	24.8	24.9	-0.1	0.7	0.8
309	161.1	1.611	20.9	20.6	0.3	122.1	1.221	25.0	25.0	0.0	0.7	0.8
310	161.1	1.611	20.8	20.5	0.4	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
311	161.1	1.611	20.9	20.5	0.5	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
312	161.1	1.611	20.9	20.6	0.3	122.1	1.221	25.0	25.0	0.0	0.7	0.8
313	161.1	1.611	20.9	20.5	0.5	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
314	161.1	1.611	20.9	20.6	0.3	122.1	1.221	24.9	25.1	-0.2	0.7	0.8
315	156.3	1.563	21.1	20.6	0.5	122.1	1.221	25.0	25.1	-0.1	0.7	0.8
	156.3	1.563	20.9	20.6	0.3	122.1	1.221	24.9	25.1	-0.2	0.7	0.8

Table A.2-2 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 15 min.

Sample No.	G21-15					G22-15					G23-15					G24-15					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	258.8	2.588	21.4	19.5	1.9	253.9	2.539	19.3	18.1	1.2	253.9	2.539	21.3	21.5	-0.2	253.9	2.539	25.1	24.6	0.5	**2.6**	0.0
1	249.0	2.490	21.4	19.6	1.8	185.5	1.855	19.5	18.1	1.3	253.9	2.539	21.1	21.5	-0.4	253.9	2.539	25.2	24.8	0.5	**2.4**	0.3
2	239.3	2.393	21.3	19.5	1.8	131.8	1.318	19.4	17.9	1.5	249.0	2.490	21.3	21.5	-0.2	253.9	2.539	25.2	24.8	0.5	**2.2**	0.6
3	229.5	2.295	21.3	19.5	1.8	78.1	0.781	19.2	17.8	1.5	249.0	2.490	21.2	21.4	-0.2	249.0	2.490	25.1	24.6	0.5	**2.0**	0.8
4	224.6	2.246	21.5	19.4	2.1						249.0	2.490	21.2	21.5	-0.4	249.0	2.490	25.1	24.6	0.5	**1.8**	1.2
5	210.0	2.100	21.5	19.5	1.9						249.0	2.490	21.2	21.5	-0.4	249.0	2.490	25.2	24.8	0.4	**1.8**	1.2
6	205.1	2.051	21.3	19.7	1.7						249.0	2.490	21.1	21.4	-0.4	249.0	2.490	25.2	24.7	0.5	**1.8**	1.2
7	195.3	1.953	21.3	19.5	1.8						249.0	2.490	21.1	21.4	-0.4	249.0	2.490	25.2	24.7	0.5	**1.7**	1.2
8	185.5	1.855	21.5	19.7	1.8						249.0	2.490	21.2	21.5	-0.2	249.0	2.490	25.2	24.7	0.5	**1.7**	1.2
9	180.7	1.807	21.4	19.6	1.8						249.0	2.490	21.1	21.5	-0.4	244.1	2.441	25.1	24.6	0.5	**1.7**	1.2
10	170.9	1.709	21.4	19.8	1.6						249.0	2.490	21.1	21.5	-0.4	244.1	2.441	25.1	24.6	0.5	**1.7**	1.2
11	166.0	1.660	21.4	19.6	1.8						244.1	2.441	21.1	21.5	-0.4	244.1	2.441	25.1	24.6	0.5	**1.6**	1.2
12	156.3	1.563	21.4	19.7	1.7						244.1	2.441	21.0	21.4	-0.4	244.1	2.441	25.1	24.6	0.5	**1.6**	1.2
13	151.4	1.514	21.4	19.7	1.7						244.1	2.441	21.0	21.4	-0.4	239.3	2.393	25.1	24.6	0.5	**1.6**	1.1
14	146.5	1.465	21.3	19.6	1.7						244.1	2.441	21.0	21.2	-0.2	239.3	2.393	25.0	24.6	0.4	**1.6**	1.1
15	136.7	1.367	21.4	19.9	1.6						244.1	2.441	21.0	21.2	-0.2	239.3	2.393	25.2	24.8	0.4	**1.6**	1.1
16	131.8	1.318	21.4	19.6	1.8						244.1	2.441	21.2	21.5	-0.4	239.3	2.393	25.2	24.7	0.5	**1.5**	1.1
17	127.0	1.270	21.4	19.8	1.7						244.1	2.441	21.0	21.4	-0.4	234.4	2.344	25.2	24.7	0.5	**1.5**	1.1
18	117.2	1.172	21.4	19.8	1.7						244.1	2.441	21.0	21.4	-0.4	234.4	2.344	25.2	24.7	0.5	**1.5**	1.1
19	112.3	1.123	21.3	19.6	1.7						244.1	2.441	21.0	21.4	-0.4	234.4	2.344	25.2	24.7	0.5	**1.5**	1.2
20	102.5	1.025	21.3	19.8	1.6						244.1	2.441	21.0	21.4	-0.4	234.4	2.344	25.2	24.6	0.6	**1.5**	1.2
21	97.7	0.977	21.5	19.8	1.7						239.3	2.393	21.0	21.4	-0.4	234.4	2.344	25.0	24.7	0.4	**1.4**	1.2
22	87.9	0.879	21.4	19.8	1.6						239.3	2.393	21.0	21.4	-0.4	229.5	2.295	24.9	24.6	0.4	**1.4**	1.2
23	83.0	0.830	21.5	19.7	1.8						239.3	2.393	20.9	21.3	-0.4	229.5	2.295	25.0	24.6	0.5	**1.4**	1.2
24	78.1	0.781	21.5	19.7	1.8						239.3	2.393	20.9	21.3	-0.4	229.5	2.295	24.9	24.4	0.5	**1.4**	1.2
25	73.2	0.732	21.3	19.7	1.6						239.3	2.393	21.0	21.3	-0.2	229.5	2.295	25.1	24.6	0.5	**1.4**	1.2
26	68.4	0.684	21.3	19.7	1.6						239.3	2.393	20.9	21.3	-0.4	229.5	2.295	25.0	24.6	0.4	**1.3**	1.2
27	63.5	0.635	21.3	19.7	1.6						239.3	2.393	20.9	21.3	-0.4	229.5	2.295	25.0	24.6	0.4	**1.3**	1.2
28	58.6	0.586	21.3	19.7	1.6						239.3	2.393	20.9	21.3	-0.4	224.6	2.246	25.0	24.6	0.4	**1.3**	1.2
29	58.6	0.586	21.3	19.7	1.6						234.4	2.344	20.9	21.2	-0.2	224.6	2.246	25.1	24.8	0.4	**1.3**	1.2
30	53.7	0.537	21.3	19.7	1.6						234.4	2.344	20.8	21.2	-0.4	224.6	2.246	25.1	24.8	0.4	**1.3**	1.2
31	53.7	0.537	21.3	19.7	1.6						234.4	2.344	21.0	21.3	-0.4	224.6	2.246	25.1	24.7	0.5	**1.3**	1.2
32	48.8	0.488	21.3	19.8	1.4						234.4	2.344	21.0	21.4	-0.5	224.6	2.246	25.0	24.5	0.5	**1.3**	1.2
33	43.9	0.439	21.5	19.9	1.7						234.4	2.344	21.1	21.3	-0.2	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
34	39.1	0.391	21.3	19.7	1.6						234.4	2.344	21.0	21.3	-0.4	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
35	39.1	0.391	21.0	19.3	1.7						234.4	2.344	21.0	21.3	-0.4	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
36	34.2	0.342	21.2	19.6	1.6						229.5	2.295	21.0	21.2	-0.2	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
37	34.2	0.342	21.4	19.9	1.4						229.5	2.295	21.0	21.3	-0.4	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
38	29.3	0.293	21.5	20.0	1.6						229.5	2.295	21.1	21.5	-0.4	219.7	2.197	25.0	24.5	0.5	**1.2**	1.2
39	29.3	0.293	21.4	19.9	1.6						229.5	2.295	21.1	21.4	-0.2	214.8	2.148	24.9	24.5	0.4	**1.2**	1.2
40	24.4	0.244	21.4	19.9	1.6						229.5	2.295	21.0	21.2	-0.2	214.8	2.148	25.0	24.5	0.5	**1.2**	1.2
41	24.4	0.244	21.5	20.0	1.4						229.5	2.295	21.0	21.3	-0.4	214.8	2.148	25.0	24.7	0.4	**1.2**	1.2
42	19.5	0.195	21.5	20.0	1.4						229.5	2.295	21.1	21.4	-0.2	214.8	2.148	25.0	24.7	0.4	**1.2**	1.2
43	19.5	0.195	21.5	19.9	1.6						229.5	2.295	21.1	21.5	-0.4	214.8	2.148	25.0	24.5	0.5	**1.2**	1.2
44	14.6	0.146	21.5	19.9	1.6						229.5	2.295	21.0	21.5	-0.5	214.8	2.148	25.0	24.5	0.5	**1.1**	1.2
45	14.6	0.146	21.3	19.8	1.6						229.5	2.295	21.1	21.4	-0.2	214.8	2.148	25.0	24.5	0.5	**1.1**	1.2

Table A.2-2 continued...

46	9.8	0.098	21.3	19.9	1.4
47	9.8	0.098	21.3	19.8	1.6
48	9.8	0.098	21.2	19.9	1.3
49	4.9	0.049	21.2	19.9	1.3
50	4.9	0.049	21.3	19.8	1.6
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224.6	2.246	21.0	21.4	-0.4	210.0	2.100	25.0	24.5	0.5	**1.1**	1.2
224.6	2.246	20.8	21.2	-0.4	210.0	2.100	25.0	24.5	0.5	**1.1**	1.2
224.6	2.246	21.0	21.4	-0.4	210.0	2.100	24.9	24.5	0.4	**1.1**	1.2
224.6	2.246	21.0	21.3	-0.2	210.0	2.100	25.0	24.4	0.6	**1.1**	1.2
224.6	2.246	21.0	21.4	-0.4	210.0	2.100	24.9	24.5	0.4	**1.1**	1.2
224.6	2.246	20.8	21.2	-0.4	210.0	2.100	25.0	24.5	0.5	**1.1**	1.3
224.6	2.246	21.0	21.4	-0.4	205.1	2.051	25.0	24.5	0.5	**1.1**	1.2
224.6	2.246	21.0	21.4	-0.4	205.1	2.051	25.0	24.5	0.5	**1.1**	1.2
219.7	2.197	21.0	21.4	-0.4	200.2	2.002	25.0	24.5	0.5	**1.0**	1.2
219.7	2.197	21.0	21.4	-0.4	195.3	1.953	24.9	24.5	0.4	**1.0**	1.2
219.7	2.197	21.0	21.4	-0.4	195.3	1.953	25.1	24.7	0.4	**1.0**	1.2
219.7	2.197	20.8	21.2	-0.4	190.4	1.904	25.1	24.6	0.5	**1.0**	1.2
219.7	2.197	21.0	21.4	-0.4	190.4	1.904	25.0	24.6	0.4	**1.0**	1.2
219.7	2.197	21.0	21.4	-0.4	190.4	1.904	25.0	24.6	0.4	**1.0**	1.2
219.7	2.197	20.8	21.2	-0.4	190.4	1.904	24.8	21.5	3.2	**1.0**	1.2
219.7	2.197	21.0	21.4	-0.4	205.1	2.051	24.5	19.9	4.6	**1.1**	1.2
219.7	2.197	21.0	21.4	-0.4	210.0	2.100	24.8	22.0	2.8	**1.1**	1.2
214.8	2.148	21.0	21.4	-0.4	210.0	2.100	24.8	22.6	2.2	**1.1**	1.2
219.7	2.197	21.0	21.4	-0.4	210.0	2.100	24.8	23.0	1.8	**1.1**	1.2
214.8	2.148	21.0	21.4	-0.4	210.0	2.100	24.8	23.2	1.6	**1.1**	1.2
214.8	2.148	21.0	21.4	-0.4	205.1	2.051	25.1	23.8	1.3	**1.0**	1.2
214.8	2.148	20.9	21.4	-0.5	205.1	2.051	25.1	24.1	1.1	**1.0**	1.2
214.8	2.148	21.0	21.4	-0.4	205.1	2.051	25.1	24.1	1.1	**1.0**	1.2
214.8	2.148	21.0	21.4	-0.4	200.2	2.002	25.0	24.3	0.7	**1.0**	1.2
214.8	2.148	20.9	21.4	-0.5	200.2	2.002	25.0	24.2	0.8	**1.0**	1.2
214.8	2.148	20.9	21.4	-0.5	200.2	2.002	25.0	24.3	0.7	**1.0**	1.2
214.8	2.148	21.0	21.4	-0.4	195.3	1.953	24.9	24.4	0.5	**1.0**	1.2
214.8	2.148	20.9	21.3	-0.4	195.3	1.953	24.9	24.3	0.6	**1.0**	1.2
214.8	2.148	20.9	21.4	-0.5	195.3	1.953	25.1	24.5	0.6	**1.0**	1.2
214.8	2.148	21.0	21.4	-0.4	190.4	1.904	25.1	24.5	0.6	**1.0**	1.2
214.8	2.148	20.9	21.3	-0.4	190.4	1.904	25.1	24.6	0.5	**1.0**	1.2
210.0	2.100	21.0	21.4	-0.4	190.4	1.904	25.0	24.5	0.5	**1.0**	1.2
210.0	2.100	21.0	21.4	-0.4	185.5	1.855	25.0	24.5	0.5	**1.0**	1.1
210.0	2.100	20.9	21.4	-0.5	185.5	1.855	25.0	24.6	0.4	**1.0**	1.1
210.0	2.100	20.9	21.4	-0.5	185.5	1.855	25.0	24.6	0.4	**1.0**	1.1
210.0	2.100	20.9	21.3	-0.4	185.5	1.855	25.1	24.6	0.5	**1.0**	1.1
210.0	2.100	20.9	21.3	-0.4	180.7	1.807	25.0	24.5	0.5	**1.0**	1.1
210.0	2.100	20.9	21.3	-0.4	180.7	1.807	25.1	24.6	0.5	**1.0**	1.1
210.0	2.100	20.9	21.1	-0.2	180.7	1.807	25.0	24.6	0.4	**1.0**	1.1
210.0	2.100	21.0	21.4	-0.4	180.7	1.807	25.0	24.6	0.4	**1.0**	1.1
210.0	2.100	21.0	21.3	-0.2	180.7	1.807	25.0	24.5	0.5	**1.0**	1.1
210.0	2.100	20.9	21.3	-0.4	175.8	1.758	25.2	24.7	0.5	**1.0**	1.1
210.0	2.100	20.7	21.1	-0.4	175.8	1.758	24.9	24.5	0.4	**1.0**	1.1
214.8	2.148	21.0	21.3	-0.2	175.8	1.758	25.2	24.7	0.5	**1.0**	1.1
214.8	2.148	21.0	21.3	-0.2	175.8	1.758	25.1	24.6	0.5	**1.0**	1.1
214.8	2.148	21.0	21.3	-0.2	175.8	1.758	25.1	24.7	0.4	**1.0**	1.1
210.0	2.100	21.0	21.3	-0.2	175.8	1.758	25.1	24.7	0.4	**1.0**	1.1
210.0	2.100	21.0	21.3	-0.2	170.9	1.709	25.1	24.7	0.4	**1.0**	1.1
210.0	2.100	21.0	21.3	-0.2	170.9	1.709	25.1	24.9	0.2	**1.0**	1.1
205.1	2.051	20.9	21.4	-0.5	170.9	1.709	24.9	24.7	0.2	**0.9**	1.1
205.1	2.051	21.0	21.4	-0.4	170.9	1.709	25.1	24.7	0.4	**0.9**	1.1
205.1	2.051	20.9	21.1	-0.2	166.0	1.660	24.9	24.6	0.4	**0.9**	1.1
205.1	2.051	21.0	21.4	-0.4	166.0	1.660	25.1	24.7	0.4	**0.9**	1.1
205.1	2.051	20.9	21.3	-0.4	166.0	1.660	25.1	24.6	0.5	**0.9**	1.1

Table A.2-2 continued...

100	205.1	2.051	21.0	21.3	-0.2	166.0	1.660	25.1	24.7	0.4	0.9	1.1
101	200.2	2.002	21.0	21.3	-0.2	166.0	1.660	24.9	24.6	0.4	0.9	1.1
102	200.2	2.002	20.9	21.3	-0.4	166.0	1.660	24.9	24.6	0.4	0.9	1.1
103	200.2	2.002	20.9	21.3	-0.4	161.1	1.611	25.1	24.7	0.4	0.9	1.1
104	200.2	2.002	20.9	21.3	-0.4	161.1	1.611	24.9	24.6	0.4	0.9	1.1
105	200.2	2.002	20.9	21.1	-0.2	161.1	1.611	25.1	24.7	0.4	0.9	1.1
106	200.2	2.002	20.9	21.3	-0.4	161.1	1.611	25.1	24.7	0.4	0.9	1.1
107	200.2	2.002	20.9	21.3	-0.4	161.1	1.611	25.1	24.6	0.5	0.9	1.1
108	200.2	2.002	20.9	21.3	-0.4	161.1	1.611	25.0	24.7	0.2	0.9	1.1
109	195.3	1.953	20.9	21.3	-0.4	161.1	1.611	25.0	24.7	0.2	0.9	1.0
110	195.3	1.953	20.9	21.3	-0.4	156.3	1.563	25.1	24.6	0.5	0.9	1.0
111	195.3	1.953	20.9	21.3	-0.4	156.3	1.563	25.0	24.6	0.4	0.9	1.0
112	195.3	1.953	20.9	21.3	-0.4	156.3	1.563	25.0	24.7	0.2	0.9	1.0
113	195.3	1.953	20.9	21.1	-0.2	156.3	1.563	25.2	24.8	0.4	0.9	1.0
114	195.3	1.953	20.9	21.3	-0.4	156.3	1.563	25.0	24.6	0.4	0.9	1.0
115	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
116	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.2	24.8	0.4	0.9	1.0
117	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
118	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.2	24.8	0.4	0.9	1.0
119	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
120	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
121	195.3	1.953	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
122	190.4	1.904	20.9	21.4	-0.5	151.4	1.514	25.2	24.8	0.4	0.9	1.0
123	190.4	1.904	20.9	21.3	-0.4	151.4	1.514	25.0	24.6	0.4	0.9	1.0
124	190.4	1.904	20.9	21.3	-0.4	146.5	1.465	25.2	24.7	0.5	0.8	1.0
125	190.4	1.904	20.9	21.3	-0.4	146.5	1.465	25.0	24.6	0.4	0.8	1.0
126	190.4	1.904	20.9	21.3	-0.4	146.5	1.465	25.0	24.6	0.4	0.8	1.0
127	190.4	1.904	20.9	21.3	-0.4	146.5	1.465	25.2	24.9	0.2	0.8	1.0
128	190.4	1.904	20.9	21.1	-0.2	146.5	1.465	25.2	24.9	0.2	0.8	1.0
129	190.4	1.904	20.9	21.3	-0.4	146.5	1.465	25.2	24.8	0.4	0.8	1.0
130	185.5	1.855	21.1	21.4	-0.4	146.5	1.465	25.2	24.7	0.5	0.8	1.0
131	185.5	1.855	20.9	21.1	-0.2	146.5	1.465	25.2	24.7	0.5	0.8	1.0
132	185.5	1.855	20.9	21.1	-0.2	141.6	1.416	25.2	24.7	0.5	0.8	1.0
133	185.5	1.855	20.9	21.4	-0.5	141.6	1.416	25.0	24.8	0.2	0.8	1.0
134	185.5	1.855	20.9	21.1	-0.2	141.6	1.416	25.0	24.8	0.2	0.8	1.0
135	185.5	1.855	20.9	21.3	-0.4	141.6	1.416	25.2	25.0	0.2	0.8	1.0
136	185.5	1.855	20.9	21.1	-0.2	141.6	1.416	25.0	24.8	0.2	0.8	1.0
137	185.5	1.855	20.9	21.3	-0.4	141.6	1.416	25.0	24.8	0.2	0.8	1.0
138	185.5	1.855	20.9	21.3	-0.4	141.6	1.416	25.2	24.9	0.4	0.8	1.0
139	185.5	1.855	20.9	21.4	-0.5	141.6	1.416	25.0	24.8	0.2	0.8	1.0
140	185.5	1.855	20.9	21.3	-0.4	141.6	1.416	25.0	24.8	0.2	0.8	1.0
141	180.7	1.807	21.1	21.3	-0.2	136.7	1.367	25.2	25.0	0.2	0.8	0.9
142	180.7	1.807	20.8	21.1	-0.4	136.7	1.367	25.0	24.8	0.2	0.8	0.9
143	180.7	1.807	20.8	21.1	-0.4	136.7	1.367	25.2	24.8	0.4	0.8	0.9
144	180.7	1.807	20.9	21.3	-0.4	136.7	1.367	25.0	24.7	0.4	0.8	0.9
145	180.7	1.807	20.8	21.3	-0.5	136.7	1.367	25.2	25.0	0.2	0.8	0.9
146	180.7	1.807	20.8	21.3	-0.5	136.7	1.367	25.2	24.9	0.4	0.8	0.9
147	180.7	1.807	20.9	21.3	-0.4	136.7	1.367	25.2	24.9	0.4	0.8	0.9
148	180.7	1.807	20.9	21.3	-0.4	136.7	1.367	25.2	24.9	0.4	0.8	0.9
149	180.7	1.807	20.8	21.1	-0.4	136.7	1.367	25.1	25.0	0.1	0.8	0.9
150	180.7	1.807	20.9	21.3	-0.4	136.7	1.367	25.2	25.0	0.2	0.8	0.9
151	180.7	1.807	20.9	21.3	-0.4	136.7	1.367	25.1	24.9	0.2	0.8	0.9
152	180.7	1.807	20.9	21.3	-0.4	131.8	1.318	25.2	24.9	0.4	0.8	0.9
153	180.7	1.807	20.8	21.3	-0.5	131.8	1.318	25.1	24.9	0.2	0.8	0.9

Table A.2-2 continued...

154											
155	175.8	1.758	20.8	21.3	-0.5	131.8	1.318	25.1	24.9	0.2	**0.8**	0.9
156	175.8	1.758	20.9	21.3	-0.4	131.8	1.318	25.2	25.0	0.2	**0.8**	0.9
157	175.8	1.758	20.9	21.1	-0.2	131.8	1.318	25.1	24.9	0.2	**0.8**	0.9
158	175.8	1.758	20.9	21.3	-0.4	131.8	1.318	25.1	24.9	0.2	**0.8**	0.9
159	175.8	1.758	20.9	21.3	-0.4	131.8	1.318	25.1	24.9	0.2	**0.8**	0.9
160	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
161	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	25.0	0.1	**0.8**	0.9
162	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
163	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	25.0	0.1	**0.8**	0.9
164	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
165	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
166	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
167	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.7	0.4	**0.8**	0.9
168	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
169	175.8	1.758	20.9	21.3	-0.4	127.0	1.270	25.1	24.9	0.2	**0.8**	0.9
170	175.8	1.758	20.9	21.3	-0.4	122.1	1.221	25.1	24.9	0.2	**0.7**	0.9
171	170.9	1.709	20.9	21.3	-0.4	122.1	1.221	25.1	24.9	0.2	**0.7**	0.9
172	170.9	1.709	20.9	21.3	-0.4	117.2	1.172	25.1	24.9	0.2	**0.7**	0.9
173	170.9	1.709	20.9	21.3	-0.4	112.3	1.123	25.1	25.0	0.1	**0.7**	0.9
174	170.9	1.709	20.9	21.3	-0.4	112.3	1.123	25.1	24.9	0.2	**0.7**	0.9
175	170.9	1.709	20.9	21.3	-0.4	112.3	1.123	25.1	24.9	0.2	**0.7**	0.9
176	170.9	1.709	20.9	21.4	-0.5	112.3	1.123	25.1	24.9	0.2	**0.7**	0.9
177	170.9	1.709	20.9	21.3	-0.4	112.3	1.123	25.1	24.7	0.4	**0.7**	0.9
178	170.9	1.709	20.9	21.3	-0.4	107.4	1.074	25.1	24.7	0.4	**0.7**	0.8
179	170.9	1.709	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
180	170.9	1.709	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
181	170.9	1.709	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
182	170.9	1.709	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
183	166.0	1.660	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
184	166.0	1.660	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
185	166.0	1.660	20.9	21.3	-0.4	107.4	1.074	25.1	24.9	0.2	**0.7**	0.8
186	166.0	1.660	20.9	21.3	-0.4	107.4	1.074	25.1	25.0	0.1	**0.7**	0.8
187	166.0	1.660	20.9	21.3	-0.4	107.4	1.074	25.2	24.9	0.4	**0.7**	0.8
188	166.0	1.660	20.9	21.1	-0.2	107.4	1.074	25.2	24.9	0.4	**0.7**	0.8
189	166.0	1.660	20.9	21.3	-0.4	102.5	1.025	25.2	25.0	0.2	**0.7**	0.8
190	166.0	1.660	21.1	21.3	-0.2	102.5	1.025	25.2	25.0	0.2	**0.7**	0.8
191	166.0	1.660	20.9	21.1	-0.2	102.5	1.025	25.2	24.9	0.4	**0.7**	0.8
192	166.0	1.660	20.9	21.1	-0.2	102.5	1.025	25.2	24.9	0.4	**0.7**	0.8
193	166.0	1.660	20.9	21.3	-0.4	102.5	1.025	25.2	24.7	0.5	**0.7**	0.8
194	166.0	1.660	20.9	21.3	-0.4	102.5	1.025	25.1	24.7	0.4	**0.7**	0.8
195	161.1	1.611	20.9	21.1	-0.2	102.5	1.025	25.2	24.9	0.4	**0.7**	0.8
196	161.1	1.611	20.9	21.3	-0.4	102.5	1.025	25.1	24.7	0.4	**0.7**	0.8
197	161.1	1.611	20.9	21.3	-0.4	102.5	1.025	25.1	24.7	0.4	**0.7**	0.8
198	161.1	1.611	20.9	21.1	-0.2	102.5	1.025	25.1	24.7	0.4	**0.7**	0.8
199	161.1	1.611	20.9	21.3	-0.4	102.5	1.025	25.1	24.9	0.2	**0.7**	0.8
200	161.1	1.611	21.0	21.3	-0.2	102.5	1.025	25.1	24.9	0.2	**0.7**	0.8
201	161.1	1.611	20.9	21.3	-0.4	102.5	1.025	25.1	24.9	0.2	**0.7**	0.8
202	161.1	1.611	20.9	21.3	-0.4	102.5	1.025	25.1	24.9	0.2	**0.7**	0.8
203	161.1	1.611	20.9	21.3	-0.4	97.7	0.977	25.2	24.9	0.4	**0.6**	0.8
204	161.1	1.611	20.9	21.3	-0.4	97.7	0.977	25.2	24.9	0.4	**0.6**	0.8
205	161.1	1.611	21.0	21.1	-0.1	97.7	0.977	25.1	24.9	0.2	**0.6**	0.8
206	161.1	1.611	20.9	21.3	-0.4	97.7	0.977	25.2	24.7	0.5	**0.6**	0.8
207	161.1	1.611	21.0	21.1	-0.1	97.7	0.977	25.2	24.9	0.4	**0.6**	0.8
	161.1	1.611	21.0	21.1	-0.1	97.7	0.977	25.2	24.9	0.4	**0.6**	0.8

Table A.2-2 continued...

208	161.1	1.611	20.9	21.1	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
209	161.1	1.611	21.1	21.3	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
210	161.1	1.611	20.9	21.1	-0.2	97.7	0.977	25.2	24.9	0.4	0.6	0.8
211	156.3	1.563	20.9	21.3	-0.4	97.7	0.977	25.2	24.9	0.4	0.6	0.8
212	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.9	0.4	0.6	0.8
213	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
214	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
215	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
216	156.3	1.563	21.1	21.3	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
217	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.9	0.4	0.6	0.8
218	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.9	0.4	0.6	0.8
219	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.9	0.4	0.6	0.8
220	156.3	1.563	20.9	21.1	-0.2	97.7	0.977	25.2	24.7	0.5	0.6	0.8
221	156.3	1.563	20.9	21.3	-0.4	92.8	0.928	25.0	24.7	0.4	0.6	0.8
222	156.3	1.563	21.0	21.3	-0.2	92.8	0.928	25.3	24.7	0.6	0.6	0.8
223	156.3	1.563	21.0	21.3	-0.2	92.8	0.928	25.3	24.9	0.5	0.6	0.8
224	156.3	1.563	20.9	21.3	-0.4	92.8	0.928	25.2	24.8	0.4	0.6	0.8
225	156.3	1.563	21.0	21.3	-0.2	92.8	0.928	25.2	24.7	0.5	0.6	0.8
226	156.3	1.563	21.0	21.3	-0.2	92.8	0.928	25.2	24.8	0.4	0.6	0.8
227	151.4	1.514	20.8	21.0	-0.1	92.8	0.928	25.2	24.8	0.4	0.6	0.7
228	151.4	1.514	21.0	21.3	-0.2	92.8	0.928	25.3	24.9	0.5	0.6	0.7
229	151.4	1.514	21.0	21.3	-0.2	92.8	0.928	25.2	24.8	0.4	0.6	0.7
230	151.4	1.514	21.0	21.3	-0.2	92.8	0.928	25.2	24.7	0.5	0.6	0.7
231	151.4	1.514	20.9	21.3	-0.4	92.8	0.928	25.2	24.8	0.4	0.6	0.7
232	151.4	1.514	21.0	21.1	-0.1	92.8	0.928	25.2	24.7	0.5	0.6	0.7
233	151.4	1.514	21.0	21.3	-0.2	92.8	0.928	25.2	24.8	0.4	0.6	0.7
234	151.4	1.514	21.0	21.1	-0.1	92.8	0.928	25.2	24.7	0.5	0.6	0.7
235	151.4	1.514	21.0	21.1	-0.1	92.8	0.928	25.3	25.0	0.4	0.6	0.7
236	151.4	1.514	21.0	21.3	-0.2	92.8	0.928	25.3	24.9	0.5	0.6	0.7
237	151.4	1.514	21.0	21.3	-0.2	87.9	0.879	25.2	24.8	0.4	0.6	0.7
238	151.4	1.514	20.8	21.1	-0.2	92.8	0.928	25.3	24.9	0.5	0.6	0.7
239	151.4	1.514	20.8	21.1	-0.2	87.9	0.879	25.3	24.9	0.5	0.6	0.7
240	151.4	1.514	21.0	21.1	-0.1	87.9	0.879	25.2	24.7	0.5	0.6	0.7
241	151.4	1.514	20.8	21.1	-0.2	87.9	0.879	25.3	24.9	0.5	0.6	0.7
242	151.4	1.514	21.0	21.1	-0.1	87.9	0.879	25.3	24.9	0.5	0.6	0.7
243	151.4	1.514	21.0	21.1	-0.1	87.9	0.879	25.3	24.9	0.5	0.6	0.7
244	151.4	1.514	21.0	21.1	-0.1	87.9	0.879	25.3	24.9	0.5	0.6	0.7
245	151.4	1.514	21.0	21.1	-0.1	87.9	0.879	25.3	24.9	0.5	0.6	0.7
246	151.4	1.514	21.1	21.3	-0.1	87.9	0.879	25.3	24.7	0.6	0.6	0.7
247	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.2	24.8	0.4	0.6	0.7
248	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.2	24.7	0.5	0.6	0.7
249	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.2	24.8	0.4	0.6	0.7
250	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.2	24.7	0.5	0.6	0.7
251	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.3	24.9	0.5	0.6	0.7
252	146.5	1.465	21.0	21.1	-0.1	87.9	0.879	25.3	24.7	0.6	0.6	0.7
253	146.5	1.465	20.8	20.8	0.0	87.9	0.879	25.2	24.7	0.5	0.6	0.7
254	146.5	1.465	20.9	20.9	0.0	87.9	0.879	25.3	24.9	0.5	0.6	0.7
255	146.5	1.465	20.9	20.9	0.0	87.9	0.879	25.2	24.7	0.5	0.6	0.7
256	146.5	1.465	21.1	21.1	0.0	87.9	0.879	25.2	24.6	0.6	0.6	0.7
257	146.5	1.465	21.1	21.1	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
258	146.5	1.465	20.9	20.9	0.0	83.0	0.830	25.2	24.7	0.5	0.6	0.7
259	146.5	1.465	21.1	21.1	0.0	87.9	0.879	25.3	24.9	0.5	0.6	0.7
260	146.5	1.465	20.8	20.9	-0.1	83.0	0.830	25.3	24.9	0.5	0.6	0.7
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Table A.2-2 continued...

262	146.5	1.465	20.9	20.9	0.0	83.0	0.830	25.2	24.6	0.6	0.6	0.7
263	146.5	1.465	21.1	21.1	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
264	146.5	1.465	20.8	20.9	-0.1	83.0	0.830	25.3	24.9	0.5	0.6	0.7
265	146.5	1.465	21.1	21.1	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
266	146.5	1.465	20.9	21.0	-0.1	83.0	0.830	25.2	24.7	0.5	0.6	0.7
267	146.5	1.465	21.1	21.1	0.0	83.0	0.830	25.5	24.9	0.6	0.6	0.7
268	146.5	1.465	20.9	20.9	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
269	146.5	1.465	20.9	20.8	0.1	83.0	0.830	25.2	24.7	0.5	0.6	0.7
270	141.6	1.416	20.9	21.0	-0.1	83.0	0.830	25.3	24.9	0.5	0.6	0.7
271	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
272	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.9	0.5	0.6	0.7
273	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.6	0.7	0.6	0.7
274	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.2	24.7	0.5	0.6	0.7
275	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.7	0.6	0.6	0.7
276	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.7	0.6	0.6	0.7
277	141.6	1.416	20.9	20.9	0.0	83.0	0.830	25.3	24.7	0.6	0.6	0.7
278	141.6	1.416	21.1	21.1	0.0	83.0	0.830	25.3	24.7	0.6	0.6	0.7
279	141.6	1.416	21.0	20.9	0.1	83.0	0.830	25.2	24.7	0.5	0.6	0.7
280	141.6	1.416	20.9	20.9	0.0	78.1	0.781	25.2	24.7	0.5	0.5	0.7
281	141.6	1.416	20.9	20.9	0.0	78.1	0.781	25.3	24.7	0.6	0.5	0.7
282	141.6	1.416	20.9	20.9	0.0	78.1	0.781	25.3	24.7	0.6	0.5	0.7
283	141.6	1.416	21.1	21.1	0.0	78.1	0.781	25.3	24.7	0.6	0.5	0.7
284	141.6	1.416	21.4	21.3	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
285	141.6	1.416	21.1	21.1	0.0	78.1	0.781	25.1	24.5	0.6	0.5	0.7
286	141.6	1.416	20.9	20.9	0.0	78.1	0.781	25.3	24.7	0.6	0.5	0.7
287	141.6	1.416	20.9	20.9	0.0	78.1	0.781	25.3	24.8	0.5	0.5	0.7
288	141.6	1.416	21.1	21.1	0.0	78.1	0.781	25.3	24.7	0.6	0.5	0.7
289	141.6	1.416	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
290	141.6	1.416	21.0	20.9	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
291	141.6	1.416	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
292	141.6	1.416	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
293	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
294	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
295	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
296	136.7	1.367	21.2	21.1	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
297	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.2	24.6	0.6	0.5	0.7
298	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
299	136.7	1.367	21.2	21.1	0.1	78.1	0.781	25.2	24.5	0.7	0.5	0.7
300	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
301	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
302	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
303	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
304	136.7	1.367	21.2	21.1	0.1	78.1	0.781	25.1	24.5	0.6	0.5	0.7
305	136.7	1.367	21.0	20.9	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
306	136.7	1.367	21.2	21.1	0.1	78.1	0.781	25.3	24.7	0.6	0.5	0.7
307	136.7	1.367	21.2	21.1	0.1	73.2	0.732	25.1	24.5	0.6	0.5	0.7
308	136.7	1.367	21.0	20.9	0.1	73.2	0.732	25.1	24.6	0.5	0.5	0.7
309	136.7	1.367	21.0	20.9	0.1	73.2	0.732	25.2	24.6	0.6	0.5	0.7
310	136.7	1.367	21.0	20.9	0.1	73.2	0.732	25.2	24.6	0.6	0.5	0.7
311	136.7	1.367	21.0	20.9	0.1	73.2	0.732	25.2	24.5	0.7	0.5	0.7
312	136.7	1.367	21.2	20.9	0.2	73.2	0.732	25.2	24.5	0.7	0.5	0.7
313	136.7	1.367	21.0	21.0	0.0	73.2	0.732	25.2	24.6	0.6	0.5	0.7
314	136.7	1.367	21.2	20.9	0.2	73.2	0.732	25.2	24.6	0.6	0.5	0.7
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Table A.2-3 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 30 min.

Sample No.	G21-30					G22-30					G23-30					G24-30					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	20.5	19.1	1.3	253.9	2.539	20.0	19.1	0.9	253.9	2.539	22.2	21.9	0.4	253.9	2.539	24.7	24.7	0.0	2.5	0.0
1	249.0	2.490	20.8	19.4	1.3	190.4	1.904	19.9	19.0	0.9	253.9	2.539	22.2	22.0	0.2	249.0	2.490	24.7	24.5	0.1	2.4	0.3
2	239.3	2.393	20.8	19.3	1.5	136.7	1.367	19.7	18.9	0.9	253.9	2.539	22.2	21.9	0.4	249.0	2.490	24.5	24.4	0.1	2.2	0.6
3	229.5	2.295	20.7	19.3	1.3	92.8	0.928	19.6	18.8	0.9	253.9	2.539	22.1	21.7	0.4	249.0	2.490	24.7	24.6	0.1	2.1	0.8
4	219.7	2.197	20.7	19.3	1.3	63.5	0.635	19.7	19.0	0.6	249.0	2.490	22.2	21.9	0.4	244.1	2.441	24.7	24.6	0.1	1.9	0.9
5	210.0	2.100	20.8	19.4	1.5	43.9	0.439	19.8	19.0	0.7	249.0	2.490	22.2	21.7	0.5	244.1	2.441	24.6	24.5	0.1	1.9	1.0
6	200.2	2.002	20.8	19.5	1.3						249.0	2.490	22.2	21.7	0.5	244.1	2.441	24.6	24.4	0.2	1.7	1.2
7	190.4	1.904	20.7	19.5	1.2						249.0	2.490	22.1	21.7	0.4	244.1	2.441	24.5	24.4	0.1	1.7	1.2
8	180.7	1.807	20.7	19.5	1.2						249.0	2.490	22.1	21.7	0.4	239.3	2.393	24.5	24.4	0.1	1.7	1.2
9	170.9	1.709	20.7	19.4	1.3						244.1	2.441	22.1	21.7	0.4	239.3	2.393	24.6	24.5	0.1	1.6	1.1
10	161.1	1.611	20.6	19.4	1.2						244.1	2.441	22.1	21.7	0.4	239.3	2.393	24.5	24.5	0.0	1.6	1.1
11	156.3	1.563	20.5	19.4	1.1						244.1	2.441	22.1	21.7	0.4	234.4	2.344	24.6	24.4	0.2	1.6	1.1
12	146.5	1.465	20.7	19.5	1.2						244.1	2.441	22.1	21.6	0.5	234.4	2.344	24.5	24.4	0.1	1.6	1.1
13	141.6	1.416	20.6	19.4	1.2						244.1	2.441	22.1	21.9	0.2	234.4	2.344	24.5	24.4	0.1	1.6	1.1
14	131.8	1.318	20.6	19.5	1.1						244.1	2.441	22.0	21.6	0.4	229.5	2.295	24.7	24.5	0.2	1.5	1.1
15	127.0	1.270	20.7	19.4	1.3						239.3	2.393	22.0	21.7	0.2	229.5	2.295	24.6	24.5	0.1	1.5	1.1
16	122.1	1.221	20.6	19.4	1.2						239.3	2.393	22.0	21.6	0.4	229.5	2.295	24.6	24.5	0.1	1.5	1.1
17	117.2	1.172	20.6	19.4	1.2						239.3	2.393	22.1	21.7	0.5	229.5	2.295	24.6	24.5	0.1	1.4	1.1
18	107.4	1.074	20.6	19.3	1.3						239.3	2.393	22.1	21.8	0.4	224.6	2.246	24.6	24.5	0.1	1.4	1.1
19	102.5	1.025	20.8	19.5	1.3						239.3	2.393	22.0	21.9	0.1	224.6	2.246	24.5	24.3	0.1	1.4	1.1
20	97.7	0.977	20.6	19.3	1.3						239.3	2.393	22.0	21.9	0.1	224.6	2.246	24.5	24.3	0.1	1.4	1.1
21	92.8	0.928	20.6	19.3	1.3						234.4	2.344	22.0	21.8	0.2	224.6	2.246	24.5	24.5	0.0	1.4	1.1
22	87.9	0.879	20.6	19.3	1.3						234.4	2.344	22.1	21.8	0.4	219.7	2.197	24.5	24.5	0.0	1.4	1.1
23	83.0	0.830	20.6	19.3	1.3						234.4	2.344	22.0	21.8	0.2	219.7	2.197	24.5	24.5	0.0	1.3	1.1
24	78.1	0.781	20.8	19.5	1.3						234.4	2.344	22.0	21.7	0.4	219.7	2.197	24.5	24.5	0.0	1.3	1.1
25	73.2	0.732	20.5	19.3	1.2						234.4	2.344	22.2	22.0	0.2	219.7	2.197	24.5	24.4	0.1	1.3	1.1
26	68.4	0.684	20.7	19.3	1.3						234.4	2.344	22.2	22.0	0.2	214.8	2.148	24.5	24.5	0.0	1.3	1.1
27	63.5	0.635	20.8	19.3	1.5						229.5	2.295	22.0	21.8	0.2	214.8	2.148	24.6	24.6	0.0	1.3	1.1
28	63.5	0.635	20.8	19.5	1.3						229.5	2.295	21.9	21.8	0.1	214.8	2.148	24.7	24.6	0.1	1.3	1.1
29	58.6	0.586	20.8	19.3	1.5						229.5	2.295	22.0	21.8	0.2	214.8	2.148	24.6	24.6	0.0	1.3	1.1
30	53.7	0.537	20.7	19.5	1.2						229.5	2.295	22.1	21.8	0.2	214.8	2.148	24.6	24.6	0.0	1.2	1.2
31	48.8	0.488	20.8	19.3	1.5						229.5	2.295	22.2	22.0	0.2	210.0	2.100	24.6	24.4	0.1	1.2	1.1
32	48.8	0.488	20.7	19.3	1.3						229.5	2.295	22.2	21.9	0.4	210.0	2.100	24.6	24.4	0.1	1.2	1.1
33	43.9	0.439	20.8	19.5	1.3						229.5	2.295	22.1	21.9	0.2	210.0	2.100	24.6	24.4	0.1	1.2	1.2
34	43.9	0.439	20.8	19.3	1.5						224.6	2.246	22.0	21.8	0.1	205.1	2.051	24.6	24.4	0.1	1.2	1.1
35	39.1	0.391	20.7	19.5	1.2						224.6	2.246	22.1	21.8	0.2	205.1	2.051	24.4	24.4	0.0	1.2	1.1
36	39.1	0.391	20.7	19.5	1.2						224.6	2.246	22.0	21.8	0.1	205.1	2.051	24.6	24.6	0.0	1.2	1.1
37	34.2	0.342	20.7	19.3	1.3						224.6	2.246	22.1	22.0	0.1	205.1	2.051	24.4	24.4	0.0	1.2	1.2
38	29.3	0.293	20.7	19.3	1.3						224.6	2.246	22.0	22.0	0.0	200.2	2.002	24.3	24.4	-0.1	1.1	1.2
39	29.3	0.293	20.7	19.5	1.2						224.6	2.246	22.0	22.0	0.0	200.2	2.002	24.5	24.5	0.0	1.1	1.2
40	29.3	0.293	20.6	19.3	1.2						224.6	2.246	22.0	21.8	0.1	200.2	2.002	24.5	24.5	0.0	1.1	1.2
41	24.4	0.244	20.7	19.3	1.3						219.7	2.197	22.1	22.0	0.1	200.2	2.002	24.3	24.3	0.0	1.1	1.1
42	19.5	0.195	20.8	19.3	1.5						219.7	2.197	22.1	22.0	0.1	200.2	2.002	24.6	24.5	0.1	1.1	1.2
43	19.5	0.195	20.7	19.5	1.2						219.7	2.197	22.1	22.0	0.1	195.3	1.953	24.5	24.5	0.0	1.1	1.1
44	19.5	0.195	20.7	19.3	1.3						219.7	2.197	22.2	22.2	0.0	195.3	1.953	24.5	24.5	0.0	1.1	1.1
45	14.6	0.146	20.6	19.3	1.2						219.7	2.197	22.2	22.0	0.1	195.3	1.953	24.5	24.4	0.1	1.1	1.2

Table A.2-3 continued...

46	14.6	0.146	20.6	19.5	1.1
47	14.6	0.146	20.8	19.6	1.2
48	9.8	0.098	20.4	19.5	1.0
49	9.8	0.098	20.7	19.6	1.1
50	9.8	0.098	20.7	19.6	1.1
51	4.9	0.049	20.6	19.8	0.8
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219.7	2.197	22.2	21.8	0.4	195.3	1.953	24.5	24.5	0.0	**1.1**	1.2
219.7	2.197	22.2	21.9	0.4	190.4	1.904	24.7	24.7	0.0	**1.1**	1.1
219.7	2.197	22.2	22.0	0.2	190.4	1.904	24.7	24.5	0.1	**1.0**	1.2
214.8	2.148	22.2	22.0	0.2	190.4	1.904	24.5	24.5	0.0	**1.0**	1.1
214.8	2.148	22.0	21.7	0.4	190.4	1.904	24.5	24.4	0.1	**1.0**	1.1
210.0	2.100	22.2	21.7	0.5	190.4	1.904	24.5	24.4	0.1	**1.0**	1.1
214.8	2.148	22.2	21.7	0.5	185.5	1.855	24.5	24.4	0.1	**1.0**	1.2
214.8	2.148	22.2	21.7	0.5	185.5	1.855	24.4	24.4	0.0	**1.0**	1.2
214.8	2.148	22.1	21.6	0.5	185.5	1.855	24.4	24.4	0.0	**1.0**	1.2
214.8	2.148	22.3	21.8	0.5	180.7	1.807	24.6	24.6	0.0	**1.0**	1.2
219.7	2.197	22.1	21.5	0.6	180.7	1.807	24.4	24.4	0.0	**1.0**	1.2
219.7	2.197	22.1	21.6	0.5	180.7	1.807	24.6	24.6	0.0	**1.0**	1.2
219.7	2.197	22.1	21.5	0.6	180.7	1.807	24.4	24.4	0.0	**1.0**	1.2
219.7	2.197	22.1	21.6	0.5	180.7	1.807	24.4	24.4	0.0	**1.0**	1.2
219.7	2.197	22.2	21.5	0.7	175.8	1.758	24.4	24.5	-0.1	**1.0**	1.2
219.7	2.197	22.1	21.5	0.6	175.8	1.758	24.4	24.4	0.0	**1.0**	1.2
219.7	2.197	22.1	21.6	0.5	175.8	1.758	24.4	24.4	0.0	**1.0**	1.2
219.7	2.197	22.1	21.6	0.5	175.8	1.758	24.6	24.6	0.0	**1.0**	1.2
219.7	2.197	22.2	21.6	0.6	175.8	1.758	24.6	24.6	0.0	**1.0**	1.2
219.7	2.197	22.2	21.6	0.6	175.8	1.758	24.6	24.8	-0.1	**1.0**	1.2
219.7	2.197	22.2	21.7	0.5	170.9	1.709	24.5	24.5	0.0	**1.0**	1.1
214.8	2.148	22.2	21.6	0.6	170.9	1.709	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.2	21.6	0.6	170.9	1.709	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.1	21.6	0.5	170.9	1.709	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.1	21.6	0.5	166.0	1.660	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.1	21.6	0.5	166.0	1.660	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.1	21.6	0.5	166.0	1.660	24.6	24.6	0.0	**1.0**	1.1
214.8	2.148	22.1	21.6	0.5	166.0	1.660	24.5	24.6	-0.1	**1.0**	1.1
214.8	2.148	22.2	21.7	0.5	161.1	1.611	24.5	24.6	-0.1	**0.9**	1.1
214.8	2.148	22.1	21.7	0.4	161.1	1.611	24.5	24.5	0.0	**0.9**	1.1
214.8	2.148	22.1	21.7	0.4	161.1	1.611	24.6	24.6	0.0	**0.9**	1.1
214.8	2.148	22.1	21.7	0.4	161.1	1.611	24.6	24.6	0.0	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	161.1	1.611	24.6	24.6	0.0	**0.9**	1.1
214.8	2.148	22.1	21.6	0.5	156.3	1.563	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	156.3	1.563	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.3	21.8	0.5	156.3	1.563	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.1	21.5	0.6	156.3	1.563	24.6	24.6	0.0	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	156.3	1.563	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	156.3	1.563	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.1	21.5	0.6	151.4	1.514	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	21.9	21.3	0.6	151.4	1.514	24.5	24.6	-0.1	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	151.4	1.514	24.5	24.5	0.0	**0.9**	1.1
210.0	2.100	22.1	21.6	0.5	151.4	1.514	24.7	24.7	0.0	**0.9**	1.1
210.0	2.100	22.2	21.6	0.6	151.4	1.514	24.6	24.7	-0.1	**0.9**	1.1
205.1	2.051	22.1	21.6	0.5	146.5	1.465	24.6	24.7	-0.1	**0.9**	1.0
205.1	2.051	22.1	21.6	0.5	146.5	1.465	24.6	24.7	-0.1	**0.9**	1.0
205.1	2.051	22.3	21.8	0.5	146.5	1.465	24.6	24.8	-0.2	**0.9**	1.0
205.1	2.051	22.1	21.6	0.5	146.5	1.465	24.4	24.5	-0.1	**0.9**	1.0
200.2	2.002	22.1	21.6	0.5	146.5	1.465	24.4	24.6	-0.2	**0.9**	1.0
200.2	2.002	22.3	21.8	0.5	141.6	1.416	24.6	24.8	-0.2	**0.9**	1.0
200.2	2.002	22.3	21.8	0.5	141.6	1.416	24.7	24.7	0.0	**0.9**	1.0
200.2	2.002	22.3	21.8	0.5	141.6	1.416	24.7	24.7	0.0	**0.9**	1.0
200.2	2.002	22.3	21.7	0.6	141.6	1.416	24.6	24.6	0.0	**0.9**	1.0
200.2	2.002	22.1	21.8	0.4	141.6	1.416	24.6	24.7	-0.1	**0.9**	1.0

Table A.2-3 continued...

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101	200.2	2.002	22.0	21.6	0.4	141.6	1.416	24.6	24.7	-0.1	**0.9**	1.0
102	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.6	24.7	-0.1	**0.8**	1.0
103	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.5	24.6	-0.1	**0.8**	1.0
104	195.3	1.953	22.1	21.6	0.5	136.7	1.367	24.6	24.6	0.0	**0.8**	1.0
105	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.6	24.6	0.0	**0.8**	1.0
106	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.6	24.6	0.0	**0.8**	1.0
107	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.7	24.7	0.0	**0.8**	1.0
108	195.3	1.953	22.3	21.8	0.5	136.7	1.367	24.6	24.6	0.0	**0.8**	1.0
109	195.3	1.953	22.3	21.8	0.5	131.8	1.318	24.6	24.8	-0.2	**0.8**	1.0
110	195.3	1.953	22.3	21.7	0.6	131.8	1.318	24.6	24.7	-0.1	**0.8**	1.0
111	195.3	1.953	22.1	21.7	0.5	127.0	1.270	24.6	24.7	-0.1	**0.8**	1.0
112	200.2	2.002	22.1	21.7	0.5	127.0	1.270	24.6	24.7	-0.1	**0.8**	1.0
113	195.3	1.953	22.0	21.5	0.5	127.0	1.270	24.6	24.7	-0.1	**0.8**	1.0
114	195.3	1.953	22.1	21.7	0.5	122.1	1.221	24.6	24.7	-0.1	**0.8**	1.0
115	195.3	1.953	22.0	21.5	0.5	122.1	1.221	24.6	24.7	-0.1	**0.8**	1.0
116	195.3	1.953	21.9	21.4	0.5	117.2	1.172	24.6	24.6	0.0	**0.8**	1.0
117	190.4	1.904	22.1	21.7	0.4	117.2	1.172	24.6	24.6	0.0	**0.8**	0.9
118	190.4	1.904	22.3	21.8	0.5	117.2	1.172	24.6	24.6	0.0	**0.8**	0.9
119	190.4	1.904	22.1	21.7	0.5	117.2	1.172	24.6	24.6	0.0	**0.8**	0.9
120	190.4	1.904	22.1	21.8	0.4	112.3	1.123	24.5	24.5	0.0	**0.8**	0.9
121	190.4	1.904	22.1	21.8	0.4	112.3	1.123	24.6	24.7	-0.1	**0.8**	0.9
122	190.4	1.904	22.3	21.8	0.5	112.3	1.123	24.6	24.7	-0.1	**0.8**	0.9
123	190.4	1.904	22.1	21.8	0.4	112.3	1.123	24.6	24.6	0.0	**0.8**	0.9
124	190.4	1.904	22.1	21.8	0.4	112.3	1.123	24.6	24.6	0.0	**0.8**	0.9
125	190.4	1.904	22.1	21.8	0.4	107.4	1.074	24.6	24.6	0.0	**0.7**	0.9
126	190.4	1.904	22.1	21.7	0.5	107.4	1.074	24.6	24.6	0.0	**0.7**	0.9
127	185.5	1.855	22.1	21.7	0.5	107.4	1.074	24.6	24.7	-0.1	**0.7**	0.9
128	185.5	1.855	22.0	21.6	0.4	107.4	1.074	24.6	24.6	0.0	**0.7**	0.9
129	185.5	1.855	22.1	21.8	0.4	107.4	1.074	24.6	24.6	0.0	**0.7**	0.9
130	185.5	1.855	22.1	21.8	0.4	107.4	1.074	24.6	24.5	0.1	**0.7**	0.9
131	185.5	1.855	22.1	21.7	0.5	102.5	1.025	24.6	24.6	0.0	**0.7**	0.9
132	185.5	1.855	22.0	21.7	0.4	102.5	1.025	24.6	24.6	0.0	**0.7**	0.9
133	185.5	1.855	22.0	21.7	0.4	102.5	1.025	24.6	24.6	0.0	**0.7**	0.9
134	185.5	1.855	22.0	21.7	0.4	102.5	1.025	24.6	24.6	0.0	**0.7**	0.9
135	185.5	1.855	22.0	21.7	0.4	102.5	1.025	24.8	24.8	0.0	**0.7**	0.9
136	185.5	1.855	22.0	21.7	0.4	102.5	1.025	24.8	24.8	0.0	**0.7**	0.9
137	185.5	1.855	22.1	21.7	0.5	102.5	1.025	24.5	24.5	0.0	**0.7**	0.9
138	185.5	1.855	22.1	21.7	0.5	102.5	1.025	24.7	24.7	0.0	**0.7**	0.9
139	185.5	1.855	22.0	21.5	0.5	102.5	1.025	24.6	24.5	0.1	**0.7**	0.9
140	180.7	1.807	22.1	21.5	0.6	97.7	0.977	24.6	24.5	0.1	**0.7**	0.9
141	180.7	1.807	22.1	21.7	0.5	97.7	0.977	24.6	24.5	0.1	**0.7**	0.9
142	180.7	1.807	22.1	21.8	0.4	97.7	0.977	24.8	24.7	0.1	**0.7**	0.9
143	180.7	1.807	22.1	21.8	0.4	97.7	0.977	24.8	24.7	0.1	**0.7**	0.9
144	180.7	1.807	22.1	21.8	0.4	97.7	0.977	24.7	24.7	0.0	**0.7**	0.9
145	175.8	1.758	22.0	21.7	0.4	97.7	0.977	24.8	24.7	0.1	**0.7**	0.9
146	175.8	1.758	22.1	21.7	0.5	97.7	0.977	24.8	24.8	0.0	**0.7**	0.9
147	175.8	1.758	22.0	21.8	0.2	97.7	0.977	24.8	24.7	0.1	**0.7**	0.9
148	175.8	1.758	22.0	21.8	0.2	92.8	0.928	24.8	24.7	0.1	**0.7**	0.8
149	170.9	1.709	22.2	22.0	0.2	92.8	0.928	24.6	24.6	0.0	**0.7**	0.8
150	166.0	1.660	22.0	21.8	0.2	92.8	0.928	24.6	24.6	0.0	**0.6**	0.8
151	166.0	1.660	22.0	21.9	0.1	92.8	0.928	24.6	24.6	0.0	**0.6**	0.8
152	161.1	1.611	22.0	21.9	0.1	92.8	0.928	24.6	24.6	0.0	**0.6**	0.8
153	161.1	1.611	22.0	22.0	0.0	92.8	0.928	24.6	24.5	0.1	**0.6**	0.8
	156.3	1.563	22.0	22.1	-0.1	87.9	0.879	24.6	24.6	0.0	**0.6**	0.8

Table A.2-3 continued...

154											
155	156.3	1.563	22.0	22.1	-0.1	87.9	0.879	24.8	24.8	0.0	**0.6**	0.8
156	156.3	1.563	22.0	22.2	-0.2	87.9	0.879	24.8	24.7	0.1	**0.6**	0.8
157	151.4	1.514	22.1	22.3	-0.1	87.9	0.879	24.6	24.5	0.1	**0.6**	0.7
158	151.4	1.514	22.2	22.6	-0.4	87.9	0.879	24.8	24.8	0.0	**0.6**	0.7
159	151.4	1.514	22.0	22.4	-0.4	87.9	0.879	24.8	24.8	0.0	**0.6**	0.7
160	146.5	1.465	22.2	22.4	-0.2	87.9	0.879	24.8	24.7	0.1	**0.6**	0.7
161	146.5	1.465	21.9	22.3	-0.4	83.0	0.830	24.6	24.5	0.1	**0.6**	0.7
162	146.5	1.465	21.9	22.3	-0.4	83.0	0.830	24.8	24.7	0.1	**0.6**	0.7
163	141.6	1.416	21.9	22.3	-0.4	83.0	0.830	24.6	24.6	0.0	**0.6**	0.7
164	141.6	1.416	22.1	22.4	-0.4	83.0	0.830	24.6	24.6	0.0	**0.6**	0.7
165	141.6	1.416	22.2	22.6	-0.4	83.0	0.830	24.6	24.6	0.0	**0.6**	0.7
166	141.6	1.416	22.1	22.4	-0.4	83.0	0.830	24.8	24.8	0.0	**0.6**	0.7
167	136.7	1.367	21.9	22.4	-0.5	83.0	0.830	24.6	24.6	0.0	**0.5**	0.7
168	136.7	1.367	22.1	22.4	-0.4	83.0	0.830	24.6	24.6	0.0	**0.5**	0.7
169	136.7	1.367	22.1	22.6	-0.5	83.0	0.830	24.8	24.8	0.0	**0.5**	0.7
170	136.7	1.367	22.1	22.6	-0.5	78.1	0.781	24.8	24.7	0.1	**0.5**	0.7
171	136.7	1.367	22.2	22.8	-0.6	78.1	0.781	24.8	24.7	0.1	**0.5**	0.7
172	131.8	1.318	22.3	22.7	-0.4	78.1	0.781	24.8	24.7	0.1	**0.5**	0.6
173	131.8	1.318	22.0	22.5	-0.5	78.1	0.781	24.8	24.7	0.1	**0.5**	0.6
174	131.8	1.318	22.2	22.7	-0.5	78.1	0.781	24.6	24.5	0.1	**0.5**	0.6
175	127.0	1.270	22.2	22.7	-0.5	78.1	0.781	24.6	24.5	0.1	**0.5**	0.6
176	127.0	1.270	22.1	22.7	-0.6	78.1	0.781	24.6	24.5	0.1	**0.5**	0.6
177	127.0	1.270	22.2	22.8	-0.6	78.1	0.781	24.6	24.6	0.0	**0.5**	0.6
178	127.0	1.270	22.2	22.7	-0.5	73.2	0.732	24.6	24.6	0.0	**0.5**	0.6
179	127.0	1.270	22.2	22.7	-0.5	73.2	0.732	24.8	24.8	0.0	**0.5**	0.6
180	127.0	1.270	22.1	22.7	-0.6	73.2	0.732	24.8	24.7	0.1	**0.5**	0.6
181	122.1	1.221	22.1	22.8	-0.7	73.2	0.732	24.8	24.8	0.0	**0.5**	0.6
182	117.2	1.172	21.9	22.7	-0.7	73.2	0.732	24.8	24.7	0.1	**0.5**	0.6
183	117.2	1.172	22.1	22.7	-0.6	73.2	0.732	24.8	24.7	0.1	**0.5**	0.6
184	107.4	1.074	22.3	22.9	-0.6	73.2	0.732	24.8	24.7	0.1	**0.5**	0.5
185	107.4	1.074	22.3	22.9	-0.6	68.4	0.684	24.7	24.7	0.0	**0.4**	0.5
186	107.4	1.074	22.3	22.9	-0.6	63.5	0.635	24.8	24.8	0.0	**0.4**	0.5
187	102.5	1.025	22.2	22.9	-0.7	63.5	0.635	24.7	24.7	0.0	**0.4**	0.5
188	102.5	1.025	22.3	23.0	-0.7	58.6	0.586	24.8	24.7	0.1	**0.4**	0.5
189	102.5	1.025	22.2	22.9	-0.7	58.6	0.586	24.8	24.8	0.0	**0.4**	0.5
190	102.5	1.025	22.2	23.0	-0.8	58.6	0.586	24.8	24.7	0.1	**0.4**	0.5
191	102.5	1.025	22.2	22.9	-0.7	58.6	0.586	24.8	24.7	0.1	**0.4**	0.5
192	102.5	1.025	22.2	22.9	-0.7	58.6	0.586	24.6	24.5	0.1	**0.4**	0.5
193	102.5	1.025	22.2	23.0	-0.8	58.6	0.586	24.6	24.5	0.1	**0.4**	0.5
194	97.7	0.977	21.9	22.6	-0.7	58.6	0.586	24.6	24.6	0.0	**0.4**	0.5
195	97.7	0.977	21.9	22.7	-0.8	58.6	0.586	24.8	24.7	0.1	**0.4**	0.5
196	97.7	0.977	21.9	22.7	-0.8	58.6	0.586	24.8	24.8	0.0	**0.4**	0.5
197	97.7	0.977	22.0	22.7	-0.7	53.7	0.537	24.8	24.7	0.1	**0.4**	0.5
198	97.7	0.977	22.0	23.0	-1.0	53.7	0.537	24.8	24.7	0.1	**0.4**	0.5
199	97.7	0.977	22.2	23.0	-0.8	53.7	0.537	24.8	24.7	0.1	**0.4**	0.5
200	97.7	0.977	22.2	23.0	-0.8	53.7	0.537	24.8	24.7	0.1	**0.4**	0.5
	97.7	0.977	22.2	22.9	-0.7	53.7	0.537	24.6	24.5	0.1	**0.4**	0.5

Table A.2-4 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 60 min.

Sample No.	G21-60					G22-60					G23-60					G24-60					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	22.4	22.5	-0.1	253.9	2.539	19.9	18.9	1.0	253.9	2.539	23.6	22.4	1.2	253.9	2.539	24.9	23.9	1.0	2.5	0.0
1	249.0	2.490	22.5	22.5	0.0	190.4	1.904	20.0	18.8	1.2	253.9	2.539	23.7	22.5	1.2	249.0	2.490	24.9	24.0	1.0	2.4	0.3
2	244.1	2.441	22.5	22.3	0.1	146.5	1.465	19.9	18.9	1.0	249.0	2.490	23.7	22.4	1.3	244.1	2.441	24.8	23.8	1.0	2.2	0.5
3	234.4	2.344	22.3	22.3	0.0	102.5	1.025	19.9	19.3	0.6	249.0	2.490	23.6	22.5	1.1	244.1	2.441	25.0	24.1	0.8	2.1	0.7
4	224.6	2.246	22.2	22.6	-0.4	68.4	0.684	19.8	18.8	1.0	249.0	2.490	23.6	22.4	1.2	239.3	2.393	24.8	24.0	0.8	2.0	0.9
5	214.8	2.148	22.4	22.5	-0.1	43.9	0.439	19.9	18.8	1.1	249.0	2.490	23.6	22.4	1.2	239.3	2.393	24.8	24.0	0.8	1.9	1.0
6	205.1	2.051	22.4	22.5	-0.1	43.9	0.439	19.7	18.8	0.9	249.0	2.490	23.8	22.6	1.2	234.4	2.344	25.0	24.2	0.8	1.8	0.9
7	195.3	1.953	22.3	22.5	-0.2						249.0	2.490	23.7	22.5	1.2	234.4	2.344	24.9	24.2	0.7	1.7	1.2
8	185.5	1.855	22.1	22.6	-0.5						249.0	2.490	23.7	22.5	1.2	229.5	2.295	24.8	24.1	0.7	1.7	1.1
9	180.7	1.807	22.3	22.4	-0.1						249.0	2.490	23.8	22.5	1.3	229.5	2.295	24.8	24.1	0.7	1.6	1.1
10	170.9	1.709	22.3	22.7	-0.4						244.1	2.441	23.7	22.5	1.2	224.6	2.246	24.7	23.9	0.7	1.6	1.1
11	161.1	1.611	22.3	22.6	-0.2						244.1	2.441	23.7	22.5	1.2	224.6	2.246	24.8	24.1	0.7	1.6	1.1
12	156.3	1.563	22.4	22.7	-0.4						244.1	2.441	23.7	22.5	1.2	224.6	2.246	24.8	24.1	0.7	1.6	1.1
13	146.5	1.465	22.4	22.7	-0.4						244.1	2.441	23.7	22.4	1.3	219.7	2.197	24.8	24.1	0.7	1.5	1.1
14	141.6	1.416	22.4	22.6	-0.2						244.1	2.441	23.6	22.4	1.2	219.7	2.197	24.7	24.0	0.7	1.5	1.1
15	136.7	1.367	22.4	22.7	-0.4						244.1	2.441	23.8	22.6	1.2	214.8	2.148	24.7	24.1	0.6	1.5	1.1
16	127.0	1.270	22.4	22.7	-0.4						239.3	2.393	23.6	22.4	1.2	214.8	2.148	24.6	24.0	0.6	1.5	1.1
17	122.1	1.221	22.4	22.8	-0.4						239.3	2.393	23.8	22.6	1.2	214.8	2.148	24.6	23.8	0.8	1.4	1.1
18	117.2	1.172	22.4	22.8	-0.4						239.3	2.393	23.8	22.6	1.2	214.8	2.148	24.8	23.7	1.1	1.4	1.1
19	112.3	1.123	22.4	22.7	-0.2						239.3	2.393	23.8	22.7	1.1	214.8	2.148	24.6	23.7	1.0	1.4	1.1
20	107.4	1.074	22.4	22.5	-0.1						239.3	2.393	23.6	22.6	1.1	214.8	2.148	24.8	23.7	1.1	1.4	1.1
21	97.7	0.977	22.4	22.8	-0.4						234.4	2.344	23.8	22.7	1.1	214.8	2.148	24.6	23.8	0.8	1.4	1.1
22	92.8	0.928	22.4	22.7	-0.2						234.4	2.344	23.8	22.6	1.2	210.0	2.100	24.7	24.0	0.7	1.3	1.1
23	87.9	0.879	22.4	22.7	-0.2						234.4	2.344	23.8	22.6	1.2	210.0	2.100	24.8	24.0	0.8	1.3	1.1
24	83.0	0.830	22.5	22.8	-0.4						234.4	2.344	23.8	22.7	1.1	210.0	2.100	24.8	24.0	0.8	1.3	1.1
25	78.1	0.781	22.5	22.9	-0.5						234.4	2.344	23.8	31.1	-7.3	205.1	2.051	24.8	24.0	0.8	1.3	1.1
26	73.2	0.732	22.3	22.5	-0.2						219.7	2.197	23.5	22.9	0.6	205.1	2.051	24.8	24.0	0.8	1.2	1.1
27	73.2	0.732	22.5	22.7	-0.2						219.7	2.197	23.5	22.6	1.0	200.2	2.002	24.8	24.0	0.8	1.2	1.0
28	68.4	0.684	22.5	22.8	-0.4						219.7	2.197	23.8	22.6	1.2	200.2	2.002	24.7	24.0	0.7	1.2	1.1
29	63.5	0.635	22.5	22.7	-0.2						219.7	2.197	23.7	22.6	1.1	200.2	2.002	24.7	24.0	0.7	1.2	1.1
30	58.6	0.586	22.3	22.6	-0.2						219.7	2.197	23.9	22.8	1.1	200.2	2.002	24.7	23.9	0.8	1.2	1.1
31	53.7	0.537	22.3	22.7	-0.4						219.7	2.197	23.9	22.8	1.1	195.3	1.953	24.7	24.0	0.7	1.2	1.1
32	53.7	0.537	22.3	22.8	-0.5						219.7	2.197	23.7	22.8	1.0	195.3	1.953	24.7	24.0	0.7	1.2	1.1
33	39.1	0.391	22.5	22.9	-0.4						219.7	2.197	23.7	22.7	1.1	195.3	1.953	24.6	24.0	0.6	1.1	1.1
34	39.1	0.391	22.4	22.8	-0.4						219.7	2.197	23.7	22.7	1.1	190.4	1.904	24.6	24.0	0.6	1.1	1.1
35	34.2	0.342	22.4	22.9	-0.5						219.7	2.197	23.7	22.7	1.1	190.4	1.904	24.7	23.9	0.8	1.1	1.1
36	34.2	0.342	22.4	22.6	-0.2						214.8	2.148	23.6	22.7	1.0	185.5	1.855	24.7	24.0	0.7	1.1	1.1
37	29.3	0.293	22.4	22.8	-0.4						214.8	2.148	23.8	22.8	1.0	185.5	1.855	24.7	23.9	0.8	1.1	1.1
38	29.3	0.293	22.6	22.8	-0.2						214.8	2.148	23.8	22.8	1.0	185.5	1.855	24.6	23.9	0.7	1.1	1.1
39	29.3	0.293	22.6	22.7	-0.1						214.8	2.148	23.4	22.5	1.0	180.7	1.807	24.7	24.1	0.6	1.1	1.1
40	24.4	0.244	22.6	22.9	-0.4						214.8	2.148	23.6	22.7	1.0	175.8	1.758	24.7	24.0	0.7	1.0	1.1
41	24.4	0.244	22.6	22.7	-0.1						214.8	2.148	23.8	22.8	1.0	170.9	1.709	24.7	24.0	0.7	1.0	1.1
42											214.8	2.148	23.7	22.8	0.8	166.0	1.660	24.7	24.0	0.7	1.0	1.1
43											214.8	2.148	23.8	22.7	1.1	161.1	1.611	24.6	24.1	0.5	0.9	1.1
44											210.0	2.100	23.7	22.8	0.8	161.1	1.611	24.7	24.0	0.7	0.9	1.1
45											210.0	2.100	23.5	22.5	1.0	161.1	1.611	24.7	24.0	0.7	0.9	1.1

Table A.2-4 continued...

46	210.0	2.100	23.7	22.7	1.0	156.3	1.563	24.6	24.0	0.6	0.9	1.1
47	210.0	2.100	23.8	22.9	1.0	156.3	1.563	24.8	24.1	0.7	0.9	1.1
48	210.0	2.100	23.7	22.7	1.0	156.3	1.563	24.8	24.1	0.7	0.9	1.1
49	210.0	2.100	23.7	22.7	1.0	156.3	1.563	24.7	24.1	0.6	0.9	1.1
50	205.1	2.051	23.7	22.7	1.0	151.3	1.513	24.7	24.3	0.4	0.9	1.1
51	205.1	2.051	23.5	22.7	0.8	151.4	1.514	24.8	24.2	0.6	0.9	1.1
52	205.1	2.051	23.5	22.8	0.7	151.4	1.514	24.7	24.1	0.6	0.9	1.1
53	200.2	2.002	23.5	22.8	0.7	151.4	1.514	24.7	24.1	0.6	0.9	1.0
54	200.2	2.002	23.7	23.0	0.7	151.4	1.514	24.7	24.1	0.6	0.9	1.0
55	200.2	2.002	23.7	22.9	0.8	146.5	1.465	24.7	24.1	0.6	0.9	1.0
56	200.2	2.002	23.5	22.7	0.8	146.5	1.465	24.7	24.1	0.6	0.9	1.0
57	200.2	2.002	23.5	22.7	0.8	146.5	1.465	24.7	24.1	0.6	0.9	1.0
58	195.3	1.953	23.7	23.1	0.6	141.6	1.416	24.7	24.1	0.6	0.8	1.0
59	195.3	1.953	23.7	22.8	1.0	141.6	1.416	24.7	24.1	0.6	0.8	1.0
60	195.3	1.953	23.7	22.9	0.8	141.6	1.416	24.7	24.1	0.6	0.8	1.0
61	195.3	1.953	23.8	22.9	0.8	141.6	1.416	24.7	24.2	0.5	0.8	1.0
62	190.4	1.904	23.6	22.9	0.7	136.7	1.367	24.7	24.1	0.6	0.8	1.0
63	185.5	1.855	23.8	23.0	0.7	136.7	1.367	24.7	24.1	0.6	0.8	1.0
64	185.5	1.855	23.8	23.0	0.7	136.7	1.367	24.7	24.0	0.7	0.8	1.0
65	180.7	1.807	23.6	22.9	0.7	136.7	1.367	24.7	24.0	0.7	0.8	0.9
66	170.9	1.709	23.6	23.0	0.6	136.7	1.367	24.7	24.0	0.7	0.8	0.9
67	170.9	1.709	23.8	22.9	0.8	131.8	1.318	24.7	24.1	0.6	0.8	0.9
68	166.0	1.660	23.6	22.9	0.7	131.8	1.318	24.6	24.1	0.5	0.7	0.9
69	166.0	1.660	23.6	22.9	0.7	131.8	1.318	24.7	24.3	0.5	0.7	0.9
70	166.0	1.660	23.8	23.0	0.8	131.8	1.318	24.7	24.3	0.5	0.7	0.9
71	166.0	1.660	23.6	22.9	0.7	127.0	1.270	24.7	24.3	0.5	0.7	0.9
72	166.0	1.660	23.5	22.8	0.7	127.0	1.270	24.7	24.3	0.5	0.7	0.9
73	166.0	1.660	23.6	22.9	0.7	127.0	1.270	24.9	24.3	0.6	0.7	0.9
74	166.0	1.660	23.6	22.9	0.7	127.0	1.270	24.8	24.3	0.5	0.7	0.9
75	161.1	1.611	23.5	22.8	0.7	122.1	1.221	24.6	24.1	0.5	0.7	0.8
76	161.1	1.611	23.6	22.9	0.7	122.1	1.221	24.6	24.1	0.5	0.7	0.8
77	161.1	1.611	23.5	22.8	0.7	122.1	1.221	24.6	24.1	0.5	0.7	0.8
78	161.1	1.611	23.6	23.0	0.6	122.1	1.221	24.7	24.1	0.6	0.7	0.8
79	161.1	1.611	23.6	23.0	0.6	122.1	1.221	24.7	24.1	0.6	0.7	0.8
80	161.1	1.611	23.7	23.2	0.5	117.2	1.172	24.7	24.1	0.6	0.7	0.8
81	161.1	1.611	23.7	23.1	0.6	117.2	1.172	24.7	24.1	0.6	0.7	0.8
82	156.3	1.563	23.7	23.1	0.6	117.2	1.172	24.7	24.3	0.5	0.7	0.8
83	156.3	1.563	23.5	22.9	0.6	117.2	1.172	24.7	24.3	0.5	0.7	0.8
84	156.3	1.563	23.5	22.9	0.6	117.2	1.172	24.7	24.3	0.5	0.7	0.8
85	156.3	1.563	23.7	23.0	0.7	117.2	1.172	24.7	24.3	0.5	0.7	0.8
86	156.3	1.563	23.7	23.1	0.6	112.3	1.123	24.7	24.1	0.6	0.7	0.8
87	156.3	1.563	23.5	22.9	0.6	112.3	1.123	24.6	24.1	0.5	0.7	0.8
88	156.3	1.563	23.5	22.9	0.6	112.3	1.123	24.8	24.3	0.5	0.7	0.8
89	151.4	1.514	23.5	22.9	0.6	112.3	1.123	24.8	24.3	0.5	0.7	0.8
90	151.4	1.514	23.5	23.0	0.5	107.4	1.074	24.8	24.2	0.6	0.6	0.8
91	151.4	1.514	23.5	22.9	0.6	107.4	1.074	24.8	24.3	0.5	0.6	0.8
92	151.4	1.514	23.5	23.0	0.5	107.4	1.074	24.6	24.3	0.4	0.6	0.8
93	151.4	1.514	23.6	23.0	0.6	107.4	1.074	24.8	24.3	0.5	0.6	0.8
94	151.4	1.514	23.5	23.0	0.5	107.4	1.074	24.8	24.4	0.4	0.6	0.8
95	151.4	1.514	23.6	23.0	0.6	102.5	1.025	24.8	24.3	0.5	0.6	0.8
96	151.4	1.514	23.5	23.0	0.5	102.5	1.025	24.8	24.3	0.5	0.6	0.8
97	146.5	1.465	23.4	22.9	0.5	102.5	1.025	24.8	24.3	0.5	0.6	0.7
98	146.5	1.465	23.6	23.0	0.6	102.5	1.025	24.8	24.4	0.4	0.6	0.7
99	146.5	1.465	23.6	23.0	0.6	102.5	1.025	24.8	24.4	0.4	0.6	0.7

Table A.2-4 continued...

100	146.5	1.465	23.6	23.0	0.6	102.5	1.025	24.8	24.3	0.5	**0.6**	0.7
101	146.5	1.465	23.6	23.0	0.6	97.7	0.977	24.8	24.4	0.4	**0.6**	0.7
102	146.5	1.465	23.5	23.0	0.5	97.7	0.977	24.8	24.3	0.5	**0.6**	0.7
103	141.6	1.416	23.7	23.2	0.5	97.7	0.977	24.8	24.4	0.4	**0.6**	0.7
104	141.6	1.416	23.8	23.3	0.5	97.7	0.977	24.8	24.4	0.4	**0.6**	0.7
105	141.6	1.416	23.8	23.2	0.6	97.7	0.977	24.8	24.3	0.5	**0.6**	0.7
106	141.6	1.416	23.6	23.1	0.5	97.7	0.977	24.8	24.3	0.5	**0.6**	0.7
107	141.6	1.416	23.6	23.4	0.2	97.7	0.977	24.8	24.3	0.5	**0.6**	0.7
108	141.6	1.416	23.8	23.4	0.4	92.8	0.928	24.8	24.3	0.5	**0.6**	0.7
109	141.6	1.416	23.7	23.3	0.4	92.8	0.928	24.8	24.3	0.5	**0.6**	0.7
110	141.6	1.416	23.5	23.0	0.5	92.8	0.928	24.8	24.3	0.5	**0.6**	0.7
111	136.7	1.367	23.7	23.2	0.5	92.8	0.928	24.8	24.4	0.4	**0.6**	0.7
112	136.7	1.367	23.7	23.2	0.5	92.8	0.928	24.8	24.4	0.4	**0.6**	0.7
113	136.7	1.367	23.3	23.0	0.4	87.9	0.879	24.8	24.3	0.5	**0.6**	0.7
114	136.7	1.367	23.3	23.1	0.2	87.9	0.879	24.7	24.3	0.4	**0.6**	0.7
115	136.7	1.367	23.5	23.1	0.4	87.9	0.879	24.7	24.3	0.4	**0.6**	0.7
116	136.7	1.367	23.5	23.1	0.4	87.9	0.879	24.7	24.3	0.4	**0.6**	0.7
117	136.7	1.367	23.6	23.3	0.4	92.8	0.928	24.7	22.5	2.2	**0.6**	0.7
118	131.8	1.318	23.5	23.1	0.4	97.7	0.977	24.6	20.6	4.0	**0.6**	0.7
119	131.8	1.318	23.5	23.1	0.4	102.5	1.025	24.5	20.1	4.3	**0.6**	0.7
120	131.8	1.318	23.6	23.3	0.4	107.4	1.074	24.2	20.8	3.5	**0.6**	0.7
121	131.8	1.318	23.3	22.9	0.4	107.4	1.074	24.5	21.9	2.6	**0.6**	0.7
122	131.8	1.318	23.3	22.9	0.4	112.3	1.123	24.7	22.4	2.3	**0.6**	0.7
123	131.8	1.318	23.3	22.9	0.4	107.4	1.074	24.7	22.7	2.0	**0.6**	0.7
124	127.0	1.270	23.6	23.2	0.4	107.4	1.074	24.6	22.8	1.8	**0.6**	0.7
125	127.0	1.270	23.6	23.2	0.4	107.4	1.074	24.7	23.0	1.7	**0.6**	0.7
126	127.0	1.270	23.5	23.2	0.2	107.4	1.074	24.7	23.3	1.4	**0.6**	0.7
127	127.0	1.270	23.4	22.9	0.5	107.4	1.074	24.7	23.3	1.4	**0.6**	0.7
128	127.0	1.270	23.6	23.4	0.2	102.5	1.025	24.8	23.5	1.3	**0.6**	0.7
129	127.0	1.270	23.5	23.3	0.2	102.5	1.025	24.8	23.6	1.2	**0.6**	0.7
130	127.0	1.270	23.5	23.3	0.2	102.5	1.025	24.9	23.8	1.1	**0.6**	0.7
131	122.1	1.221	23.5	23.3	0.2	102.5	1.025	24.9	23.8	1.1	**0.6**	0.7
132	122.1	1.221	23.5	23.1	0.4	97.7	0.977	24.9	23.9	1.0	**0.5**	0.6
133	122.1	1.221	23.5	23.3	0.2	97.7	0.977	24.9	23.9	1.0	**0.5**	0.6
134	122.1	1.221	23.5	23.2	0.2	92.8	0.928	24.7	23.8	0.8	**0.5**	0.6
135	122.1	1.221	23.5	23.2	0.2	97.7	0.977	24.7	23.8	0.8	**0.5**	0.6
136	122.1	1.221	23.6	23.3	0.4	92.8	0.928	24.6	23.8	0.7	**0.5**	0.6
137	122.1	1.221	23.6	23.3	0.4	92.8	0.928	24.7	24.0	0.7	**0.5**	0.6
138	117.2	1.172	23.8	23.4	0.4	92.8	0.928	24.7	24.1	0.6	**0.5**	0.6
139	136.7	1.367	22.9	17.0	5.9	92.8	0.928	24.7	24.0	0.7	**0.6**	0.7
140	146.5	1.465	23.0	18.5	4.5	87.9	0.879	24.7	24.1	0.6	**0.6**	0.7
141	151.4	1.514	23.3	19.6	3.7	87.9	0.879	24.7	24.1	0.6	**0.6**	0.7
142	151.4	1.514	23.4	20.5	2.9	87.9	0.879	24.7	24.1	0.6	**0.6**	0.7
143	151.4	1.514	23.5	21.3	2.2	83.0	0.830	24.7	24.1	0.6	**0.6**	0.7
144	151.4	1.514	23.6	21.7	1.9	83.0	0.830	24.8	24.1	0.7	**0.6**	0.7
145	151.4	1.514	23.6	22.1	1.6	83.0	0.830	24.8	24.1	0.7	**0.6**	0.7
146	151.4	1.514	23.6	22.3	1.3	83.0	0.830	24.7	24.1	0.6	**0.6**	0.7
147	146.5	1.465	23.8	22.6	1.2	83.0	0.830	24.9	23.3	1.6	**0.6**	0.7
148	146.5	1.465	23.7	22.5	1.2	83.0	0.830	24.9	23.4	1.4	**0.6**	0.7
149	146.5	1.465	23.7	22.7	1.0	83.0	0.830	24.7	23.4	1.3	**0.6**	0.7
150	146.5	1.465	23.6	22.9	0.7	83.0	0.830	24.9	23.7	1.2	**0.6**	0.7
151	141.6	1.416	23.6	22.9	0.7	83.0	0.830	24.9	23.9	1.0	**0.6**	0.7
152	141.6	1.416	23.8	23.0	0.7	83.0	0.830	24.6	23.7	0.8	**0.6**	0.7
153	141.6	1.416	23.6	23.2	0.5	83.0	0.830	24.9	24.2	0.7	**0.6**	0.7

Table A.2-4 continued...

154	136.7	1.367	23.8	23.2	0.6	78.1	0.781	24.8	24.1	0.7	0.5	0.7
155	136.7	1.367	23.6	23.0	0.6	73.2	0.732	24.6	24.0	0.6	0.5	0.7
156	136.7	1.367	23.8	23.3	0.5	78.1	0.781	24.7	24.1	0.6	0.5	0.7
157	136.7	1.367	23.7	23.2	0.5	73.2	0.732	24.7	24.1	0.6	0.5	0.7
158	136.7	1.367	23.7	23.3	0.4	73.2	0.732	24.6	23.8	0.7	0.5	0.7
159	131.8	1.318	23.9	23.5	0.4	73.2	0.732	24.7	24.0	0.7	0.5	0.6
160	131.8	1.318	23.9	23.4	0.5	73.2	0.732	24.7	24.0	0.7	0.5	0.6
161	131.8	1.318	23.9	23.5	0.4	73.2	0.732	24.9	24.3	0.6	0.5	0.6
162	127.0	1.270	23.7	23.5	0.2	73.2	0.732	24.9	24.3	0.6	0.5	0.6
163	127.0	1.270	23.7	23.3	0.4	68.4	0.684	24.7	24.1	0.6	0.5	0.6
164	127.0	1.270	23.7	23.5	0.2	68.4	0.684	24.7	24.1	0.6	0.5	0.6
165	122.1	1.221	23.7	23.4	0.4	68.4	0.684	24.7	24.1	0.6	0.5	0.6
166	122.1	1.221	23.7	23.5	0.2	68.4	0.684	24.7	24.1	0.6	0.5	0.6
167	122.1	1.221	23.7	23.5	0.2	63.5	0.635	24.8	24.2	0.6	0.5	0.6
168	122.1	1.221	23.6	23.3	0.2	63.5	0.635	24.7	24.1	0.6	0.5	0.6
169	117.2	1.172	23.7	23.5	0.2	63.5	0.635	24.9	24.3	0.6	0.5	0.6
170	117.2	1.172	23.6	23.6	0.0	63.5	0.635	24.7	24.1	0.6	0.5	0.6
171	117.2	1.172	23.6	23.5	0.1	63.5	0.635	24.7	24.0	0.7	0.5	0.6
172	117.2	1.172	23.6	23.5	0.1	63.5	0.635	24.9	24.1	0.7	0.5	0.6
173	117.2	1.172	23.6	23.6	0.0	63.5	0.635	24.7	24.1	0.6	0.5	0.6
174	112.3	1.123	23.6	23.6	0.0	58.6	0.586	24.9	24.3	0.6	0.4	0.5
175	112.3	1.123	23.8	23.8	0.0	58.6	0.586	24.7	24.1	0.6	0.4	0.5
176	112.3	1.123	23.8	23.7	0.1	58.6	0.586	24.9	24.3	0.6	0.4	0.5
177	112.3	1.123	23.6	23.6	0.0	58.6	0.586	24.9	24.4	0.5	0.4	0.5
178	107.4	1.074	23.6	23.5	0.1	58.6	0.586	24.7	24.2	0.5	0.4	0.5
179	107.4	1.074	23.8	23.7	0.1	58.6	0.586	24.7	24.1	0.6	0.4	0.5
180	107.4	1.074	23.6	23.5	0.1	58.6	0.586	24.9	24.4	0.5	0.4	0.5
181	107.4	1.074	23.6	23.6	0.0	53.7	0.537	24.9	24.4	0.5	0.4	0.5
182	102.5	1.025	23.6	23.6	0.0	53.7	0.537	24.7	24.4	0.4	0.4	0.5
183	102.5	1.025	23.8	23.7	0.1	53.7	0.537	24.9	24.4	0.5	0.4	0.5
184	102.5	1.025	23.7	23.7	0.0	53.7	0.537	24.7	24.3	0.5	0.4	0.5
185	102.5	1.025	23.7	23.5	0.1	53.7	0.537	24.9	24.3	0.6	0.4	0.5
186	102.5	1.025	23.7	23.7	0.0	48.8	0.488	24.9	24.4	0.5	0.4	0.5
187	102.5	1.025	23.5	23.6	-0.1	48.8	0.488	24.7	24.3	0.5	0.4	0.5
188	97.7	0.977	23.3	23.4	-0.1	48.8	0.488	24.7	24.4	0.4	0.4	0.5
189	97.7	0.977	23.6	23.5	0.1	48.8	0.488	24.7	24.3	0.5	0.4	0.5
190	97.7	0.977	23.6	23.6	0.0						0.2	0.5
191	97.7	0.977	23.6	23.6	0.0						0.2	0.5
192	97.7	0.977	23.4	23.4	0.0						0.2	0.5
193	97.7	0.977	23.6	23.7	-0.1						0.2	0.5
194	92.8	0.928	23.6	23.6	0.0						0.2	0.5
195	92.8	0.928	23.8	23.8	0.0						0.2	0.5
196	92.8	0.928	23.6	23.6	0.0						0.2	0.5
197	92.8	0.928	23.5	23.6	-0.1						0.2	0.5
198	92.8	0.928	23.5	23.6	-0.1						0.2	0.5
199	87.9	0.879	23.5	23.7	-0.2						0.2	0.4
200	92.8	0.928	23.6	23.7	-0.1						0.2	0.5
201	87.9	0.879	23.6	23.7	-0.1						0.2	0.4
202	87.9	0.879	23.6	23.7	-0.1						0.2	0.4
203	87.9	0.879	23.5	23.7	-0.2						0.2	0.4
204	83.0	0.830	23.5	23.7	-0.2						0.2	0.4
205	83.0	0.830	23.5	23.6	-0.1						0.2	0.4
206	83.0	0.830	23.7	23.8	-0.1						0.2	0.4
207	83.0	0.830	23.8	24.1	-0.2						0.2	0.4

Table A.2-5 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was empty and no carbon dioxide was added.

						Replicate No.																
Sample No.	E21-0					E22-0					E23-0					E24-0						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	Mean	SD
0	253.9	2.539	23.2	22.0	1.2	253.9	2.539	20.9	19.2	1.7	253.9	2.539	26.9	25.8	1.1	253.9	2.539	21.2	21.6	-0.5	2.5	0.0
1	229.5	2.295	23.1	22.3	0.8	200.2	2.002	20.5	19.2	1.2	224.6	2.246	26.4	25.7	0.7	249.0	2.490	21.4	22.0	-0.6	2.3	0.2
2	224.6	2.246	23.1	22.3	0.8	170.9	1.709	20.2	19.1	1.1	219.7	2.197	26.2	25.7	0.5	249.0	2.490	21.3	21.9	-0.6	2.2	0.3
3	214.8	2.148	23.1	22.3	0.8	146.5	1.465	20.1	19.1	1.0	214.8	2.148	26.2	25.6	0.6	244.1	2.441	21.3	21.9	-0.6	2.1	0.4
4	214.8	2.148	23.1	22.4	0.7	127.0	1.270	20.1	19.4	0.7	214.8	2.148	25.8	22.5	3.2	244.1	2.441	21.4	21.9	-0.5	2.0	0.5
5	210.0	2.100	23.0	22.3	0.7	107.4	1.074	20.0	19.3	0.7	214.8	2.148	25.8	23.6	2.2	239.3	2.393	21.4	21.9	-0.5	1.9	0.6
6	210.0	2.100	23.2	22.4	0.7	92.8	0.928	20.1	19.2	1.0	214.8	2.148	25.8	24.4	1.4	239.3	2.393	21.6	22.1	-0.5	1.9	0.7
7	205.1	2.051	23.2	22.6	0.6	78.1	0.781	20.1	19.3	0.9	214.8	2.148	25.4	24.3	1.1	239.3	2.393	21.6	22.0	-0.4	1.8	0.7
8	200.2	2.002	23.2	22.6	0.6	68.4	0.684	20.0	19.2	0.9	214.8	2.148	25.6	24.5	1.1	234.4	2.344	21.6	22.0	-0.4	1.8	0.8
9	200.2	2.002	23.2	22.6	0.6	58.6	0.586	20.3	19.3	1.0	214.8	2.148	25.6	24.7	0.8	234.4	2.344	21.8	22.1	-0.4	1.8	0.8
10	195.3	1.953	23.1	22.6	0.5	48.8	0.488	20.3	19.2	1.1	214.8	2.148	25.5	25.0	0.5	229.5	2.295	21.8	22.1	-0.4	1.7	0.8
11	190.4	1.904	22.8	22.3	0.5						214.8	2.148	25.5	25.1	0.4	229.5	2.295	21.9	22.3	-0.4	1.6	1.1
12	190.4	1.904	23.1	22.6	0.5						214.8	2.148	25.5	25.1	0.4	229.5	2.295	21.8	22.1	-0.4	1.6	1.1
13	185.5	1.855	23.1	22.6	0.5						214.8	2.148	25.5	25.3	0.2	224.6	2.246	21.9	22.3	-0.4	1.6	1.1
14	185.5	1.855	23.1	22.6	0.5						214.8	2.148	25.5	25.3	0.2	224.6	2.246	21.9	22.2	-0.2	1.6	1.1
15	180.7	1.807	23.0	22.5	0.5						214.8	2.148	25.5	25.3	0.2	224.6	2.246	22.0	22.0	0.0	1.6	1.1
16	180.7	1.807	23.1	21.9	1.2						214.8	2.148	25.5	25.3	0.2	219.7	2.197	22.0	22.2	-0.1	1.5	1.0
17	175.8	1.758	23.1	22.5	0.6						214.8	2.148	25.5	25.2	0.4	219.7	2.197	22.1	22.2	-0.1	1.5	1.0
18	175.8	1.758	23.1	22.4	0.7						214.8	2.148	25.4	25.3	0.1	219.7	2.197	22.2	22.3	-0.1	1.5	1.0
19	170.9	1.709	22.9	22.1	0.8						214.8	2.148	25.6	25.5	0.1	219.7	2.197	22.2	22.3	-0.1	1.5	1.0
20	166.0	1.660	23.1	22.6	0.5						214.8	2.148	25.6	25.5	0.1	214.8	2.148	22.4	22.5	-0.1	1.5	1.0
21	161.1	1.611	23.0	22.8	0.1						214.8	2.148	25.6	25.3	0.2	214.8	2.148	22.4	22.5	-0.1	1.5	1.0
22	161.1	1.611	23.1	22.8	0.2						214.8	2.148	25.5	25.3	0.1	214.8	2.148	22.4	22.4	0.0	1.5	1.0
23	161.1	1.611	23.1	22.7	0.4						214.8	2.148	25.5	25.5	0.0	214.8	2.148	22.4	22.4	0.0	1.5	1.0
24	156.3	1.563	23.0	22.7	0.2						214.8	2.148	25.5	25.5	0.0	210.0	2.100	22.4	22.3	0.1	1.5	1.0
25	156.3	1.563	23.1	22.9	0.2						210.0	2.100	25.6	25.5	0.1	210.0	2.100	22.4	22.3	0.1	1.4	1.0
26	151.4	1.514	23.0	22.7	0.2						210.0	2.100	25.5	25.0	0.5	210.0	2.100	22.4	22.4	0.0	1.4	1.0
27	151.4	1.514	23.0	22.9	0.1						210.0	2.100	25.3	24.9	0.5	210.0	2.100	22.5	22.4	0.1	1.4	1.0
28	146.5	1.465	23.0	22.8	0.2						210.0	2.100	25.5	25.1	0.4	210.0	2.100	22.5	21.4	1.1	1.4	1.0
29	146.5	1.465	23.0	22.5	0.5						210.0	2.100	25.5	25.1	0.4	210.0	2.100	22.5	21.4	1.1	1.4	1.0
30	141.6	1.416	23.0	22.2	0.7						210.0	2.100	25.7	25.2	0.5	210.0	2.100	22.6	21.7	0.8	1.4	1.0
31	136.7	1.367	23.1	22.2	0.8						210.0	2.100	25.5	25.0	0.5	210.0	2.100	22.7	22.0	0.7	1.4	1.0
32	136.7	1.367	22.8	22.4	0.5						210.0	2.100	25.0	24.8	0.2	210.0	2.100	22.7	22.2	0.5	1.4	1.0
33	136.7	1.367	23.1	22.4	0.7						210.0	2.100	25.0	24.8	0.2	205.1	2.051	22.8	22.4	0.5	1.4	1.0
34	136.7	1.367	23.1	22.4	0.7						210.0	2.100	25.2	25.0	0.2	205.1	2.051	22.6	22.2	0.4	1.4	1.0
35	127.0	1.270	23.1	22.5	0.6						210.0	2.100	25.2	25.0	0.2	205.1	2.051	22.8	22.5	0.4	1.4	1.0
36	127.0	1.270	23.0	22.2	0.7						210.0	2.100	25.0	24.8	0.2	205.1	2.051	22.8	22.5	0.4	1.4	1.0
37	122.1	1.221	23.0	22.2	0.8						210.0	2.100	25.0	24.9	0.1	200.2	2.002	22.7	22.4	0.2	1.3	1.0
38	122.1	1.221	23.0	22.2	0.8						210.0	2.100	25.0	24.9	0.1	200.2	2.002	22.8	22.6	0.2	1.3	1.0
39	117.2	1.172	22.8	21.8	1.1						210.0	2.100	25.0	24.9	0.1	200.2	2.002	22.8	22.6	0.2	1.3	1.0
40	117.2	1.172	22.8	21.6	1.2						210.0	2.100	25.0	24.9	0.1	200.2	2.002	22.8	22.6	0.2	1.3	1.0
41	112.3	1.123	22.8	21.5	1.3						210.0	2.100	25.0	24.9	0.1	200.2	2.002	22.8	22.6	0.2	1.3	1.0
42	112.3	1.123	22.8	21.4	1.4						210.0	2.100	25.1	25.0	0.1	195.3	1.953	22.8	22.6	0.2	1.3	1.0
43	107.4	1.074	23.0	21.6	1.3						210.0	2.100	25.0	24.8	0.2	195.3	1.953	22.8	22.6	0.2	1.3	1.0
44	107.4	1.074	22.8	21.5	1.3						210.0	2.100	25.2	25.1	0.1	195.3	1.953	23.0	22.8	0.2	1.3	1.0
45	102.5	1.025	22.7	21.4	1.3						205.1	2.051	25.0	24.9	0.1	195.3	1.953	23.1	22.8	0.4	1.3	1.0

Table A.2-5 continued...

46	102.5	1.025	22.5	21.1	1.4
47	146.5	1.465	20.2	12.6	7.6
48	146.5	1.465	20.6	13.4	7.2
49	136.7	1.367	21.1	16.5	4.6
50	127.0	1.270	21.3	17.3	4.0
51	127.0	1.270	21.4	18.7	2.7
52	122.1	1.221	21.5	19.3	2.2
53	122.1	1.221	21.6	19.8	1.8
54	122.1	1.221	21.6	20.2	1.4
55	122.1	1.221	21.5	20.2	1.3
56	122.1	1.221	21.7	20.4	1.3
57	122.1	1.221	21.6	20.8	0.8
58	122.1	1.221	21.5	20.9	0.6
59	122.1	1.221	21.5	20.9	0.6
60	122.1	1.221	21.7	21.2	0.5
61	122.1	1.221	21.7	21.2	0.5
62	122.1	1.221	21.7	21.2	0.5
63	122.1	1.221	21.7	21.2	0.5
64	122.1	1.221	21.8	21.5	0.2
65	122.1	1.221	21.9	21.4	0.5
66	122.1	1.221	21.9	21.7	0.2
67	122.1	1.221	21.9	21.7	0.2
68	117.2	1.172	21.9	21.7	0.2
69	117.2	1.172	22.1	21.9	0.2
70	117.2	1.172	22.1	21.7	0.4
71	117.2	1.172	22.1	21.9	0.2
72	117.2	1.172	22.0	21.7	0.2
73	117.2	1.172	22.3	21.9	0.4
74	117.2	1.172	22.1	21.8	0.4
75	117.2	1.172	22.1	21.9	0.2
76	112.3	1.123	22.1	21.8	0.4
77	112.3	1.123	22.1	21.9	0.2
78	107.4	1.074	22.3	21.8	0.5
79	107.4	1.074	22.3	22.1	0.1
80	102.5	1.025	22.3	21.8	0.5
81	102.5	1.025	22.4	21.8	0.6
82	97.7	0.977	22.4	22.2	0.2
83	127.0	1.270	20.7	16.9	3.8
84	131.8	1.318	20.6	15.2	5.4
85	141.6	1.416	20.7	15.9	4.8
86	131.8	1.318	20.8	16.5	4.3
87	122.1	1.221	21.3	18.4	2.9
88	117.2	1.172	21.5	18.8	2.7
89	107.4	1.074	21.7	19.5	2.2
90	107.4	1.074	21.6	20.1	1.6
91	102.5	1.025	21.7	20.4	1.3
92	102.5	1.025	21.7	20.7	1.1
93	102.5	1.025	21.6	20.8	0.8
94	102.5	1.025	21.8	21.1	0.7
95	102.5	1.025	21.8	21.1	0.7
96	97.7	0.977	21.7	21.1	0.6
97	97.7	0.977	21.9	21.3	0.6
98	97.7	0.977	22.0	21.6	0.5
99	97.7	0.977	21.8	21.4	0.4

210.0	2.100	25.2	25.1	0.1	195.3	1.953	23.0	22.9	0.1	**1.3**	1.0
205.1	2.051	25.2	25.1	0.1	195.3	1.953	23.1	22.9	0.2	**1.4**	0.9
205.1	2.051	25.1	25.1	0.0	195.3	1.953	23.3	22.9	0.4	**1.4**	0.9
205.1	2.051	25.2	25.1	0.1	195.3	1.953	23.3	22.9	0.4	**1.3**	0.9
205.1	2.051	25.0	24.9	0.1	190.4	1.904	23.2	22.9	0.2	**1.3**	0.9
205.1	2.051	24.9	25.0	-0.1	190.4	1.904	23.3	22.9	0.4	**1.3**	0.9
205.1	2.051	25.2	25.2	0.0	190.4	1.904	23.3	22.9	0.4	**1.3**	0.9
205.1	2.051	25.2	25.0	0.2	190.4	1.904	23.3	22.8	0.5	**1.3**	0.9
205.1	2.051	25.2	25.1	0.1	190.4	1.904	23.2	22.9	0.2	**1.3**	0.9
205.1	2.051	25.2	25.2	0.0	190.4	1.904	23.3	22.9	0.4	**1.3**	0.9
205.1	2.051	25.2	25.0	0.2	185.5	1.855	23.4	23.1	0.2	**1.3**	0.9
205.1	2.051	25.2	25.1	0.1	185.5	1.855	23.5	23.0	0.5	**1.3**	0.9
205.1	2.051	25.2	25.1	0.1	185.5	1.855	23.5	23.0	0.5	**1.3**	0.9
205.1	2.051	25.2	25.0	0.2	185.5	1.855	23.5	22.9	0.6	**1.3**	0.9
205.1	2.051	25.1	25.0	0.1	185.5	1.855	23.5	22.9	0.6	**1.3**	0.9
205.1	2.051	25.1	25.1	0.0	185.5	1.855	23.6	23.3	0.4	**1.3**	0.9
205.1	2.051	25.2	25.1	0.1	180.7	1.807	23.6	23.2	0.5	**1.3**	0.9
205.1	2.051	25.2	25.1	0.1	180.7	1.807	23.6	23.2	0.5	**1.3**	0.9
205.1	2.051	25.1	25.0	0.1	180.7	1.807	23.6	23.0	0.6	**1.3**	0.9
200.2	2.002	25.1	25.1	0.0	180.7	1.807	23.6	23.2	0.5	**1.3**	0.9
200.2	2.002	25.1	25.1	0.0	180.7	1.807	23.5	23.2	0.4	**1.3**	0.9
200.2	2.002	25.1	25.1	0.0	180.7	1.807	23.5	23.2	0.4	**1.3**	0.9
200.2	2.002	25.1	25.1	0.0	180.7	1.807	23.6	23.2	0.5	**1.2**	0.9
200.2	2.002	25.1	25.1	0.0	180.7	1.807	23.6	23.2	0.5	**1.2**	0.9
200.2	2.002	25.1	25.0	0.1	180.7	1.807	23.6	23.2	0.5	**1.2**	0.9
200.2	2.002	25.1	24.9	0.2	175.8	1.758	23.8	23.3	0.5	**1.2**	0.9
200.2	2.002	25.1	24.7	0.4	175.8	1.758	23.8	23.2	0.6	**1.2**	0.9
200.2	2.002	25.1	24.7	0.4	175.8	1.758	23.6	23.0	0.6	**1.2**	0.9
200.2	2.002	25.1	24.9	0.2	175.8	1.758	23.6	23.0	0.6	**1.2**	0.9
200.2	2.002	25.1	25.1	0.0	175.8	1.758	23.8	23.3	0.5	**1.2**	0.9
200.2	2.002	25.2	25.1	0.1	175.8	1.758	23.8	23.3	0.5	**1.2**	0.9
200.2	2.002	25.1	25.0	0.1	175.8	1.758	23.8	23.3	0.5	**1.2**	0.9
200.2	2.002	25.1	24.9	0.2	175.8	1.758	24.0	23.4	0.6	**1.2**	0.9
200.2	2.002	25.1	25.0	0.1	175.8	1.758	23.9	23.3	0.6	**1.2**	0.9
200.2	2.002	25.1	25.1	0.0	175.8	1.758	23.9	23.3	0.6	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	175.8	1.758	23.9	23.4	0.5	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	175.8	1.758	23.9	23.5	0.4	**1.2**	0.9
195.3	1.953	25.1	24.9	0.2	170.9	1.709	23.9	23.4	0.5	**1.2**	0.9
200.2	2.002	25.1	24.9	0.2	170.9	1.709	24.0	23.4	0.6	**1.3**	0.9
195.3	1.953	25.1	25.0	0.1	170.9	1.709	24.0	23.4	0.6	**1.3**	0.9
195.3	1.953	25.1	25.0	0.1	170.9	1.709	24.0	23.5	0.5	**1.2**	0.9
195.3	1.953	25.1	25.1	0.0	170.9	1.709	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.1	0.0	170.9	1.709	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.1	0.0	170.9	1.709	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	170.9	1.709	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	170.9	1.709	24.0	23.5	0.5	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	170.9	1.709	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	24.9	0.2	166.0	1.660	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.0	23.4	0.6	**1.2**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.0	23.4	0.6	**1.1**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.0	23.6	0.5	**1.1**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.2	23.4	0.7	**1.1**	0.9
195.3	1.953	25.1	25.1	0.0	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9

Table A.2-5 continued...

100	97.7	0.977	22.0	21.4	0.6
101	97.7	0.977	21.9	21.3	0.6
102	97.7	0.977	22.1	21.6	0.5
103	97.7	0.977	22.1	21.6	0.5
104	97.7	0.977	22.1	21.5	0.6
105	97.7	0.977	22.3	21.8	0.5
106	97.7	0.977	22.3	21.9	0.4
107	97.7	0.977	22.3	21.9	0.4
108	97.7	0.977	22.3	21.9	0.4
109	97.7	0.977	22.3	21.9	0.4
110	97.7	0.977	22.3	21.9	0.4
111	92.8	0.928	22.4	22.0	0.5
112	92.8	0.928	22.3	22.1	0.2
113	92.8	0.928	22.4	21.8	0.6
114	92.8	0.928	22.6	22.2	0.4
115	92.8	0.928	22.5	22.1	0.4
116	92.8	0.928	22.6	22.0	0.6
117	87.9	0.879	22.6	22.0	0.6
118	87.9	0.879	22.6	22.1	0.5
119	87.9	0.879	22.6	22.0	0.6
120	83.0	0.830	22.4	21.6	0.8
121	83.0	0.830	22.4	21.4	1.0
122	83.0	0.830	22.4	21.7	0.7
123	83.0	0.830	22.4	21.3	1.1
124	78.1	0.781	22.4	21.4	1.0
125	78.1	0.781	22.4	21.3	1.1
126	78.1	0.781	22.5	21.3	1.2
127	73.2	0.732	22.3	21.0	1.3
128	73.2	0.732	22.3	21.0	1.3
129	73.2	0.732	22.2	21.1	1.1
130	68.4	0.684	22.2	21.0	1.2
131	68.4	0.684	22.3	21.1	1.2
132	68.4	0.684	22.3	21.0	1.3
133	68.4	0.684	22.2	20.9	1.3
134	63.5	0.635	22.1	20.9	1.2
135	63.5	0.635	22.2	20.6	1.6
136	63.5	0.635	22.1	20.8	1.3
137	63.5	0.635	22.1	20.8	1.3
138	58.6	0.586	22.1	20.8	1.3
139	58.6	0.586	22.1	21.0	1.1
140	58.6	0.586	22.1	21.0	1.1
141	58.6	0.586	22.0	20.9	1.1
142	58.6	0.586	22.0	20.9	1.1
143	58.6	0.586	22.0	20.8	1.2
144	53.7	0.537	22.0	21.0	1.0
145	53.7	0.537	22.0	20.9	1.1
146	53.7	0.537	22.0	20.9	1.1
147	53.7	0.537	21.8	20.6	1.2
148	53.7	0.537	21.8	20.6	1.2
149	53.7	0.537	21.7	20.6	1.1
150	48.8	0.488	21.8	20.6	1.2
151	48.8	0.488	21.8	20.6	1.2
152	48.8	0.488	21.8	20.7	1.1
153	48.8	0.488	21.8	20.8	1.0

195.3	1.953	25.1	25.1	0.0	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9
195.3	1.953	25.1	24.9	0.2	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.0	23.4	0.6	**1.1**	0.9
195.3	1.953	25.1	25.0	0.1	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9
190.4	1.904	25.0	25.1	-0.1	166.0	1.660	24.2	23.6	0.6	**1.1**	0.9
190.4	1.904	25.1	25.2	-0.1	166.0	1.660	24.2	23.4	0.7	**1.1**	0.9
190.4	1.904	25.1	25.1	0.0	161.1	1.611	24.0	23.4	0.6	**1.1**	0.8
190.4	1.904	25.1	25.0	0.1	161.1	1.611	24.0	23.6	0.5	**1.1**	0.8
190.4	1.904	25.1	25.1	0.0	161.1	1.611	24.2	23.6	0.6	**1.1**	0.8
190.4	1.904	25.1	25.1	0.0	161.1	1.611	24.2	23.7	0.5	**1.1**	0.8
190.4	1.904	25.2	25.0	0.2	161.1	1.611	24.3	23.6	0.7	**1.1**	0.8
190.4	1.904	25.1	25.1	0.0	161.1	1.611	24.0	23.4	0.6	**1.1**	0.8
190.4	1.904	25.1	24.9	0.2	161.1	1.611	24.2	23.6	0.6	**1.1**	0.8
190.4	1.904	25.1	24.9	0.2	161.1	1.611	24.2	23.7	0.5	**1.1**	0.8
190.4	1.904	25.1	24.6	0.5	161.1	1.611	24.2	23.6	0.6	**1.1**	0.8
190.4	1.904	25.1	24.7	0.4	161.1	1.611	24.3	23.7	0.6	**1.1**	0.8
190.4	1.904	25.1	25.1	0.0	161.1	1.611	24.3	23.6	0.7	**1.1**	0.8
190.4	1.904	24.7	21.5	3.2	161.1	1.611	24.2	23.6	0.6	**1.1**	0.8
190.4	1.904	24.5	20.8	3.7	161.1	1.611	24.2	23.7	0.5	**1.1**	0.8
190.4	1.904	24.2	21.2	3.0	161.1	1.611	24.2	23.6	0.6	**1.1**	0.9
190.4	1.904	24.2	21.8	2.4	161.1	1.611	24.2	23.7	0.5	**1.1**	0.9
190.4	1.904	24.2	22.3	1.9	161.1	1.611	24.3	23.7	0.6	**1.1**	0.9
190.4	1.904	24.2	22.9	1.3	156.3	1.563	24.3	23.7	0.6	**1.1**	0.8
185.5	1.855	24.4	23.2	1.2	156.3	1.563	24.3	23.7	0.6	**1.0**	0.8
190.4	1.904	24.2	23.3	1.0	156.3	1.563	24.2	23.6	0.6	**1.1**	0.8
190.4	1.904	24.4	23.6	0.8	156.3	1.563	24.3	23.7	0.6	**1.1**	0.8
190.4	1.904	24.4	23.8	0.6	156.3	1.563	24.3	23.6	0.7	**1.0**	0.9
190.4	1.904	24.2	23.8	0.5	156.3	1.563	24.3	23.7	0.6	**1.0**	0.9
190.4	1.904	24.4	23.6	0.7	156.3	1.563	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	24.5	23.9	0.6	156.3	1.563	24.3	23.6	0.7	**1.0**	0.9
190.4	1.904	24.5	24.0	0.5	156.3	1.563	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	24.4	24.2	0.2	156.3	1.563	24.3	23.6	0.7	**1.0**	0.9
190.4	1.904	24.5	24.2	0.4	156.3	1.563	24.2	23.6	0.6	**1.0**	0.9
190.4	1.904	24.4	24.0	0.4	156.3	1.563	24.2	23.6	0.6	**1.0**	0.9
190.4	1.904	24.4	24.2	0.2	156.3	1.563	24.2	23.6	0.6	**1.0**	0.9
190.4	1.904	24.4	24.0	0.4	156.3	1.563	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	24.6	24.5	0.1	156.3	1.563	24.2	23.6	0.6	**1.0**	0.9
190.4	1.904	24.4	22.2	2.2	156.3	1.563	24.3	23.6	0.7	**1.0**	0.9
190.4	1.904	24.2	22.5	1.7	156.3	1.563	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	24.0	21.9	2.2	156.3	1.563	24.3	23.7	0.6	**1.0**	0.9
190.4	1.904	23.8	21.6	2.3	156.3	1.563	24.2	23.6	0.6	**1.0**	0.9
190.4	1.904	23.8	21.0	2.9	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	23.5	20.3	3.2	151.4	1.514	24.3	23.7	0.6	**1.0**	0.9
190.4	1.904	23.0	20.0	3.0	151.4	1.514	24.3	23.6	0.7	**1.0**	0.9
185.5	1.855	23.2	20.3	2.9	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
185.5	1.855	22.9	19.4	3.5	151.4	1.514	24.2	23.6	0.6	**1.0**	0.9
185.5	1.855	22.8	20.3	2.5	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
185.5	1.855	22.7	21.0	1.7	151.4	1.514	24.3	23.6	0.7	**1.0**	0.9
185.5	1.855	23.0	21.7	1.3	151.4	1.514	24.5	23.9	0.6	**1.0**	0.9
185.5	1.855	23.0	22.2	0.8	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
185.5	1.855	23.0	22.4	0.6	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	23.4	22.9	0.5	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
185.5	1.855	23.4	23.0	0.4	151.4	1.514	24.3	23.7	0.6	**1.0**	0.9

Table A.2-5 continued...

154	48.8	0.488	21.8	20.9	0.8
155	48.8	0.488	21.8	21.1	0.7
156	48.8	0.488	21.8	21.1	0.7
157	48.8	0.488	21.8	21.0	0.8
158	53.7	0.537	21.7	21.2	0.5
159	53.7	0.537	21.7	21.2	0.5
160	53.7	0.537	21.7	21.2	0.5
161	53.7	0.537	21.8	21.4	0.4
162	53.7	0.537	21.9	21.3	0.6
163	53.7	0.537	21.9	21.4	0.5
164	53.7	0.537	21.9	21.4	0.5
165	58.6	0.586	21.9	21.6	0.4
166	58.6	0.586	22.0	21.6	0.5
167	58.6	0.586	21.9	21.6	0.4
168	58.6	0.586	21.9	21.6	0.4
169	58.6	0.586	21.9	21.6	0.4
170	58.6	0.586	21.9	21.7	0.2
171	58.6	0.586	22.0	21.6	0.5
172	58.6	0.586	22.0	21.4	0.6
173	58.6	0.586	22.0	21.6	0.5
174	58.6	0.586	21.9	21.6	0.4
175	58.6	0.586	21.9	21.7	0.2
176	58.6	0.586	21.9	21.6	0.4
177	58.6	0.586	21.9	21.6	0.4
178	58.6	0.586	21.9	21.7	0.2
179	58.6	0.586	21.9	21.7	0.2
180	58.6	0.586	22.1	21.7	0.4
181	58.6	0.586	21.9	21.7	0.2
182	58.6	0.586	21.9	21.6	0.4
183	58.6	0.586	21.9	21.6	0.4
184	58.6	0.586	21.9	21.7	0.2
185	58.6	0.586	22.0	21.6	0.5
186	58.6	0.586	22.1	21.7	0.4
187	58.6	0.586	22.1	21.7	0.4
188	58.6	0.586	22.1	21.7	0.4
189	58.6	0.586	22.1	21.7	0.4
190	58.6	0.586	22.1	21.7	0.4
191	58.6	0.586	22.1	21.7	0.4
192	58.6	0.586	22.1	21.7	0.4
193	58.6	0.586	22.1	21.7	0.4
194	58.6	0.586	22.1	21.7	0.4
195	58.6	0.586	22.1	21.7	0.4
196	58.6	0.586	22.1	21.7	0.4
197	58.6	0.586	22.1	21.7	0.4
198	58.6	0.586	22.1	21.7	0.4
199	58.6	0.586	22.1	21.6	0.5
200	58.6	0.586	22.1	21.7	0.4
201	58.6	0.586	22.1	21.7	0.4
202	58.6	0.586	22.1	21.6	0.5
203	58.6	0.586	22.2	21.7	0.5
204	58.6	0.586	22.2	21.7	0.5
205	58.6	0.586	22.1	21.7	0.4
206	58.6	0.586	22.2	21.7	0.5
207	58.6	0.586	22.1	21.7	0.4

185.5	1.855	23.4	23.0	0.4	151.4	1.514	24.2	23.7	0.5	**1.0**	0.9
190.4	1.904	23.4	23.1	0.2	151.4	1.514	24.3	23.6	0.7	**1.0**	0.9
190.4	1.904	23.4	23.4	0.0	151.4	1.514	24.3	23.7	0.6	**1.0**	0.9
190.4	1.904	23.4	23.4	0.0	151.4	1.514	24.4	23.8	0.6	**1.0**	0.9
190.4	1.904	23.6	23.7	-0.1	151.4	1.514	24.5	23.9	0.6	**1.0**	0.9
190.4	1.904	23.6	23.6	0.0	151.4	1.514	24.5	23.9	0.6	**1.0**	0.9
190.4	1.904	23.5	23.6	-0.1	151.4	1.514	24.5	23.8	0.7	**1.0**	0.9
185.5	1.855	23.6	23.7	-0.1	151.4	1.514	24.2	23.6	0.6	**1.0**	0.9
185.5	1.855	23.6	23.7	-0.1	151.4	1.514	24.3	23.7	0.6	**1.0**	0.9
185.5	1.855	23.7	23.9	-0.2	151.4	1.514	24.4	23.9	0.5	**1.0**	0.9
185.5	1.855	23.9	24.2	-0.2	151.4	1.514	24.3	23.7	0.6	**1.0**	0.9
185.5	1.855	23.8	23.9	-0.1	146.5	1.465	24.5	23.9	0.6	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.5	23.8	0.7	**1.0**	0.8
185.5	1.855	23.8	23.9	-0.1	146.5	1.465	24.4	23.9	0.5	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.6	24.1	0.5	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.4	23.9	0.5	**1.0**	0.8
185.5	1.855	23.9	24.1	-0.1	146.5	1.465	24.4	23.8	0.6	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.4	23.8	0.6	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.4	23.9	0.5	**1.0**	0.8
185.5	1.855	23.9	23.9	0.0	146.5	1.465	24.6	24.1	0.5	**1.0**	0.8
185.5	1.855	23.9	23.8	0.1	146.5	1.465	24.6	24.1	0.5	**1.0**	0.8
185.5	1.855	24.1	24.1	0.0	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
185.5	1.855	24.0	24.0	0.0	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
185.5	1.855	24.1	24.1	0.0	146.5	1.465	24.4	23.8	0.6	**1.0**	0.8
185.5	1.855	24.0	24.0	0.0	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
185.5	1.855	24.2	24.3	-0.1	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
185.5	1.855	24.2	24.4	-0.2	146.5	1.465	24.4	23.8	0.6	**1.0**	0.8
185.5	1.855	24.2	24.3	-0.1	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
180.7	1.807	24.2	24.2	0.0	146.5	1.465	24.6	24.0	0.6	**1.0**	0.8
180.7	1.807	24.2	24.2	0.0	146.5	1.465	24.4	23.7	0.7	**1.0**	0.8
180.7	1.807	24.2	24.3	-0.1	141.6	1.416	24.4	23.8	0.6	**1.0**	0.8
180.7	1.807	24.2	24.2	0.0	141.6	1.416	24.6	24.0	0.6	**1.0**	0.8
180.7	1.807	24.2	24.3	-0.1	141.6	1.416	24.4	23.9	0.5	**1.0**	0.8
180.7	1.807	24.3	24.3	0.0	141.6	1.416	24.4	23.9	0.5	**1.0**	0.8
180.7	1.807	24.2	24.4	-0.2	141.6	1.416	24.4	23.8	0.6	**1.0**	0.8
180.7	1.807	24.3	24.6	-0.4	141.6	1.416	24.6	24.0	0.6	**1.0**	0.8
175.8	1.758	24.3	24.4	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
175.8	1.758	24.5	24.6	-0.1	141.6	1.416	24.6	24.1	0.5	**0.9**	0.8
175.8	1.758	24.5	24.5	0.0	141.6	1.416	24.6	24.1	0.5	**0.9**	0.8
170.9	1.709	24.6	24.6	0.0	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.6	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.6	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.6	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.6	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.4	0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
170.9	1.709	24.5	24.5	0.0	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.5	24.7	-0.2	141.6	1.416	24.6	24.1	0.5	**0.9**	0.8
166.0	1.660	24.5	24.6	-0.1	141.6	1.416	24.7	24.1	0.6	**0.9**	0.8
166.0	1.660	24.5	24.5	0.0	141.6	1.416	24.6	24.1	0.5	**0.9**	0.8
166.0	1.660	24.5	24.5	0.0	141.6	1.416	24.7	24.0	0.7	**0.9**	0.8
166.0	1.660	24.5	24.6	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.5	24.4	0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.8	-0.1	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.7	0.0	141.6	1.416	24.6	24.0	0.6	**0.9**	0.8

Table A.2-5 continued...

208	58.6	0.586	22.1	21.6	0.5
209	58.6	0.586	22.2	21.7	0.5
210	58.6	0.586	22.1	21.9	0.2
211	58.6	0.586	22.3	22.0	0.2
212	58.6	0.586	22.1	21.6	0.5
213	58.6	0.586	22.1	21.7	0.4
214	58.6	0.586	22.3	21.9	0.4
215	58.6	0.586	22.4	21.9	0.5
216	58.6	0.586	22.3	21.9	0.4
217	58.6	0.586	22.3	21.9	0.4
218	58.6	0.586	22.3	21.9	0.4
219	58.6	0.586	22.3	22.0	0.2
220	58.6	0.586	22.3	21.9	0.4
221	53.7	0.537	22.3	21.9	0.4
222	58.6	0.586	22.4	21.9	0.5
223	53.7	0.537	22.3	21.9	0.4
224	53.7	0.537	22.3	21.8	0.5
225	58.6	0.586	22.3	21.9	0.4
226	58.6	0.586	22.3	21.9	0.4
227	53.7	0.537	22.3	21.9	0.4
228	53.7	0.537	22.3	21.9	0.4
229	53.7	0.537	22.3	21.9	0.4
230	53.7	0.537	22.1	21.7	0.4
231	53.7	0.537	22.3	21.9	0.4
232	53.7	0.537	22.3	21.9	0.4
233	53.7	0.537	22.4	21.9	0.5
234	53.7	0.537	22.3	21.9	0.4
235	53.7	0.537	22.4	21.9	0.5
236	53.7	0.537	22.3	21.9	0.4
237	53.7	0.537	22.4	21.9	0.5
238	53.7	0.537	22.3	21.9	0.4
239	53.7	0.537	22.3	22.0	0.2
240	53.7	0.537	22.3	21.8	0.5
241	53.7	0.537	22.3	21.9	0.4
242	53.7	0.537	22.4	21.9	0.5
243	53.7	0.537	22.4	21.9	0.5
244	48.8	0.488	22.3	21.9	0.4
245	48.8	0.488	22.3	21.9	0.4
246	48.8	0.488	22.3	21.9	0.4
247	48.8	0.488	22.3	21.9	0.4
248	48.8	0.488	22.3	21.9	0.4
249	48.8	0.488	22.4	22.0	0.4
250	48.8	0.488	22.3	21.9	0.4
251	48.8	0.488	22.4	21.9	0.5
252	48.8	0.488	22.3	21.9	0.4
253	48.8	0.488	22.4	22.0	0.4
254	48.8	0.488	22.4	21.8	0.6
255	48.8	0.488	22.3	21.9	0.4
256	48.8	0.488	22.6	22.1	0.5
257	48.8	0.488	22.4	21.9	0.5
258	48.8	0.488	22.3	21.9	0.4
259	48.8	0.488	22.3	21.8	0.5
260	48.8	0.488	22.4	21.8	0.6
261	48.8	0.488	22.3	21.9	0.4

166.0	1.660	24.7	24.6	0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.6	0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.6	0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.7	0.0	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.8	-0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.8	24.7	0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.8	-0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.7	24.8	-0.1	136.7	1.367	24.6	24.1	0.5	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.7	24.0	0.7	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.9	24.7	0.1	136.7	1.367	24.6	24.1	0.5	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.9	25.1	-0.2	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.4	24.0	0.5	**0.9**	0.8
166.0	1.660	24.9	24.9	0.0	136.7	1.367	24.4	24.0	0.5	**0.9**	0.8
166.0	1.660	24.9	25.1	-0.2	136.7	1.367	24.6	24.0	0.6	**0.9**	0.8
161.1	1.611	24.9	25.0	-0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	24.9	25.0	-0.1	136.7	1.367	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	24.9	25.0	-0.1	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	24.9	24.7	0.1	136.7	1.367	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	24.9	24.9	0.0	136.7	1.367	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	24.9	24.9	0.0	136.7	1.367	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	24.9	24.5	0.4	136.7	1.367	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	24.9	24.6	0.2	136.7	1.367	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	24.9	24.6	0.2	136.7	1.367	24.6	24.0	0.6	**0.9**	0.7
166.0	1.660	24.9	24.6	0.2	136.7	1.367	24.7	24.1	0.6	**0.9**	0.8
161.1	1.611	25.0	24.9	0.1	136.7	1.367	24.7	24.1	0.6	**0.9**	0.7
161.1	1.611	24.9	24.9	0.0	131.8	1.318	24.6	24.1	0.5	**0.9**	0.7
161.1	1.611	25.0	24.7	0.2	131.8	1.318	24.4	23.8	0.6	**0.9**	0.7
161.1	1.611	25.0	24.7	0.2	131.8	1.318	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	25.0	24.7	0.2	131.8	1.318	24.4	24.0	0.5	**0.9**	0.7
161.1	1.611	24.9	24.7	0.1	131.8	1.318	24.4	24.0	0.5	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	25.0	24.7	0.2	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	24.9	24.9	0.0	131.8	1.318	24.7	24.1	0.6	**0.9**	0.7
161.1	1.611	25.0	25.0	0.0	131.8	1.318	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
156.3	1.563	25.0	25.0	0.0	131.8	1.318	24.6	24.0	0.6	**0.8**	0.7
161.1	1.611	24.9	25.0	-0.1	131.8	1.318	24.6	24.0	0.6	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.4	23.8	0.6	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.7	24.1	0.6	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.6	23.8	0.7	**0.9**	0.7
161.1	1.611	25.0	24.9	0.1	131.8	1.318	24.7	24.1	0.6	**0.9**	0.7
161.1	1.611	25.0	25.0	0.0	127.0	1.270	24.7	24.0	0.7	**0.8**	0.7
161.1	1.611	25.0	24.9	0.1	127.0	1.270	24.7	24.1	0.6	**0.8**	0.7
161.1	1.611	25.0	25.0	0.0	127.0	1.270	24.7	24.1	0.6	**0.8**	0.7
161.1	1.611	24.9	25.0	-0.1	127.0	1.270	24.7	24.1	0.6	**0.8**	0.7
161.1	1.611	25.0	24.7	0.2	127.0	1.270	24.7	24.1	0.6	**0.8**	0.7
161.1	1.611	25.0	24.6	0.4	127.0	1.270	24.7	24.0	0.7	**0.8**	0.7

Table A.2-5 continued...

262	48.8	0.488	22.4	21.9	0.5
263	48.8	0.488	22.4	21.9	0.5
264	48.8	0.488	22.3	21.9	0.4
265	48.8	0.488	22.4	21.9	0.5
266	48.8	0.488	22.4	21.7	0.7
267	48.8	0.488	22.4	21.9	0.5
268	48.8	0.488	22.6	22.1	0.5
269	48.8	0.488	22.4	22.1	0.4
270	48.8	0.488	22.4	21.9	0.5
271	48.8	0.488	22.4	21.9	0.5
272	48.8	0.488	22.3	21.9	0.4
273	48.8	0.488	22.6	22.1	0.5
274	48.8	0.488	22.6	22.1	0.5
275	48.8	0.488	22.4	21.9	0.5
276	48.8	0.488	22.4	21.7	0.7
277	48.8	0.488	22.6	22.1	0.5
278	48.8	0.488	22.6	22.1	0.5
279	48.8	0.488	22.4	21.9	0.5
280	48.8	0.488	22.6	22.0	0.6
281	48.8	0.488	22.6	22.0	0.6
282	48.8	0.488	22.4	22.1	0.4
283	48.8	0.488	22.6	22.1	0.5
284	48.8	0.488	22.4	21.9	0.5
285	48.8	0.488	22.6	22.1	0.5
286	48.8	0.488	22.4	22.1	0.4
287	48.8	0.488	22.6	22.1	0.5
288	48.8	0.488	22.4	22.1	0.4
289	48.8	0.488	22.6	22.1	0.5
290	48.8	0.488	22.6	22.0	0.6
291	48.8	0.488	22.6	22.1	0.5
292	48.8	0.488	22.3	21.9	0.4
293	48.8	0.488	22.6	22.1	0.5
294	48.8	0.488	22.6	22.1	0.5
295	48.8	0.488	22.6	22.1	0.5
296	43.9	0.439	22.6	22.1	0.5
297	43.9	0.439	22.6	22.1	0.5
298	43.9	0.439	22.6	22.1	0.5
299	43.9	0.439	22.6	22.1	0.5
300	43.9	0.439	22.6	22.2	0.4
301	43.9	0.439	22.6	22.1	0.5
302	43.9	0.439	22.7	22.1	0.6
303	43.9	0.439	22.6	22.1	0.5
304	43.9	0.439	22.6	22.1	0.5
305	43.9	0.439	22.6	22.0	0.6
306	43.9	0.439	22.6	22.1	0.5
307	43.9	0.439	22.6	22.0	0.6
308	43.9	0.439	22.6	22.0	0.6
309	43.9	0.439	22.4	22.0	0.5
310	43.9	0.439	22.6	21.8	0.7
311	39.1	0.391	22.6	22.0	0.6
312	39.1	0.391	22.6	21.8	0.7
313	39.1	0.391	22.6	21.8	0.7
314	39.1	0.391	22.4	21.7	0.7
315	39.1	0.391	22.3	21.5	0.7

161.1	1.611	25.0	24.9	0.1	127.0	1.270	24.6	23.8	0.7	**0.8**	0.7
161.1	1.611	25.1	24.8	0.4	127.0	1.270	24.6	23.8	0.7	**0.8**	0.7
161.1	1.611	25.0	25.1	-0.1	127.0	1.270	24.6	24.0	0.6	**0.8**	0.7
161.1	1.611	25.1	25.0	0.1	127.0	1.270	24.7	24.1	0.6	**0.8**	0.7
161.1	1.611	25.0	24.7	0.4	127.0	1.270	24.6	24.0	0.6	**0.8**	0.7
161.1	1.611	25.1	24.8	0.4	127.0	1.270	24.7	24.0	0.7	**0.8**	0.7
161.1	1.611	25.0	24.5	0.5	127.0	1.270	24.7	24.0	0.7	**0.8**	0.7
156.3	1.563	24.9	24.6	0.2	127.0	1.270	24.7	24.0	0.7	**0.8**	0.7
156.3	1.563	25.0	24.7	0.2	127.0	1.270	24.6	24.0	0.6	**0.8**	0.7
156.3	1.563	25.0	24.6	0.4						**0.5**	0.7
156.3	1.563	25.0	25.0	0.0						**0.5**	0.7
156.3	1.563	25.0	25.1	-0.1						**0.5**	0.7
156.3	1.563	25.1	25.0	0.1						**0.5**	0.7
156.3	1.563	25.0	24.9	0.1						**0.5**	0.7
156.3	1.563	25.0	25.1	-0.1						**0.5**	0.7
156.3	1.563	25.1	25.1	0.0						**0.5**	0.7
156.3	1.563	25.1	25.0	0.1						**0.5**	0.7
156.3	1.563	25.1	25.0	0.1						**0.5**	0.7
156.3	1.563	25.3	25.1	0.2						**0.5**	0.7
156.3	1.563	25.2	25.2	0.0						**0.5**	0.7
156.3	1.563	25.2	25.1	0.1						**0.5**	0.7
156.3	1.563	25.2	25.2	0.0						**0.5**	0.7
156.3	1.563	25.1	25.1	0.0						**0.5**	0.7
156.3	1.563	25.3	25.0	0.4						**0.5**	0.7
156.3	1.563	25.0	25.1	-0.1						**0.5**	0.7
156.3	1.563	25.0	25.1	-0.1						**0.5**	0.7
156.3	1.563	25.2	25.2	0.0						**0.5**	0.7
156.3	1.563	25.2	25.3	-0.1						**0.5**	0.7
156.3	1.563	25.2	25.3	-0.1						**0.5**	0.7
156.3	1.563	25.2	25.1	0.1						**0.5**	0.7
156.3	1.563	25.2	25.2	0.0						**0.5**	0.7
156.3	1.563	25.2	25.1	0.1						**0.5**	0.7
156.3	1.563	25.2	25.1	0.1						**0.5**	0.7
156.3	1.563	25.2	25.3	-0.1						**0.5**	0.7
156.3	1.563	25.2	25.2	0.0						**0.5**	0.7
156.3	1.563	25.2	25.3	-0.1						**0.5**	0.7
156.3	1.563	25.2	25.3	-0.1						**0.5**	0.7
156.3	1.563	25.3	25.1	0.2						**0.5**	0.7
156.3	1.563	25.2	25.1	0.1						**0.5**	0.7
156.3	1.563	25.3	25.1	0.2						**0.5**	0.7
156.3	1.563	25.3	25.2	0.1						**0.5**	0.7
156.3	1.563	25.3	25.2	0.1						**0.5**	0.7
151.4	1.514	25.2	25.3	-0.1						**0.5**	0.7
151.4	1.514	25.3	25.3	0.0						**0.5**	0.7
151.4	1.514	25.3	25.3	0.0						**0.5**	0.7
151.4	1.514	25.3	25.2	0.1						**0.5**	0.7
151.4	1.514	25.3	25.2	0.1						**0.5**	0.7
151.4	1.514	25.3	25.2	0.1						**0.5**	0.7
151.4	1.514	25.2	25.1	0.1						**0.5**	0.7
151.4	1.514	25.2	25.2	0.0						**0.5**	0.7
151.4	1.514	25.3	25.0	0.4						**0.5**	0.7
151.4	1.514	25.2	25.2	0.0						**0.5**	0.7
151.4	1.514	25.2	25.2	0.0						**0.5**	0.7
151.4	1.514	25.3	25.3	0.0						**0.5**	0.7

Table A.2-6 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was empty and carbon dioxide purging time was 15 min.

Sample No.	E21-15					E22-15					E23-15					E24-15					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.3	22.1	1.2	249.0	2.490	21.3	19.7	1.6	253.9	2.539	25.8	24.9	0.8	253.9	2.539	25.3	24.1	1.2	2.5	0.0
1	234.4	2.344	23.1	21.9	1.2	195.3	1.953	21.1	19.7	1.3	249.0	2.490	25.5	24.8	0.7	229.5	2.295	25.0	24.0	1.0	2.3	0.2
2	219.7	2.197	22.9	21.7	1.2	166.0	1.660	20.8	19.7	1.1	224.6	2.246	25.2	24.9	0.2	224.6	2.246	24.7	24.0	0.7	2.1	0.3
3	214.8	2.148	23.0	22.0	1.0	141.6	1.416	20.7	19.7	1.0	219.7	2.197	25.2	25.1	0.1	219.7	2.197	24.6	24.0	0.6	2.0	0.4
4	210.0	2.100	22.8	21.9	1.0	117.2	1.172	20.7	19.7	1.0	219.7	2.197	25.1	25.0	0.1	219.7	2.197	24.5	23.9	0.6	1.9	0.5
5	205.1	2.051	22.8	21.7	1.1	102.5	1.025	20.8	19.9	1.0	219.7	2.197	25.2	25.0	0.2	214.8	2.148	24.6	24.0	0.6	1.9	0.6
6	200.2	2.002	22.8	21.9	1.0	83.0	0.830	20.8	19.9	1.0	214.8	2.148	25.2	25.1	0.1	214.8	2.148	24.4	23.8	0.6	1.8	0.6
7	200.2	2.002	22.8	21.7	1.1	68.4	0.684	20.7	19.7	1.0	214.8	2.148	25.1	25.0	0.1	214.8	2.148	24.6	24.0	0.6	1.7	0.7
8	190.4	1.904	22.9	21.9	1.1	58.6	0.586	20.7	19.7	1.0	214.8	2.148	25.2	25.0	0.2	214.8	2.148	24.4	23.8	0.6	1.7	0.7
9	185.5	1.855	22.8	21.6	1.2	43.9	0.439	20.7	19.9	0.8	214.8	2.148	25.2	25.0	0.2	214.8	2.148	24.3	23.8	0.5	1.6	0.8
10	185.5	1.855	22.8	21.6	1.2	39.1	0.391	20.7	19.7	1.0	210.0	2.100	25.0	24.8	0.2	214.8	2.148	24.3	23.8	0.5	1.6	0.8
11	180.7	1.807	22.8	21.7	1.1	34.2	0.342	20.8	19.7	1.1	210.0	2.100	25.0	24.8	0.2	214.8	2.148	24.5	23.9	0.6	1.6	0.9
12	175.8	1.758	22.7	21.5	1.2						210.0	2.100	25.2	25.0	0.2	214.8	2.148	24.3	23.7	0.6	1.5	1.0
13	175.8	1.758	22.7	21.6	1.1						210.0	2.100	25.2	25.0	0.2	210.0	2.100	24.5	23.9	0.6	1.5	1.0
14	170.9	1.709	22.7	21.5	1.2						210.0	2.100	25.0	24.8	0.2	210.0	2.100	24.4	23.9	0.5	1.5	1.0
15	166.0	1.660	22.7	21.2	1.4						210.0	2.100	25.0	24.9	0.1	210.0	2.100	24.4	23.8	0.6	1.5	1.0
16	161.1	1.611	22.5	21.0	1.4						210.0	2.100	25.0	24.9	0.1	210.0	2.100	24.4	23.8	0.6	1.5	1.0
17	161.1	1.611	22.5	21.2	1.3						210.0	2.100	25.0	24.9	0.1	210.0	2.100	24.4	23.8	0.6	1.5	1.0
18	156.3	1.563	22.5	20.9	1.6						210.0	2.100	25.0	24.9	0.1	210.0	2.100	24.5	23.8	0.7	1.4	1.0
19	151.4	1.514	22.5	21.2	1.3						210.0	2.100	25.0	24.9	0.1	210.0	2.100	24.5	23.8	0.7	1.4	1.0
20	146.5	1.465	22.5	21.2	1.3						210.0	2.100	25.1	25.0	0.1	210.0	2.100	24.5	23.8	0.7	1.4	1.0
21	141.6	1.416	22.5	21.3	1.2						210.0	2.100	25.0	24.8	0.2	210.0	2.100	24.4	23.7	0.7	1.4	1.0
22	141.6	1.416	22.5	21.4	1.1						210.0	2.100	25.2	25.1	0.1	210.0	2.100	24.6	23.9	0.7	1.4	1.0
23	136.7	1.367	22.5	21.5	1.0						205.1	2.051	25.0	24.9	0.1	205.1	2.051	24.6	24.0	0.6	1.4	1.0
24	136.7	1.367	22.5	21.6	0.8						210.0	2.100	25.2	25.1	0.1	205.1	2.051	24.6	23.9	0.7	1.4	1.0
25	131.8	1.318	22.5	21.6	0.8						205.1	2.051	25.2	25.1	0.1	205.1	2.051	24.5	23.9	0.6	1.4	1.0
26	127.0	1.270	22.4	21.8	0.6						205.1	2.051	25.1	25.1	0.0	205.1	2.051	24.6	23.9	0.7	1.3	1.0
27	127.0	1.270	22.4	21.8	0.6						205.1	2.051	25.2	25.1	0.1	205.1	2.051	24.5	23.9	0.6	1.3	1.0
28	127.0	1.270	22.4	21.9	0.5						205.1	2.051	25.0	24.9	0.1	205.1	2.051	24.6	23.9	0.7	1.3	1.0
29	122.1	1.221	22.4	21.6	0.7						205.1	2.051	24.9	25.0	-0.1	205.1	2.051	24.4	23.8	0.6	1.3	1.0
30	122.1	1.221	22.4	21.8	0.6						205.1	2.051	25.2	25.2	0.0	205.1	2.051	24.5	23.9	0.6	1.3	1.0
31	122.1	1.221	22.4	21.6	0.7						205.1	2.051	25.2	25.0	0.2	200.2	2.002	24.4	23.6	0.7	1.3	1.0
32	117.2	1.172	22.5	21.6	0.8						205.1	2.051	25.2	25.1	0.1	200.2	2.002	24.4	23.6	0.7	1.3	1.0
33	117.2	1.172	22.5	21.9	0.6						205.1	2.051	25.2	25.2	0.0	200.2	2.002	24.5	23.8	0.7	1.3	1.0
34	112.3	1.123	22.5	21.8	0.7						205.1	2.051	25.2	25.0	0.2	200.2	2.002	24.5	23.8	0.7	1.3	1.0
35	112.3	1.123	22.5	21.9	0.6						205.1	2.051	25.2	25.1	0.1	200.2	2.002	24.7	24.0	0.7	1.3	1.0
36	107.4	1.074	22.5	21.9	0.6						205.1	2.051	25.2	25.1	0.1	200.2	2.002	24.7	24.0	0.7	1.3	1.0
37	102.5	1.025	22.5	22.0	0.5						205.1	2.051	25.2	25.0	0.2	200.2	2.002	24.7	23.9	0.8	1.3	1.0
38	102.5	1.025	22.5	21.8	0.7						205.1	2.051	25.1	25.0	0.1	200.2	2.002	24.6	23.9	0.7	1.3	1.0
39	97.7	0.977	22.7	22.2	0.5						205.1	2.051	25.1	25.1	0.0	200.2	2.002	24.6	23.9	0.7	1.3	1.0
40	97.7	0.977	22.7	22.3	0.4						205.1	2.051	25.2	25.1	0.1	200.2	2.002	24.6	23.9	0.7	1.3	1.0
41	97.7	0.977	22.7	22.1	0.6						205.1	2.051	25.2	25.1	0.1	195.3	1.953	24.6	24.0	0.6	1.2	1.0
42	97.7	0.977	22.3	21.6	0.7						205.1	2.051	25.1	25.0	0.1	195.3	1.953	24.6	23.9	0.7	1.2	1.0
43	127.0	1.270	19.7	11.8	7.9						200.2	2.002	25.1	25.1	0.0	190.4	1.904	24.6	23.9	0.7	1.3	0.9
44	122.1	1.221	19.5	12.5	7.0						200.2	2.002	25.1	25.1	0.0	190.4	1.904	24.6	23.9	0.7	1.3	0.9
45	112.3	1.123	20.8	16.0	4.8						200.2	2.002	25.1	25.1	0.0	190.4	1.904	24.6	23.9	0.7	1.3	0.9

Table A.2-6 continued...

46	102.5	1.025	21.0	17.6	3.4
47	97.7	0.977	21.2	18.2	3.0
48	92.8	0.928	21.3	18.8	2.5
49	87.9	0.879	21.5	19.3	2.2
50	83.0	0.830	21.6	19.8	1.8
51	83.0	0.830	21.6	20.1	1.6
52	83.0	0.830	21.5	20.2	1.3
53	83.0	0.830	21.7	20.5	1.2
54	83.0	0.830	21.7	20.5	1.2
55	83.0	0.830	21.6	20.6	1.0
56	83.0	0.830	21.8	20.6	1.2
57	83.0	0.830	21.8	20.7	1.1
58	83.0	0.830	21.9	20.9	1.1
59	83.0	0.830	21.8	20.9	1.0
60	83.0	0.830	21.9	20.7	1.2
61	78.1	0.781	21.9	20.7	1.2
62	78.1	0.781	21.8	20.9	1.0
63	78.1	0.781	22.1	21.0	1.1
64	78.1	0.781	22.1	21.0	1.1
65	78.1	0.781	22.3	21.1	1.2
66	78.1	0.781	22.3	21.1	1.2
67	78.1	0.781	22.1	20.9	1.2
68	78.1	0.781	22.3	20.9	1.3
69	78.1	0.781	22.3	21.1	1.2
70	78.1	0.781	22.3	21.1	1.2
71	78.1	0.781	22.3	21.1	1.2
72	78.1	0.781	22.3	21.1	1.2
73	73.2	0.732	22.1	20.9	1.2
74	73.2	0.732	22.4	21.1	1.3
75	73.2	0.732	22.4	21.2	1.2
76	73.2	0.732	22.4	21.1	1.3
77	73.2	0.732	22.4	21.1	1.3
78	73.2	0.732	22.4	21.2	1.2
79	73.2	0.732	22.4	21.2	1.2
80	73.2	0.732	22.4	21.1	1.3
81	73.2	0.732	22.6	21.4	1.2
82	73.2	0.732	22.6	21.4	1.2
83	68.4	0.684	22.6	21.3	1.3
84	68.4	0.684	22.6	21.3	1.3
85	68.4	0.684	22.4	21.1	1.3
86	68.4	0.684	22.6	21.3	1.3
87	68.4	0.684	22.6	21.3	1.3
88	68.4	0.684	22.6	21.3	1.3
89	68.4	0.684	22.6	21.2	1.4
90	68.4	0.684	22.7	21.3	1.4
91	68.4	0.684	22.7	21.2	1.6
92	63.5	0.635	22.7	21.4	1.3
93	63.5	0.635	22.7	21.3	1.4
94	63.5	0.635	22.7	21.3	1.4
95	63.5	0.635	22.7	21.2	1.6
96	58.6	0.586	22.7	21.3	1.4
97	58.6	0.586	22.7	21.4	1.3
98	58.6	0.586	22.7	21.3	1.4
99	58.6	0.586	22.7	21.3	1.4

200.2	2.002	25.1	25.1	0.0	190.4	1.904	24.6	23.9	0.7	1.2	0.9
200.2	2.002	25.1	25.1	0.0	190.4	1.904	24.7	24.0	0.7	1.2	0.9
200.2	2.002	25.1	25.0	0.1	190.4	1.904	24.7	24.0	0.7	1.2	0.9
200.2	2.002	25.1	24.9	0.2	190.4	1.904	24.7	24.0	0.7	1.2	0.9
200.2	2.002	25.1	24.7	0.4	190.4	1.904	24.7	23.9	0.8	1.2	1.0
200.2	2.002	25.1	24.7	0.4	190.4	1.904	24.7	23.9	0.8	1.2	1.0
200.2	2.002	25.1	24.9	0.2	185.5	1.855	24.7	23.9	0.8	1.2	0.9
200.2	2.002	25.1	25.1	0.0	185.5	1.855	24.7	23.9	0.8	1.2	0.9
200.2	2.002	25.2	25.1	0.1	185.5	1.855	24.7	24.0	0.7	1.2	0.9
200.2	2.002	25.1	25.0	0.1	185.5	1.855	24.8	24.1	0.7	1.2	0.9
200.2	2.002	25.1	24.9	0.2	185.5	1.855	24.8	24.1	0.7	1.2	0.9
200.2	2.002	25.1	25.0	0.1	185.5	1.855	24.8	24.1	0.7	1.2	0.9
200.2	2.002	25.1	25.1	0.0	185.5	1.855	24.8	24.1	0.7	1.2	0.9
195.3	1.953	25.1	25.0	0.1	185.5	1.855	24.8	24.1	0.7	1.2	0.9
195.3	1.953	25.1	25.0	0.1	185.5	1.855	24.8	24.1	0.7	1.2	0.9
195.3	1.953	25.1	24.9	0.2	185.5	1.855	24.9	24.1	0.8	1.1	0.9
200.2	2.002	25.1	24.9	0.2	185.5	1.855	24.8	24.1	0.7	1.2	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	180.7	1.807	25.0	24.1	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	180.7	1.807	25.0	24.1	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.9	24.1	0.7	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.9	24.1	0.7	1.1	0.9
195.3	1.953	25.1	24.9	0.2	180.7	1.807	25.0	24.1	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.9	24.1	0.7	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.9	24.1	0.7	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	180.7	1.807	24.8	24.0	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	180.7	1.807	25.0	24.1	0.8	1.1	0.9
195.3	1.953	25.1	25.1	0.0	175.8	1.758	25.1	24.3	0.8	1.1	0.9
195.3	1.953	25.1	24.9	0.2	175.8	1.758	25.1	24.3	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	175.8	1.758	25.0	24.3	0.7	1.1	0.9
195.3	1.953	25.1	25.0	0.1	175.8	1.758	25.1	24.3	0.8	1.1	0.9
195.3	1.953	25.1	25.0	0.1	175.8	1.758	25.1	24.3	0.8	1.1	0.9
190.4	1.904	25.0	25.1	-0.1	175.8	1.758	25.1	24.2	1.0	1.1	0.9
190.4	1.904	25.1	25.2	-0.1	175.8	1.758	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	25.1	0.0	175.8	1.758	25.1	24.2	1.0	1.1	0.9
190.4	1.904	25.1	25.0	0.1	175.8	1.758	25.1	24.3	0.8	1.1	0.9
190.4	1.904	25.1	25.1	0.0	175.8	1.758	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	25.1	0.0	175.8	1.758	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.2	25.0	0.2	175.8	1.758	25.0	24.3	0.7	1.1	0.9
190.4	1.904	25.1	25.1	0.0	175.8	1.758	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	24.9	0.2	175.8	1.758	25.2	24.4	0.8	1.1	0.9
190.4	1.904	25.1	24.9	0.2	175.8	1.758	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	24.6	0.5	170.9	1.709	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	24.7	0.4	170.9	1.709	25.0	24.2	0.8	1.1	0.9
190.4	1.904	25.1	25.1	0.0	170.9	1.709	25.0	24.2	0.8	1.1	0.9
190.4	1.904	24.7	21.5	3.2	170.9	1.709	25.2	24.2	1.0	1.0	0.9
190.4	1.904	24.5	20.8	3.7	170.9	1.709	25.2	24.2	1.0	1.0	0.9
190.4	1.904	24.2	21.2	3.0	170.9	1.709	25.0	24.2	0.8	1.0	0.9
190.4	1.904	24.2	21.8	2.4	170.9	1.709	25.2	24.4	0.8	1.0	0.9

Table A.2-6 continued...

100	53.7	0.537	22.7	21.3	1.4
101	53.7	0.537	22.7	21.3	1.4
102	53.7	0.537	22.8	21.5	1.3
103	48.8	0.488	22.7	21.2	1.6
104	48.8	0.488	22.7	21.3	1.4
105	48.8	0.488	22.7	21.3	1.4
106	48.8	0.488	22.9	21.5	1.4
107	48.8	0.488	22.9	21.2	1.7
108	48.8	0.488	22.9	21.3	1.6
109	48.8	0.488	22.9	21.5	1.4
110	48.8	0.488	22.9	21.3	1.6
111	43.9	0.439	23.1	21.5	1.6
112	43.9	0.439	23.1	21.6	1.4
113	43.9	0.439	23.1	21.6	1.4
114	43.9	0.439	23.1	21.5	1.6
115	43.9	0.439	22.9	21.3	1.6
116	43.9	0.439	22.9	21.4	1.6
117	43.9	0.439	22.9	21.6	1.3
118	43.9	0.439	23.1	21.5	1.6
119	39.1	0.391	23.1	21.5	1.6
120	39.1	0.391	23.1	21.5	1.6
121	39.1	0.391	23.1	21.5	1.6
122	39.1	0.391	23.0	21.3	1.7
123	39.1	0.391	23.0	21.5	1.6
124	39.1	0.391	22.9	21.5	1.4
125	34.2	0.342	23.2	21.5	1.7
126	34.2	0.342	23.1	21.6	1.4
127	34.2	0.342	22.9	21.3	1.6
128	34.2	0.342	23.1	21.5	1.6
129	34.2	0.342	23.1	21.5	1.6
130	34.2	0.342	22.9	21.1	1.8
131	29.3	0.293	23.1	21.1	1.9
132	29.3	0.293	23.2	21.1	2.0
133	29.3	0.293	22.9	21.1	1.8
134	29.3	0.293	22.9	21.0	1.9
135	29.3	0.293	23.0	21.1	1.9
136	24.4	0.244	23.0	21.1	1.9
137	24.4	0.244	22.8	20.9	1.9
138	24.4	0.244	22.8	20.7	2.2
139	24.4	0.244	22.7	20.8	1.9
140	24.4	0.244	22.8	20.8	2.0
141	19.5	0.195	22.8	20.8	2.0
142	19.5	0.195	22.8	20.8	2.0
143	19.5	0.195	22.7	20.7	2.0
144	19.5	0.195	22.8	20.8	2.0
145	14.6	0.146	22.8	20.8	2.0
146	9.8	0.098	22.5	20.6	1.9
147	9.8	0.098	22.7	20.8	1.9
148	9.8	0.098	22.5	20.7	1.8
149	9.8	0.098	22.5	20.6	1.9
150	9.8	0.098	22.5	20.6	1.9
151	9.8	0.098	22.5	20.7	1.8
152	9.8	0.098	22.5	20.6	1.9
153	14.6	0.146	22.5	20.6	1.9

190.4	1.904	24.2	22.3	1.9	170.9	1.709	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.2	22.9	1.3	170.9	1.709	25.2	24.4	0.8	**1.0**	0.9
185.5	1.855	24.4	23.2	1.2	170.9	1.709	25.4	24.5	0.8	**1.0**	0.9
190.4	1.904	24.2	23.3	1.0	170.9	1.709	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.4	23.6	0.8	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.4	23.8	0.6	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.2	23.8	0.5	170.9	1.709	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.4	23.6	0.7	166.0	1.660	25.2	24.3	1.0	**1.0**	0.9
190.4	1.904	24.5	23.9	0.6	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.5	24.0	0.5	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.4	24.2	0.2	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.5	24.2	0.4	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.4	24.0	0.4	166.0	1.660	25.2	24.2	1.0	**1.0**	0.9
190.4	1.904	24.4	24.2	0.2	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.4	24.0	0.4	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.6	24.5	0.1	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.4	22.2	2.2	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	24.2	22.5	1.7	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	24.0	21.9	2.2	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	23.8	21.6	2.3	161.1	1.611	25.2	24.3	1.0	**1.0**	0.9
190.4	1.904	23.8	21.0	2.9	161.1	1.611	25.4	24.3	1.1	**1.0**	0.9
190.4	1.904	23.5	20.3	3.2	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	23.0	20.0	3.0	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
185.5	1.855	23.2	20.3	2.9	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
185.5	1.855	22.9	19.4	3.5	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
185.5	1.855	22.8	20.3	2.5	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
185.5	1.855	22.7	21.0	1.7	161.1	1.611	25.5	24.6	1.0	**1.0**	0.9
185.5	1.855	23.0	21.7	1.3	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
185.5	1.855	23.0	22.2	0.8	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
185.5	1.855	23.0	22.4	0.6	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
190.4	1.904	23.4	22.9	0.5	161.1	1.611	25.4	24.5	1.0	**1.0**	0.9
185.5	1.855	23.4	23.0	0.4	161.1	1.611	25.5	24.5	1.1	**0.9**	0.9
185.5	1.855	23.4	23.0	0.4	156.3	1.563	25.5	24.5	1.1	**0.9**	0.9
190.4	1.904	23.4	23.1	0.2	156.3	1.563	25.5	24.7	0.8	**0.9**	0.9
190.4	1.904	23.4	23.4	0.0	156.3	1.563	25.4	24.4	1.0	**0.9**	0.9
190.4	1.904	23.4	23.4	0.0	156.3	1.563	25.2	24.4	0.8	**0.9**	0.9
190.4	1.904	23.6	23.7	-0.1	156.3	1.563	25.2	22.6	2.6	**0.9**	0.9
190.4	1.904	23.6	23.6	0.0	161.1	1.611	25.4	23.7	1.7	**0.9**	1.0
190.4	1.904	23.5	23.6	-0.1	161.1	1.611	25.4	24.0	1.4	**0.9**	1.0
185.5	1.855	23.6	23.7	-0.1	156.3	1.563	25.6	24.5	1.1	**0.9**	0.9
185.5	1.855	23.6	23.7	-0.1	156.3	1.563	25.6	24.4	1.2	**0.9**	0.9
185.5	1.855	23.7	23.9	-0.2	156.3	1.563	25.5	24.6	0.8	**0.9**	0.9
185.5	1.855	23.9	24.2	-0.2	156.3	1.563	25.5	24.5	1.0	**0.9**	0.9
185.5	1.855	23.8	23.9	-0.1	156.3	1.563	25.4	24.5	1.0	**0.9**	0.9
185.5	1.855	23.9	23.9	0.0	156.3	1.563	25.6	24.6	1.0	**0.9**	0.9
185.5	1.855	23.8	23.9	-0.1	156.3	1.563	25.5	24.6	0.8	**0.9**	1.0
185.5	1.855	23.9	23.9	0.0	156.3	1.563	25.5	24.6	0.8	**0.9**	1.0
185.5	1.855	23.9	23.9	0.0	156.3	1.563	25.6	24.6	1.0	**0.9**	1.0
185.5	1.855	23.9	24.1	-0.1	151.4	1.514	25.5	24.6	0.8	**0.9**	1.0
185.5	1.855	23.9	23.9	0.0	151.4	1.514	25.6	24.7	0.8	**0.9**	1.0
185.5	1.855	23.9	23.9	0.0	151.4	1.514	25.6	24.6	1.0	**0.9**	1.0
185.5	1.855	23.9	23.9	0.0	151.4	1.514	25.6	24.6	1.0	**0.9**	1.0
185.5	1.855	23.9	23.8	0.1	151.4	1.514	25.5	24.6	0.8	**0.9**	1.0
185.5	1.855	24.1	24.1	0.0	151.4	1.514	25.8	24.7	1.1	**0.9**	0.9

Table A.2-6 continued...

154	14.6	0.146	22.5	20.6	1.9
155	14.6	0.146	22.6	20.6	2.0
156	14.6	0.146	22.5	20.6	1.9
157	14.6	0.146	22.5	20.4	2.0
158	14.6	0.146	22.5	20.4	2.0
159	9.8	0.098	22.3	20.3	2.0
160	14.6	0.146	22.2	20.3	1.9
161	14.6	0.146	22.2	20.3	1.9
162	9.8	0.098	22.3	20.4	1.9
163	14.6	0.146	22.5	20.4	2.0
164	14.6	0.146	22.3	20.3	2.0
165	9.8	0.098	22.1	20.0	2.2
166	9.8	0.098	22.3	20.3	2.0
167	9.8	0.098	22.1	20.1	2.0
168	9.8	0.098	22.0	20.0	1.9
169	9.8	0.098	22.0	20.2	1.8
170	9.8	0.098	22.1	20.2	1.9
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185.5	1.855	24.0	24.0	0.0	151.4	1.514	25.6	24.7	1.0	**0.9**	0.9
185.5	1.855	24.1	24.1	0.0	151.4	1.514	25.6	24.7	1.0	**0.9**	0.9
185.5	1.855	24.0	24.0	0.0	151.4	1.514	25.6	24.8	0.8	**0.9**	0.9
185.5	1.855	24.2	24.3	-0.1	151.4	1.514	25.5	24.6	0.8	**0.9**	0.9
185.5	1.855	24.2	24.4	-0.2	151.4	1.514	25.6	24.7	1.0	**0.9**	0.9
185.5	1.855	24.2	24.3	-0.1	151.4	1.514	25.6	24.7	1.0	**0.9**	1.0
180.7	1.807	24.2	24.2	0.0	151.4	1.514	25.6	24.7	1.0	**0.9**	0.9
180.7	1.807	24.2	24.2	0.0	151.4	1.514	25.8	24.7	1.1	**0.9**	0.9
180.7	1.807	24.2	24.3	-0.1	151.4	1.514	25.6	24.8	0.8	**0.9**	0.9
180.7	1.807	24.2	24.2	0.0	146.5	1.465	25.8	24.7	1.1	**0.9**	0.9
180.7	1.807	24.2	24.3	-0.1	146.5	1.465	25.8	24.7	1.1	**0.9**	0.9
180.7	1.807	24.3	24.3	0.0	146.5	1.465	25.8	24.7	1.1	**0.8**	0.9
180.7	1.807	24.2	24.4	-0.2	146.5	1.465	25.8	24.7	1.1	**0.8**	0.9
180.7	1.807	24.3	24.6	-0.4	146.5	1.465	25.9	25.0	1.0	**0.8**	0.9
175.8	1.758	24.3	24.4	-0.1	146.5	1.465	25.8	25.0	0.8	**0.8**	0.9
175.8	1.758	24.5	24.6	-0.1	146.5	1.465	25.6	24.7	1.0	**0.8**	0.9
175.8	1.758	24.5	24.5	0.0	146.5	1.465	25.8	25.0	0.8	**0.8**	0.9
170.9	1.709	24.6	24.6	0.0	146.5	1.465	25.8	24.9	1.0	**0.8**	0.9
170.9	1.709	24.5	24.6	-0.1	146.5	1.465	25.8	24.9	1.0	**0.8**	0.9
170.9	1.709	24.5	24.6	-0.1	146.5	1.465	25.8	24.9	1.0	**0.8**	0.9
170.9	1.709	24.5	24.6	-0.1	146.5	1.465	25.8	24.9	1.0	**0.8**	0.9
170.9	1.709	24.5	24.6	-0.1	146.5	1.465	25.7	24.9	0.8	**0.8**	0.9
170.9	1.709	24.5	24.4	0.1	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
170.9	1.709	24.5	24.5	0.0	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.5	24.7	-0.2	141.6	1.416	25.8	24.7	1.1	**0.8**	0.9
166.0	1.660	24.5	24.6	-0.1	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.5	24.5	0.0	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.5	24.5	0.0	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.5	24.6	-0.1	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.5	24.4	0.1	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.7	24.8	-0.1	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.7	24.7	0.0	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.7	24.6	0.1	141.6	1.416	25.9	25.0	1.0	**0.8**	0.9
166.0	1.660	24.7	24.6	0.1	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.7	24.6	0.1	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.7	24.7	0.0	141.6	1.416	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.7	24.8	-0.1	141.6	1.416	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.8	24.7	0.1	141.6	1.416	26.2	25.2	1.0	**0.8**	0.9
166.0	1.660	24.7	24.8	-0.1	141.6	1.416	26.0	25.0	1.0	**0.8**	0.9
166.0	1.660	24.7	24.8	-0.1	136.7	1.367	26.0	25.0	1.0	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	25.9	25.0	1.0	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.9	24.7	0.1	136.7	1.367	26.1	24.9	1.2	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	26.0	25.0	1.0	**0.8**	0.9
166.0	1.660	24.9	25.1	-0.2	136.7	1.367	25.8	24.9	1.0	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	26.1	25.0	1.1	**0.8**	0.9
166.0	1.660	24.9	24.9	0.0	136.7	1.367	25.9	24.9	1.1	**0.8**	0.9
166.0	1.660	24.9	25.1	-0.2	136.7	1.367	26.1	25.0	1.1	**0.8**	0.9
161.1	1.611	24.9	25.0	-0.1	136.7	1.367	25.9	25.0	1.0	**0.7**	0.9
161.1	1.611	24.9	25.0	-0.1	136.7	1.367	26.3	25.3	1.0	**0.7**	0.9
161.1	1.611	24.9	25.0	-0.1	131.8	1.318	26.3	25.3	1.0	**0.7**	0.9
161.1	1.611	24.9	24.7	0.1	131.8	1.318	26.3	25.3	1.0	**0.7**	0.9

Table A.2-6 continued...

208	161.1	1.611	24.9	24.9	0.0	127.0	1.270	26.1	25.0	1.1	0.7	0.8
209	161.1	1.611	24.9	24.9	0.0	127.0	1.270	26.1	25.1	1.0	0.7	0.8
210	161.1	1.611	24.9	24.5	0.4	127.0	1.270	26.3	25.3	1.0	0.7	0.8
211	161.1	1.611	24.9	24.6	0.2	127.0	1.270	26.1	25.1	1.0	0.7	0.8
212	161.1	1.611	24.9	24.6	0.2	127.0	1.270	26.3	25.2	1.1	0.7	0.8
213	166.0	1.660	24.9	24.6	0.2	127.0	1.270	26.3	25.2	1.1	0.7	0.9
214	161.1	1.611	25.0	24.9	0.1	127.0	1.270	26.3	25.2	1.1	0.7	0.8
215	161.1	1.611	24.9	24.9	0.0	127.0	1.270	26.2	25.1	1.1	0.7	0.8
216	161.1	1.611	25.0	24.7	0.2	127.0	1.270	26.2	25.1	1.1	0.7	0.8
217	161.1	1.611	25.0	24.7	0.2	122.1	1.221	26.3	25.2	1.1	0.7	0.8
218	161.1	1.611	25.0	24.7	0.2	122.1	1.221	26.3	25.1	1.2	0.7	0.8
219	161.1	1.611	24.9	24.7	0.1	122.1	1.221	26.2	25.1	1.1	0.7	0.8
220	161.1	1.611	25.0	24.9	0.1	122.1	1.221	26.2	25.1	1.1	0.7	0.8
221	161.1	1.611	25.0	24.9	0.1	122.1	1.221	26.3	25.1	1.2	0.7	0.8
222	161.1	1.611	25.0	24.7	0.2	122.1	1.221	26.2	25.2	1.0	0.7	0.8
223	161.1	1.611	24.9	24.9	0.0	122.1	1.221	26.3	25.2	1.1	0.7	0.8
224	161.1	1.611	25.0	25.0	0.0	122.1	1.221	26.3	25.2	1.1	0.7	0.8
225	161.1	1.611	25.0	24.9	0.1	122.1	1.221	26.3	25.5	0.8	0.7	0.8
226	161.1	1.611	25.0	24.9	0.1	122.1	1.221	26.3	25.4	1.0	0.7	0.8
227	161.1	1.611	25.0	24.9	0.1	122.1	1.221	26.3	25.2	1.1	0.7	0.8
228	156.3	1.563	25.0	25.0	0.0	117.2	1.172	26.2	25.2	1.0	0.7	0.8
229	161.1	1.611	24.9	25.0	-0.1	117.2	1.172	26.2	25.2	1.0	0.7	0.8
230	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.3	25.4	1.0	0.7	0.8
231	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.2	25.1	1.1	0.7	0.8
232	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.2	25.1	1.1	0.7	0.8
233	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.3	25.2	1.1	0.7	0.8
234	161.1	1.611	25.0	25.0	0.0	117.2	1.172	26.3	25.2	1.1	0.7	0.8
235	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.3	25.4	1.0	0.7	0.8
236	161.1	1.611	25.0	25.0	0.0	117.2	1.172	26.3	25.1	1.2	0.7	0.8
237	161.1	1.611	24.9	25.0	-0.1	117.2	1.172	26.4	25.2	1.2	0.7	0.8
238	161.1	1.611	25.0	24.7	0.2	117.2	1.172	26.3	25.2	1.1	0.7	0.8
239	161.1	1.611	25.0	24.6	0.4	117.2	1.172	26.3	25.2	1.1	0.7	0.8
240	161.1	1.611	25.0	24.9	0.1	117.2	1.172	26.4	25.2	1.2	0.7	0.8
241	161.1	1.611	25.1	24.8	0.4	117.2	1.172	26.2	25.2	1.0	0.7	0.8
242	161.1	1.611	25.0	25.1	-0.1	117.2	1.172	26.4	25.2	1.2	0.7	0.8
243	161.1	1.611	25.1	25.0	0.1	117.2	1.172	26.3	25.2	1.1	0.7	0.8
244	161.1	1.611	25.0	24.7	0.4	117.2	1.172	26.3	25.2	1.1	0.7	0.8
245	161.1	1.611	25.1	24.8	0.4	112.3	1.123	26.3	25.1	1.2	0.7	0.8
246	161.1	1.611	25.0	24.5	0.5	112.3	1.123	26.5	25.4	1.1	0.7	0.8
247	156.3	1.563	24.9	24.6	0.2	112.3	1.123	26.6	25.5	1.1	0.7	0.8
248	156.3	1.563	25.0	24.7	0.2	112.3	1.123	26.5	25.4	1.1	0.7	0.8
249	156.3	1.563	25.0	24.6	0.4	112.3	1.123	26.5	25.4	1.1	0.7	0.8
250	156.3	1.563	25.0	25.0	0.0	112.3	1.123	26.3	25.2	1.1	0.7	0.8
251	156.3	1.563	25.0	25.1	-0.1	112.3	1.123	26.5	25.5	1.0	0.7	0.8
252	156.3	1.563	25.1	25.0	0.1	112.3	1.123	26.5	25.5	1.0	0.7	0.8
253	156.3	1.563	25.0	24.9	0.1	107.4	1.074	26.4	25.4	1.0	0.7	0.8
254	156.3	1.563	25.0	25.1	-0.1	112.3	1.123	26.3	25.2	1.1	0.7	0.8
255	156.3	1.563	25.1	25.1	0.0	112.3	1.123	26.5	25.4	1.1	0.7	0.8
256	156.3	1.563	25.1	25.0	0.1	112.3	1.123	26.5	25.4	1.1	0.7	0.8
257	156.3	1.563	25.1	25.0	0.1	107.4	1.074	26.5	25.4	1.1	0.7	0.8
258	156.3	1.563	25.3	25.1	0.2	107.4	1.074	26.5	25.4	1.1	0.7	0.8
259	156.3	1.563	25.2	25.2	0.0	107.4	1.074	26.5	25.4	1.1	0.7	0.8
260	156.3	1.563	25.2	25.1	0.1	107.4	1.074	26.5	25.4	1.1	0.7	0.8
261	156.3	1.563	25.2	25.2	0.0	107.4	1.074	26.5	25.4	1.1	0.7	0.8

Table A.2-6 continued...

262	156.3	1.563	25.1	25.1	0.0	107.4	1.074	26.6	25.4	1.2	0.7	0.8
263	156.3	1.563	25.3	25.0	0.4	107.4	1.074	26.5	25.3	1.2	0.7	0.8
264	156.3	1.563	25.0	25.1	-0.1	107.4	1.074	26.7	25.5	1.2	0.7	0.8
265	156.3	1.563	25.0	25.1	-0.1	107.4	1.074	26.5	25.4	1.1	0.7	0.8
266	156.3	1.563	25.2	25.2	0.0	107.4	1.074	26.5	25.4	1.1	0.7	0.8
267	156.3	1.563	25.2	25.3	-0.1	107.4	1.074	26.5	25.4	1.1	0.7	0.8
268	156.3	1.563	25.2	25.3	-0.1	107.4	1.074	26.5	25.3	1.2	0.7	0.8
269	156.3	1.563	25.2	25.1	0.1	107.4	1.074	26.6	25.5	1.1	0.7	0.8
270	156.3	1.563	25.2	25.2	0.0	107.4	1.074	26.6	25.5	1.1	0.7	0.8
271	156.3	1.563	25.2	25.1	0.1	107.4	1.074	26.7	25.6	1.1	0.7	0.8
272	156.3	1.563	25.2	25.1	0.1	107.4	1.074	26.6	25.5	1.1	0.7	0.8
273	156.3	1.563	25.2	25.3	-0.1	102.5	1.025	26.6	25.5	1.1	0.6	0.8
274	156.3	1.563	25.2	25.2	0.0	102.5	1.025	26.6	25.5	1.1	0.6	0.8
275	156.3	1.563	25.2	25.3	-0.1	102.5	1.025	26.6	25.6	1.0	0.6	0.8
276	156.3	1.563	25.2	25.3	-0.1	102.5	1.025	26.6	25.5	1.1	0.6	0.8
277	156.3	1.563	25.3	25.1	0.2	102.5	1.025	26.6	25.5	1.1	0.6	0.8
278	156.3	1.563	25.2	25.1	0.1	102.5	1.025	26.6	25.4	1.2	0.6	0.8
279	156.3	1.563	25.3	25.1	0.2	102.5	1.025	26.6	25.4	1.2	0.6	0.8
280	156.3	1.563	25.3	25.2	0.1	102.5	1.025	26.6	25.4	1.2	0.6	0.8
281	156.3	1.563	25.3	25.2	0.1	102.5	1.025	26.6	25.4	1.2	0.6	0.8
282	151.4	1.514	25.2	25.3	-0.1	102.5	1.025	26.6	25.5	1.1	0.6	0.8
283	151.4	1.514	25.3	25.3	0.0	102.5	1.025	26.6	25.5	1.1	0.6	0.8
284	151.4	1.514	25.3	25.3	0.0	102.5	1.025	26.7	25.5	1.2	0.6	0.8
285	151.4	1.514	25.3	25.2	0.1	102.5	1.025	26.6	25.6	1.0	0.6	0.8
286	151.4	1.514	25.3	25.2	0.1	102.5	1.025	26.7	25.5	1.2	0.6	0.8
287	151.4	1.514	25.3	25.2	0.1	102.5	1.025	26.7	25.5	1.2	0.6	0.8
288	151.4	1.514	25.2	25.1	0.1	97.7	0.977	26.6	25.6	1.0	0.6	0.8
289	151.4	1.514	25.2	25.2	0.0	97.7	0.977	26.5	25.4	1.1	0.6	0.8
290	151.4	1.514	25.3	25.0	0.4	97.7	0.977	26.7	25.5	1.2	0.6	0.8
291	151.4	1.514	25.2	25.2	0.0	97.7	0.977	26.7	25.6	1.1	0.6	0.8
292	151.4	1.514	25.2	25.2	0.0	97.7	0.977	26.6	25.5	1.1	0.6	0.8
293	151.4	1.514	25.3	25.3	0.0	97.7	0.977	26.7	25.6	1.1	0.6	0.8
294	151.4	1.514	25.3	24.0	1.3	97.7	0.977	26.6	25.5	1.1	0.6	0.8
295	151.4	1.514	25.0	24.0	1.0	97.7	0.977	26.6	25.5	1.1	0.6	0.8
296	151.4	1.514	25.1	24.3	0.8	97.7	0.977	26.6	25.4	1.2	0.6	0.8
297	151.4	1.514	25.0	24.1	0.8	97.7	0.977	26.6	25.5	1.1	0.6	0.8
298	151.4	1.514	25.1	24.7	0.5	97.7	0.977	26.7	25.5	1.2	0.6	0.8
299	151.4	1.514	25.1	24.7	0.4	97.7	0.977	26.8	25.8	1.1	0.6	0.8
300	151.4	1.514	25.1	24.8	0.4	97.7	0.977	26.7	25.6	1.1	0.6	0.8
301	151.4	1.514	25.1	24.8	0.4	97.7	0.977	26.7	25.5	1.2	0.6	0.8
302	151.4	1.514	25.1	24.9	0.2	97.7	0.977	26.7	25.8	1.0	0.6	0.8
303	151.4	1.514	25.1	24.8	0.4	97.7	0.977	26.7	25.6	1.1	0.6	0.8
304	151.4	1.514	25.1	25.0	0.1	97.7	0.977	26.6	25.5	1.1	0.6	0.8
305	151.4	1.514	25.1	25.0	0.1	97.7	0.977	26.6	24.8	1.8	0.6	0.8
306	151.4	1.514	25.1	25.1	0.0	102.5	1.025	26.3	21.8	4.6	0.6	0.8
307	151.4	1.514	25.1	25.1	0.0	102.5	1.025	26.0	21.4	4.6	0.6	0.8
308	151.4	1.514	25.3	25.2	0.1	102.5	1.025	26.2	23.0	3.1	0.6	0.8
309	151.4	1.514	25.1	25.0	0.1	102.5	1.025	26.2	23.6	2.5	0.6	0.8
310	151.4	1.514	25.3	25.3	0.0	97.7	0.977	26.0	23.9	2.2	0.6	0.8
311	151.4	1.514	25.3	25.2	0.1	97.7	0.977	26.0	24.5	1.6	0.6	0.8
312	151.4	1.514	25.3	25.2	0.1	97.7	0.977	26.2	24.8	1.4	0.6	0.8
313	151.4	1.514	25.3	25.2	0.1	97.7	0.977	26.2	24.9	1.3	0.6	0.8
314	151.4	1.514	25.2	25.3	-0.1	97.7	0.977	26.1	25.0	1.1	0.6	0.8
315	151.4	1.514	25.2	25.2	0.0	97.7	0.977	26.2	25.1	1.1	0.6	0.8

Table A.2-7 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was empty and carbon dioxide purging time was 30 min.

Sample No.	Replicate No.																					
	E21-30					E22-30					E23-30					E24-30					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	22.0	19.9	2.0	253.9	2.539	20.0	19.1	0.9	253.9	2.539	27.0	26.2	0.8	253.9	2.539	25.3	24.1	1.2	2.5	0.0
1	229.5	2.295	22.1	20.1	2.0	190.4	1.904	19.9	19.0	0.9	249.0	2.490	26.6	26.0	0.6	229.5	2.295	25.0	24.0	1.0	2.2	0.2
2	219.7	2.197	22.0	20.1	1.9	136.7	1.367	19.7	18.9	0.9	249.0	2.490	26.4	26.0	0.4	224.6	2.246	24.7	24.0	0.7	2.1	0.5
3	214.8	2.148	22.1	20.2	1.9	92.8	0.928	19.6	18.8	0.9	244.1	2.441	26.3	26.0	0.2	219.7	2.197	24.6	24.0	0.6	1.9	0.7
4	210.0	2.100	21.9	20.1	1.8	63.5	0.635	19.7	19.0	0.6	244.1	2.441	26.3	26.0	0.2	219.7	2.197	24.5	23.9	0.6	1.8	0.8
5	205.1	2.051	21.9	20.1	1.8	39.1	0.391	19.8	19.0	0.7	244.1	2.441	26.3	25.9	0.4	214.8	2.148	24.6	24.0	0.6	1.8	0.9
6	200.2	2.002	22.0	20.1	1.9	24.4	0.244	19.8	18.9	0.9	244.1	2.441	26.3	26.1	0.2	214.8	2.148	24.4	23.8	0.6	1.7	1.0
7	195.3	1.953	22.0	20.1	1.9	14.6	0.146	19.7	18.9	0.7	244.1	2.441	26.2	25.7	0.5	214.8	2.148	24.6	24.0	0.6	1.7	1.0
8	195.3	1.953	22.0	20.1	1.9						239.3	2.393	26.3	25.8	0.5	214.8	2.148	24.4	23.8	0.6	1.6	1.1
9	190.4	1.904	21.9	19.9	1.9						239.3	2.393	26.3	25.8	0.5	214.8	2.148	24.3	23.8	0.5	1.6	1.1
10	190.4	1.904	21.9	19.9	1.9						239.3	2.393	26.3	25.8	0.5	214.8	2.148	24.3	23.8	0.5	1.6	1.1
11	185.5	1.855	21.9	20.1	1.8						239.3	2.393	26.2	25.8	0.4	214.8	2.148	24.5	23.9	0.6	1.6	1.1
12	180.7	1.807	22.0	20.2	1.8						239.3	2.393	26.2	25.7	0.5	214.8	2.148	24.3	23.7	0.6	1.6	1.1
13	175.8	1.758	22.0	19.9	2.0						239.3	2.393	26.2	25.8	0.4	210.0	2.100	24.5	23.9	0.6	1.6	1.1
14	175.8	1.758	22.0	20.1	1.9						239.3	2.393	26.2	25.8	0.4	210.0	2.100	24.4	23.9	0.5	1.6	1.1
15	175.8	1.758	21.9	19.9	1.9						239.3	2.393	26.1	25.8	0.2	210.0	2.100	24.4	23.8	0.6	1.6	1.1
16	170.9	1.709	21.9	20.1	1.8						239.3	2.393	26.3	25.9	0.4	210.0	2.100	24.4	23.8	0.6	1.6	1.1
17	166.0	1.660	22.0	20.1	1.9						234.4	2.344	26.3	25.9	0.4	210.0	2.100	24.4	23.8	0.6	1.5	1.1
18	166.0	1.660	22.0	20.0	2.0						234.4	2.344	26.3	25.9	0.4	210.0	2.100	24.5	23.8	0.7	1.5	1.1
19	161.1	1.611	22.0	20.1	1.9						234.4	2.344	26.1	25.9	0.2	210.0	2.100	24.5	23.8	0.7	1.5	1.1
20	161.1	1.611	21.9	19.9	1.9						234.4	2.344	26.3	26.0	0.2	210.0	2.100	24.5	23.8	0.7	1.5	1.1
21	156.3	1.563	21.9	19.9	1.9						234.4	2.344	26.1	25.9	0.2	210.0	2.100	24.4	23.7	0.7	1.5	1.1
22	156.3	1.563	21.9	19.9	1.9						234.4	2.344	26.1	25.8	0.4	210.0	2.100	24.6	23.9	0.7	1.5	1.1
23	151.4	1.514	21.9	19.9	1.9						234.4	2.344	26.1	25.8	0.4	205.1	2.051	24.6	24.0	0.6	1.5	1.0
24	151.4	1.514	21.9	19.9	1.9						234.4	2.344	26.3	26.1	0.2	205.1	2.051	24.6	23.9	0.7	1.5	1.0
25	146.5	1.465	21.9	19.9	1.9						234.4	2.344	26.1	25.7	0.5	205.1	2.051	24.5	23.9	0.6	1.5	1.0
26	146.5	1.465	21.9	20.1	1.8						234.4	2.344	26.3	25.8	0.5	205.1	2.051	24.6	23.9	0.7	1.5	1.0
27	141.6	1.416	21.9	19.9	1.9						229.5	2.295	26.0	25.7	0.4	205.1	2.051	24.5	23.9	0.6	1.4	1.0
28	141.6	1.416	21.9	20.1	1.8						229.5	2.295	26.0	25.7	0.4	205.1	2.051	24.6	23.9	0.7	1.4	1.0
29	141.6	1.416	21.9	19.9	1.9						229.5	2.295	26.0	25.7	0.4	205.1	2.051	24.4	23.8	0.6	1.4	1.0
30	136.7	1.367	21.9	20.1	1.8						229.5	2.295	26.2	25.8	0.4	205.1	2.051	24.5	23.9	0.6	1.4	1.0
31	136.7	1.367	21.9	20.1	1.8						229.5	2.295	26.2	25.7	0.5	200.2	2.002	24.4	23.6	0.7	1.4	1.0
32	136.7	1.367	21.9	20.1	1.8						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.4	23.6	0.7	1.4	1.0
33	131.8	1.318	21.9	20.1	1.8						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.5	23.8	0.7	1.4	1.0
34	131.8	1.318	21.7	19.6	2.0						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.5	23.8	0.7	1.4	1.0
35	127.0	1.270	21.9	19.8	2.0						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.7	24.0	0.7	1.4	1.0
36	122.1	1.221	21.9	19.9	1.9						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.7	24.0	0.7	1.4	1.0
37	117.2	1.172	21.7	19.9	1.8						229.5	2.295	26.2	25.8	0.4	200.2	2.002	24.7	23.9	0.8	1.4	1.0
38	117.2	1.172	21.7	20.1	1.7						229.5	2.295	26.1	25.8	0.2	200.2	2.002	24.6	23.9	0.7	1.4	1.0
39	117.2	1.172	21.7	19.9	1.8						229.5	2.295	26.1	26.0	0.1	200.2	2.002	24.6	23.9	0.7	1.4	1.0
40	112.3	1.123	21.9	19.9	1.9						229.5	2.295	26.0	25.7	0.4	200.2	2.002	24.6	23.9	0.7	1.4	1.0
41	112.3	1.123	21.7	19.9	1.8						229.5	2.295	26.2	25.8	0.4	195.3	1.953	24.6	24.0	0.6	1.3	1.0
42	107.4	1.074	21.9	19.9	1.9						229.5	2.295	26.2	25.8	0.4	195.3	1.953	24.6	23.9	0.7	1.3	1.0
43	107.4	1.074	21.9	20.1	1.8						229.5	2.295	26.2	25.8	0.4	190.4	1.904	24.6	23.9	0.7	1.3	1.0
44	107.4	1.074	21.9	19.9	1.9						224.6	2.246	26.1	26.0	0.1	190.4	1.904	24.6	23.9	0.7	1.3	1.0
45	102.5	1.025	21.9	20.1	1.8						224.6	2.246	26.2	26.0	0.2	190.4	1.904	24.6	23.9	0.7	1.3	1.0

Table A.2-7 continued...

46	102.5	1.025	21.9	19.9	1.9
47	102.5	1.025	21.9	20.1	1.8
48	102.5	1.025	21.9	19.9	1.9
49	97.7	0.977	21.9	19.9	1.9
50	97.7	0.977	21.9	19.9	1.9
51	97.7	0.977	21.9	19.9	1.9
52	97.7	0.977	21.9	19.9	1.9
53	92.8	0.928	21.9	19.9	1.9
54	92.8	0.928	21.9	19.9	1.9
55	92.8	0.928	21.9	19.9	1.9
56	92.8	0.928	21.9	19.9	1.9
57	87.9	0.879	21.7	19.9	1.8
58	87.9	0.879	21.7	19.9	1.8
59	87.9	0.879	21.9	19.9	1.9
60	83.0	0.830	21.7	19.9	1.8
61	83.0	0.830	21.7	19.9	1.8
62	83.0	0.830	21.7	19.9	1.8
63	83.0	0.830	21.9	19.9	1.9
64	83.0	0.830	21.7	19.8	1.9
65	83.0	0.830	21.7	19.8	1.9
66	78.1	0.781	21.6	19.9	1.7
67	78.1	0.781	21.7	19.8	1.9
68	78.1	0.781	21.7	19.9	1.8
69	73.2	0.732	21.7	19.8	1.9
70	73.2	0.732	21.5	19.6	1.9
71	73.2	0.732	21.5	19.7	1.8
72	73.2	0.732	21.5	19.7	1.8
73	73.2	0.732	21.7	19.8	1.9
74	73.2	0.732	21.6	19.9	1.7
75	73.2	0.732	21.6	19.8	1.8
76	68.4	0.684	21.6	19.6	1.9
77	68.4	0.684	21.7	19.8	1.9
78	68.4	0.684	21.7	19.9	1.8
79	68.4	0.684	21.5	19.6	1.9
80	68.4	0.684	21.5	19.6	1.9
81	68.4	0.684	21.4	19.4	1.9
82	68.4	0.684	21.5	19.6	1.9
83	68.4	0.684	21.4	19.6	1.8
84	63.5	0.635	21.4	19.6	1.8
85	63.5	0.635	21.4	19.6	1.8
86	63.5	0.635	21.4	19.6	1.8
87	63.5	0.635	21.4	19.6	1.8
88	63.5	0.635	21.2	19.4	1.8
89	63.5	0.635	21.4	19.7	1.7
90	58.6	0.586	21.4	19.6	1.8
91	58.6	0.586	21.4	19.6	1.8
92	58.6	0.586	21.4	19.7	1.7
93	58.6	0.586	21.3	19.7	1.6
94	58.6	0.586	21.4	19.6	1.8
95	58.6	0.586	21.4	19.6	1.8
96	58.6	0.586	21.3	19.7	1.6
97	58.6	0.586	21.4	19.6	1.8
98	58.6	0.586	21.3	19.6	1.7
99	58.6	0.586	21.4	19.6	1.8

219.7	2.197	26.2	26.0	0.2	190.4	1.904	24.6	23.9	0.7	1.3	1.0
219.7	2.197	26.2	25.9	0.4	190.4	1.904	24.7	24.0	0.7	1.3	1.0
219.7	2.197	26.2	25.9	0.4	190.4	1.904	24.7	24.0	0.7	1.3	1.0
219.7	2.197	26.2	25.9	0.4	190.4	1.904	24.7	24.0	0.7	1.3	1.0
214.8	2.148	26.2	25.8	0.5	190.4	1.904	24.7	23.9	0.8	1.3	1.0
214.8	2.148	26.2	25.9	0.4	190.4	1.904	24.7	23.9	0.8	1.3	1.0
214.8	2.148	26.1	25.9	0.2	185.5	1.855	24.7	23.9	0.8	1.2	1.0
214.8	2.148	26.3	26.2	0.1	185.5	1.855	24.7	23.9	0.8	1.2	1.0
214.8	2.148	26.1	25.9	0.2	185.5	1.855	24.7	24.0	0.7	1.2	1.0
214.8	2.148	26.1	25.8	0.4	185.5	1.855	24.8	24.1	0.7	1.2	1.0
214.8	2.148	26.1	25.8	0.4	185.5	1.855	24.8	24.1	0.7	1.2	1.0
214.8	2.148	26.2	25.8	0.5	185.5	1.855	24.8	24.1	0.7	1.2	1.0
214.8	2.148	26.1	25.9	0.2	185.5	1.855	24.8	24.1	0.7	1.2	1.0
210.0	2.100	26.1	25.9	0.2	185.5	1.855	24.8	24.1	0.7	1.2	1.0
210.0	2.100	26.2	25.9	0.4	185.5	1.855	24.8	24.1	0.7	1.2	1.0
210.0	2.100	26.1	25.9	0.2	185.5	1.855	24.9	24.1	0.8	1.2	1.0
210.0	2.100	26.2	26.0	0.2	185.5	1.855	24.8	24.1	0.7	1.2	1.0
210.0	2.100	26.2	25.9	0.4	180.7	1.807	24.8	24.0	0.8	1.2	1.0
210.0	2.100	26.1	25.7	0.4	180.7	1.807	24.8	24.0	0.8	1.2	1.0
205.1	2.051	26.4	25.9	0.5	180.7	1.807	25.0	24.1	0.8	1.2	0.9
205.1	2.051	26.2	25.9	0.4	180.7	1.807	25.0	24.1	0.8	1.2	0.9
205.1	2.051	26.4	25.9	0.5	180.7	1.807	24.8	24.0	0.8	1.2	0.9
205.1	2.051	26.2	25.7	0.5	180.7	1.807	24.8	24.0	0.8	1.2	0.9
205.1	2.051	26.1	25.7	0.4	180.7	1.807	24.8	24.0	0.8	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	24.9	24.1	0.7	1.1	1.0
205.1	2.051	26.2	25.8	0.5	180.7	1.807	24.9	24.1	0.7	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	25.0	24.1	0.8	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	24.9	24.1	0.7	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	24.9	24.1	0.7	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	24.8	24.0	0.8	1.1	1.0
205.1	2.051	26.1	25.6	0.5	180.7	1.807	24.8	24.0	0.8	1.1	1.0
205.1	2.051	25.9	25.5	0.4	180.7	1.807	25.0	24.1	0.8	1.1	1.0
205.1	2.051	26.2	25.7	0.5	175.8	1.758	25.1	24.3	0.8	1.1	1.0
205.1	2.051	26.0	25.7	0.4	175.8	1.758	25.1	24.3	0.8	1.1	1.0
200.2	2.002	26.0	25.4	0.6	175.8	1.758	25.0	24.3	0.7	1.1	0.9
205.1	2.051	26.0	25.5	0.5	175.8	1.758	25.1	24.3	0.8	1.1	1.0
200.2	2.002	26.1	25.8	0.2	175.8	1.758	25.1	24.3	0.8	1.1	0.9
200.2	2.002	26.1	25.7	0.4	175.8	1.758	25.1	24.2	1.0	1.1	0.9
200.2	2.002	26.1	25.7	0.4	175.8	1.758	25.0	24.2	0.8	1.1	0.9
200.2	2.002	26.1	25.7	0.4	175.8	1.758	25.1	24.2	1.0	1.1	0.9
200.2	2.002	25.9	25.4	0.5	175.8	1.758	25.1	24.3	0.8	1.1	0.9
200.2	2.002	25.9	25.4	0.5	175.8	1.758	25.0	24.2	0.8	1.1	0.9
200.2	2.002	26.1	25.7	0.4	175.8	1.758	25.0	24.2	0.8	1.1	0.9
200.2	2.002	26.1	25.6	0.5	175.8	1.758	25.0	24.3	0.7	1.1	0.9
200.2	2.002	26.1	25.7	0.4	175.8	1.758	25.0	24.2	0.8	1.1	1.0
200.2	2.002	25.9	25.5	0.4	175.8	1.758	25.2	24.4	0.8	1.1	1.0
200.2	2.002	26.2	25.7	0.5	175.8	1.758	25.0	24.2	0.8	1.1	1.0
200.2	2.002	26.0	25.7	0.4	170.9	1.709	25.0	24.2	0.8	1.1	0.9
200.2	2.002	26.2	25.7	0.5	170.9	1.709	25.0	24.2	0.8	1.1	0.9
200.2	2.002	25.9	25.4	0.5	170.9	1.709	25.0	24.2	0.8	1.1	0.9
200.2	2.002	25.9	25.7	0.2	170.9	1.709	25.2	24.2	1.0	1.1	0.9
200.2	2.002	25.9	25.5	0.4	170.9	1.709	25.2	24.2	1.0	1.1	0.9
200.2	2.002	26.0	25.5	0.5	170.9	1.709	25.0	24.2	0.8	1.1	0.9
200.2	2.002	26.1	25.7	0.4	170.9	1.709	25.2	24.4	0.8	1.1	0.9

Table A.2-7 continued...

100	58.6	0.586	21.4	19.6	1.8
101	53.7	0.537	21.4	19.6	1.8
102	53.7	0.537	21.2	19.5	1.7
103	53.7	0.537	21.2	19.4	1.8
104	53.7	0.537	21.4	19.6	1.8
105	53.7	0.537	21.4	19.6	1.8
106	53.7	0.537	21.1	19.4	1.7
107	53.7	0.537	21.3	19.6	1.7
108	53.7	0.537	21.4	19.6	1.8
109	53.7	0.537	21.2	19.4	1.8
110	53.7	0.537	21.2	19.4	1.8
111	53.7	0.537	21.2	19.5	1.7
112	53.7	0.537	21.2	19.4	1.8
113	53.7	0.537	21.2	19.5	1.7
114	53.7	0.537	21.2	19.4	1.8
115	53.7	0.537	21.2	19.4	1.8
116	53.7	0.537	21.1	19.5	1.6
117	53.7	0.537	21.2	19.5	1.7
118	53.7	0.537	21.2	19.4	1.8
119	48.8	0.488	21.1	19.5	1.6
120	48.8	0.488	21.1	19.4	1.7
121	48.8	0.488	21.1	19.4	1.7
122	48.8	0.488	21.1	19.4	1.7
123	48.8	0.488	21.1	19.4	1.7
124	48.8	0.488	21.1	19.4	1.7
125	48.8	0.488	21.1	19.4	1.7
126	48.8	0.488	21.1	19.4	1.7
127	48.8	0.488	21.1	19.4	1.7
128	48.8	0.488	21.1	19.4	1.7
129	48.8	0.488	21.1	19.4	1.7
130	48.8	0.488	21.1	19.4	1.7
131	48.8	0.488	20.9	19.2	1.7
132	48.8	0.488	21.1	19.4	1.7
133	48.8	0.488	21.1	19.4	1.7
134	48.8	0.488	21.1	19.2	1.8
135	48.8	0.488	20.9	19.4	1.6
136	48.8	0.488	20.9	19.4	1.6
137	48.8	0.488	20.9	19.2	1.7
138	48.8	0.488	20.9	19.2	1.7
139	48.8	0.488	20.9	19.4	1.6
140	48.8	0.488	20.9	19.2	1.7
141	48.8	0.488	20.9	19.2	1.7
142	48.8	0.488	20.9	19.2	1.7
143	48.8	0.488	21.1	19.4	1.7
144	48.8	0.488	20.9	19.2	1.7
145	48.8	0.488	21.1	19.2	1.8
146	48.8	0.488	21.1	19.4	1.7
147	48.8	0.488	20.9	19.4	1.6
148	48.8	0.488	20.8	19.2	1.6
149	48.8	0.488	20.9	19.2	1.7
150	48.8	0.488	20.8	19.2	1.6
151	48.8	0.488	20.9	19.2	1.7
152	48.8	0.488	20.8	19.1	1.7
153	48.8	0.488	20.9	19.3	1.6

200.2	2.002	26.0	25.5	0.5	170.9	1.709	25.2	24.4	0.8	**1.1**	0.9
200.2	2.002	26.0	25.4	0.6	170.9	1.709	25.2	24.4	0.8	**1.1**	0.9
200.2	2.002	26.0	25.5	0.5	170.9	1.709	25.4	24.5	0.8	**1.1**	0.9
200.2	2.002	26.0	25.5	0.5	170.9	1.709	25.4	24.4	1.0	**1.1**	0.9
195.3	1.953	26.2	25.7	0.5	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.1	25.7	0.4	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.2	25.8	0.4	170.9	1.709	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.2	25.8	0.4	166.0	1.660	25.2	24.3	1.0	**1.0**	0.9
195.3	1.953	26.2	25.8	0.4	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
195.3	1.953	26.1	25.8	0.2	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
195.3	1.953	26.1	25.8	0.2	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.1	25.7	0.4	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	25.9	25.5	0.4	166.0	1.660	25.2	24.2	1.0	**1.0**	0.9
195.3	1.953	25.9	25.5	0.4	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
195.3	1.953	25.9	25.7	0.2	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
195.3	1.953	25.9	25.4	0.5	166.0	1.660	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	25.9	25.5	0.4	166.0	1.660	25.4	24.4	1.0	**1.0**	0.9
195.3	1.953	25.9	25.7	0.2	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.1	25.8	0.2	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
195.3	1.953	26.1	25.8	0.2	161.1	1.611	25.2	24.3	1.0	**1.0**	0.9
195.3	1.953	26.1	25.7	0.4	161.1	1.611	25.4	24.3	1.1	**1.0**	0.9
190.4	1.904	25.9	25.5	0.4	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	26.1	25.7	0.4	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	26.1	25.6	0.5	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	26.1	25.6	0.5	161.1	1.611	25.4	24.4	1.0	**1.0**	0.9
190.4	1.904	26.1	25.6	0.5	161.1	1.611	25.2	24.4	0.8	**1.0**	0.9
190.4	1.904	26.0	25.6	0.4	161.1	1.611	25.5	24.6	1.0	**1.0**	0.9
190.4	1.904	25.8	25.4	0.4	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
190.4	1.904	25.8	25.4	0.4	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
190.4	1.904	25.9	25.5	0.4	161.1	1.611	25.4	24.6	0.8	**1.0**	0.9
190.4	1.904	25.8	25.5	0.2	161.1	1.611	25.4	24.5	1.0	**1.0**	0.9
190.4	1.904	25.9	25.4	0.5	161.1	1.611	25.5	24.5	1.1	**1.0**	0.9
185.5	1.855	25.8	25.4	0.4	156.3	1.563	25.5	24.5	1.1	**1.0**	0.9
185.5	1.855	25.9	25.3	0.6	156.3	1.563	25.5	24.7	0.8	**1.0**	0.9
185.5	1.855	26.0	25.7	0.2	156.3	1.563	25.4	24.4	1.0	**1.0**	0.9
185.5	1.855	25.8	25.7	0.1	156.3	1.563	25.2	24.4	0.8	**1.0**	0.9
185.5	1.855	26.1	25.7	0.4	156.3	1.563	25.2	22.6	2.6	**1.0**	0.9
185.5	1.855	25.9	25.5	0.4	161.1	1.611	25.4	23.7	1.7	**1.0**	0.9
185.5	1.855	26.0	25.8	0.1	161.1	1.611	25.4	24.0	1.4	**1.0**	0.9
185.5	1.855	26.0	25.7	0.2	156.3	1.563	25.6	24.5	1.1	**1.0**	0.9
185.5	1.855	26.0	25.7	0.2	156.3	1.563	25.6	24.4	1.2	**1.0**	0.9
185.5	1.855	26.0	25.9	0.1	156.3	1.563	25.5	24.6	0.8	**1.0**	0.9
185.5	1.855	25.8	25.7	0.1	156.3	1.563	25.5	24.5	1.0	**1.0**	0.9
185.5	1.855	25.8	25.7	0.1	156.3	1.563	25.4	24.5	1.0	**1.0**	0.9
185.5	1.855	26.0	26.0	0.0	156.3	1.563	25.6	24.6	1.0	**1.0**	0.9
185.5	1.855	26.1	26.0	0.1	156.3	1.563	25.5	24.6	0.8	**1.0**	0.9
185.5	1.855	26.1	26.0	0.1	156.3	1.563	25.5	24.6	0.8	**1.0**	0.9
185.5	1.855	26.0	26.0	0.0	156.3	1.563	25.6	24.6	1.0	**1.0**	0.9
185.5	1.855	26.0	26.0	0.0	151.4	1.514	25.5	24.6	0.8	**1.0**	0.9
185.5	1.855	26.0	26.0	0.0	151.4	1.514	25.6	24.7	0.8	**1.0**	0.9
180.7	1.807	26.2	26.3	-0.1	151.4	1.514	25.6	24.6	1.0	**1.0**	0.8
180.7	1.807	26.2	26.2	0.0	151.4	1.514	25.6	24.6	1.0	**1.0**	0.9
180.7	1.807	26.3	26.1	0.2	151.4	1.514	25.5	24.6	0.8	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.8	24.7	1.1	**1.0**	0.8

Table A.2-7 continued...

154	48.8	0.488	20.9	19.2	1.7
155	48.8	0.488	20.9	19.4	1.6
156	48.8	0.488	20.8	19.2	1.6
157	48.8	0.488	20.6	19.0	1.6
158	48.8	0.488	20.8	19.2	1.6
159	48.8	0.488	20.8	19.2	1.6
160	48.8	0.488	20.6	19.1	1.5
161	48.8	0.488	20.9	19.2	1.7
162	48.8	0.488	20.8	19.2	1.6
163	48.8	0.488	20.8	19.2	1.6
164	48.8	0.488	20.8	19.2	1.6
165	48.8	0.488	20.8	19.2	1.6
166	48.8	0.488	20.7	18.9	1.8
167	48.8	0.488	20.8	19.2	1.6
168	48.8	0.488	20.8	19.2	1.6
169	48.8	0.488	20.6	18.9	1.7
170	53.7	0.537	20.7	19.0	1.7
171	53.7	0.537	20.7	19.1	1.6
172	48.8	0.488	20.6	19.1	1.5
173	48.8	0.488	20.6	19.0	1.6
174	48.8	0.488	20.6	19.0	1.6
175	53.7	0.537	20.6	19.0	1.6
176	48.8	0.488	20.6	19.0	1.6
177	48.8	0.488	20.6	19.0	1.6
178	48.8	0.488	20.8	19.2	1.6
179	48.8	0.488	20.8	19.2	1.6
180	48.8	0.488	20.8	19.2	1.6
181	48.8	0.488	20.7	19.2	1.5
182	48.8	0.488	20.6	18.9	1.7
183	48.8	0.488	20.7	19.1	1.6
184	48.8	0.488	20.5	19.0	1.5
185	48.8	0.488	20.5	19.0	1.5
186	48.8	0.488	20.6	19.0	1.6
187	48.8	0.488	20.5	18.9	1.6
188	48.8	0.488	20.6	19.0	1.6
189	48.8	0.488	20.5	18.9	1.6
190	48.8	0.488	20.5	19.0	1.5
191	48.8	0.488	20.6	19.0	1.6
192	48.8	0.488	20.5	19.0	1.5
193	48.8	0.488	20.6	19.0	1.6
194	48.8	0.488	20.6	19.0	1.6
195	48.8	0.488	20.6	19.0	1.6
196	48.8	0.488	20.5	19.0	1.5
197	48.8	0.488	20.6	19.0	1.6
198	48.8	0.488	20.6	19.0	1.6
199	48.8	0.488	20.6	19.0	1.6
200	48.8	0.488	20.5	18.9	1.6
201	48.8	0.488	20.6	19.0	1.6
202	48.8	0.488	20.5	19.1	1.3
203	48.8	0.488	20.6	19.0	1.6
204	48.8	0.488	20.6	19.0	1.6
205	48.8	0.488	20.6	19.0	1.6
206	48.8	0.488	20.4	18.9	1.6
207	48.8	0.488	20.6	19.1	1.5

180.7	1.807	26.2	26.2	0.0	151.4	1.514	25.6	24.7	1.0	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.6	24.7	1.0	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.6	24.8	0.8	**1.0**	0.8
180.7	1.807	26.2	26.3	-0.1	151.4	1.514	25.5	24.6	0.8	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.6	24.7	1.0	**1.0**	0.8
180.7	1.807	26.3	26.3	0.0	151.4	1.514	25.6	24.7	1.0	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.6	24.7	1.0	**1.0**	0.8
180.7	1.807	26.3	26.2	0.1	151.4	1.514	25.8	24.7	1.1	**1.0**	0.8
180.7	1.807	26.2	26.2	0.0	151.4	1.514	25.6	24.8	0.8	**1.0**	0.8
180.7	1.807	26.2	26.2	0.0	146.5	1.465	25.8	24.7	1.1	**0.9**	0.8
175.8	1.758	26.2	26.2	0.0	146.5	1.465	25.8	24.7	1.1	**0.9**	0.8
175.8	1.758	26.2	26.2	0.0	146.5	1.465	25.8	24.7	1.1	**0.9**	0.8
175.8	1.758	26.3	26.2	0.1	146.5	1.465	25.8	24.7	1.1	**0.9**	0.8
175.8	1.758	26.3	26.2	0.1	146.5	1.465	25.9	25.0	1.0	**0.9**	0.8
175.8	1.758	26.3	26.2	0.1	146.5	1.465	25.8	25.0	0.8	**0.9**	0.8
175.8	1.758	26.2	26.3	-0.1	146.5	1.465	25.6	24.7	1.0	**0.9**	0.8
175.8	1.758	26.3	26.3	0.0	146.5	1.465	25.8	25.0	0.8	**0.9**	0.8
175.8	1.758	26.2	26.2	0.0	146.5	1.465	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.2	26.2	0.0	146.5	1.465	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.2	26.3	-0.1	146.5	1.465	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.4	26.5	-0.1	146.5	1.465	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.3	26.3	0.0	146.5	1.465	25.7	24.9	0.8	**0.9**	0.8
175.8	1.758	26.5	26.5	0.0	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.5	26.5	0.0	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
175.8	1.758	26.4	26.4	0.0	141.6	1.416	25.8	24.7	1.1	**0.9**	0.8
175.8	1.758	26.5	26.4	0.1	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
170.9	1.709	26.5	26.4	0.1	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.4	26.4	0.0	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
170.9	1.709	26.5	26.4	0.1	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.5	26.4	0.1	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.4	26.3	0.1	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
170.9	1.709	26.5	26.4	0.1	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.4	26.4	0.0	141.6	1.416	25.9	25.0	1.0	**0.9**	0.8
170.9	1.709	26.5	26.3	0.2	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.2	26.1	0.1	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
170.9	1.709	26.5	26.5	0.0	141.6	1.416	25.8	24.9	1.0	**0.9**	0.8
170.9	1.709	26.4	26.4	0.0	141.6	1.416	25.9	24.9	1.1	**0.9**	0.8
166.0	1.660	26.6	26.7	-0.1	141.6	1.416	26.2	25.2	1.0	**0.9**	0.8
170.9	1.709	26.6	26.6	0.0	141.6	1.416	26.0	25.0	1.0	**0.9**	0.8
166.0	1.660	26.6	26.6	0.0	136.7	1.367	26.0	25.0	1.0	**0.9**	0.8
166.0	1.660	26.4	26.5	-0.1	136.7	1.367	25.9	24.9	1.1	**0.9**	0.8
166.0	1.660	26.4	26.4	0.0	136.7	1.367	25.9	25.0	1.0	**0.9**	0.8
166.0	1.660	26.5	26.3	0.2	136.7	1.367	25.9	24.9	1.1	**0.9**	0.8
166.0	1.660	26.5	26.4	0.1	136.7	1.367	26.1	24.9	1.2	**0.9**	0.8
166.0	1.660	26.7	26.6	0.1	136.7	1.367	26.0	25.0	1.0	**0.9**	0.8
166.0	1.660	26.5	26.3	0.2	136.7	1.367	25.8	24.9	1.0	**0.9**	0.8
166.0	1.660	26.6	26.6	0.0	136.7	1.367	25.9	24.9	1.1	**0.9**	0.8
161.1	1.611	26.4	26.4	0.0	136.7	1.367	26.1	25.0	1.1	**0.9**	0.8
161.1	1.611	26.4	26.3	0.1	136.7	1.367	25.9	24.9	1.1	**0.9**	0.8
161.1	1.611	26.5	26.3	0.2	136.7	1.367	26.1	25.0	1.1	**0.9**	0.8
161.1	1.611	26.5	26.3	0.2	136.7	1.367	25.9	25.0	1.0	**0.9**	0.8
161.1	1.611	26.3	26.1	0.2	136.7	1.367	26.3	25.3	1.0	**0.9**	0.8
161.1	1.611	26.3	26.0	0.4	131.8	1.318	26.3	25.3	1.0	**0.9**	0.7
161.1	1.611	26.5	26.3	0.2	131.8	1.318	26.3	25.3	1.0	**0.9**	0.7

Table A.2-7 continued...

208	48.8	0.488	20.6	19.1	1.5
209	48.8	0.488	20.6	19.0	1.6
210	48.8	0.488	20.5	19.1	1.3
211	48.8	0.488	20.6	19.0	1.6
212	48.8	0.488	20.6	19.0	1.6
213	48.8	0.488	20.6	19.0	1.6
214	48.8	0.488	20.5	19.0	1.5
215	48.8	0.488	20.5	18.9	1.6
216	48.8	0.488	20.6	19.1	1.5
217	48.8	0.488	20.6	18.9	1.7
218	48.8	0.488	20.3	18.9	1.5
219	48.8	0.488	20.6	19.0	1.6
220	48.8	0.488	20.6	19.0	1.6
221	48.8	0.488	20.3	18.9	1.5
222	48.8	0.488	20.4	18.9	1.6
223	48.8	0.488	20.4	18.7	1.7
224	48.8	0.488	20.4	18.9	1.6
225	48.8	0.488	20.4	18.9	1.6
226	48.8	0.488	20.4	18.9	1.6
227	48.8	0.488	20.3	18.9	1.5
228	48.8	0.488	20.4	18.9	1.6
229	48.8	0.488	20.4	18.7	1.7
230	53.7	0.537	20.4	19.0	1.5
231	48.8	0.488	20.4	19.0	1.5
232	48.8	0.488	20.4	18.9	1.6
233	48.8	0.488	20.4	18.9	1.6
234	48.8	0.488	20.4	18.9	1.6
235	53.7	0.537	20.3	18.9	1.5
236	53.7	0.537	20.3	18.9	1.5
237	53.7	0.537	20.3	18.9	1.5
238	53.7	0.537	20.3	18.8	1.5
239	53.7	0.537	20.3	19.0	1.3
240	53.7	0.537	20.3	18.9	1.5
241	53.7	0.537	20.4	19.0	1.5
242	53.7	0.537	20.4	18.9	1.6
243	53.7	0.537	20.3	18.8	1.5
244	53.7	0.537	20.4	18.9	1.6
245	53.7	0.537	20.3	19.0	1.3
246	53.7	0.537	20.3	18.9	1.5
247	53.7	0.537	20.3	18.9	1.5
248	53.7	0.537	20.3	19.0	1.3
249	53.7	0.537	20.4	18.9	1.6
250	53.7	0.537	20.3	18.9	1.5
251	53.7	0.537	20.3	18.9	1.5
252	53.7	0.537	20.1	18.7	1.5
253	53.7	0.537	20.4	18.9	1.6
254	53.7	0.537	20.3	19.0	1.3
255	53.7	0.537	20.3	18.9	1.5
256	53.7	0.537	20.3	18.9	1.5
257	53.7	0.537	20.3	18.7	1.6
258	53.7	0.537	20.1	18.6	1.6
259	53.7	0.537	20.3	18.9	1.5
260	53.7	0.537	20.3	18.9	1.5
261	53.7	0.537	20.1	18.7	1.5

156.3	1.563	26.3	26.2	0.1	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.3	26.1	0.2	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.3	26.1	0.2	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.5	26.5	0.0	131.8	1.318	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.5	26.3	0.1	127.0	1.270	26.1	25.0	1.1	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	127.0	1.270	26.1	25.1	1.0	**0.8**	0.7
151.4	1.514	26.5	26.3	0.1	127.0	1.270	26.3	25.3	1.0	**0.8**	0.7
151.4	1.514	26.5	26.3	0.1	127.0	1.270	26.1	25.1	1.0	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	127.0	1.270	26.3	25.2	1.1	**0.8**	0.7
151.4	1.514	26.5	26.3	0.1	127.0	1.270	26.3	25.2	1.1	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	127.0	1.270	26.3	25.2	1.1	**0.8**	0.7
151.4	1.514	26.5	26.2	0.2	127.0	1.270	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	127.0	1.270	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.5	26.3	0.1	122.1	1.221	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.3	25.9	0.4	122.1	1.221	26.3	25.1	1.2	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	122.1	1.221	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	122.1	1.221	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	122.1	1.221	26.3	25.1	1.2	**0.8**	0.7
146.5	1.465	26.3	25.9	0.4	122.1	1.221	26.2	25.2	1.0	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	122.1	1.221	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	122.1	1.221	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.3	26.2	0.1	122.1	1.221	26.3	25.5	0.8	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	122.1	1.221	26.3	25.4	1.0	**0.8**	0.7
146.5	1.465	26.5	26.1	0.4	122.1	1.221	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	117.2	1.172	26.2	25.2	1.0	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	117.2	1.172	26.2	25.2	1.0	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	117.2	1.172	26.3	25.4	1.0	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	117.2	1.172	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.3	26.1	0.2	117.2	1.172	26.2	25.1	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.5	26.2	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.7
146.5	1.465	26.2	26.1	0.1	117.2	1.172	26.3	25.4	1.0	**0.8**	0.7
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.3	25.1	1.2	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.4	25.2	1.2	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.4	25.2	1.2	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.2	25.2	1.0	**0.8**	0.6
141.6	1.416	26.3	25.9	0.4	117.2	1.172	26.4	25.2	1.2	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.6
141.6	1.416	26.3	26.1	0.2	117.2	1.172	26.3	25.2	1.1	**0.8**	0.6
136.7	1.367	26.3	26.1	0.2	112.3	1.123	26.3	25.1	1.2	**0.8**	0.6
136.7	1.367	26.3	25.9	0.4	112.3	1.123	26.5	25.4	1.1	**0.8**	0.6
136.7	1.367	26.2	25.9	0.2	112.3	1.123	26.6	25.5	1.1	**0.8**	0.6
136.7	1.367	26.2	25.9	0.2	112.3	1.123	26.5	25.4	1.1	**0.8**	0.6
136.7	1.367	26.3	26.1	0.2	112.3	1.123	26.5	25.4	1.1	**0.8**	0.6
136.7	1.367	26.1	25.8	0.4	112.3	1.123	26.3	25.2	1.1	**0.8**	0.6
136.7	1.367	26.1	25.9	0.2	112.3	1.123	26.5	25.5	1.0	**0.8**	0.6
136.7	1.367	26.0	25.9	0.1	112.3	1.123	26.5	25.5	1.0	**0.8**	0.6
136.7	1.367	26.1	25.9	0.2	107.4	1.074	26.4	25.4	1.0	**0.7**	0.6
136.7	1.367	26.1	25.9	0.2	112.3	1.123	26.3	25.2	1.1	**0.8**	0.6
136.7	1.367	26.1	26.0	0.1	112.3	1.123	26.5	25.4	1.1	**0.8**	0.6

Table A.2-7 continued...

262	53.7	0.537	20.1	18.8	1.3
263	53.7	0.537	20.3	18.7	1.6
264	53.7	0.537	20.3	18.7	1.6
265	53.7	0.537	20.1	18.7	1.5
266	53.7	0.537	20.1	18.7	1.5
267	53.7	0.537	20.1	18.8	1.3
268	53.7	0.537	20.1	18.8	1.3
269	53.7	0.537	20.3	18.9	1.5
270	53.7	0.537	20.1	18.6	1.6
271	53.7	0.537	20.1	18.7	1.5
272	53.7	0.537	20.1	18.7	1.5
273	53.7	0.537	20.1	18.7	1.5
274	53.7	0.537	20.1	18.7	1.5
275	53.7	0.537	20.3	18.7	1.6
276	53.7	0.537	20.3	18.8	1.5
277	53.7	0.537	20.3	18.7	1.6
278	53.7	0.537	20.1	18.5	1.6
279	53.7	0.537	20.3	18.7	1.6
280	53.7	0.537	20.1	18.8	1.3
281	53.7	0.537	20.1	18.7	1.5
282	53.7	0.537	20.3	18.7	1.6
283	53.7	0.537	20.1	18.7	1.5
284	53.7	0.537	20.1	18.7	1.5
285	53.7	0.537	20.1	18.7	1.5
286	53.7	0.537	20.1	18.6	1.5
287	53.7	0.537	20.3	18.8	1.5
288	53.7	0.537	20.3	18.8	1.5
289	53.7	0.537	20.3	18.8	1.5
290	53.7	0.537	20.1	18.7	1.5
291	53.7	0.537	20.3	18.8	1.5
292	53.7	0.537	20.3	18.7	1.6
293	53.7	0.537	20.1	18.5	1.6
294	53.7	0.537	20.1	18.8	1.3
295	53.7	0.537	20.1	18.8	1.3
296	53.7	0.537	20.1	18.8	1.3
297	53.7	0.537	20.3	18.8	1.5
298	53.7	0.537	20.3	18.7	1.6
299	53.7	0.537	20.1	18.8	1.3
300	53.7	0.537	20.1	18.8	1.3
301	53.7	0.537	20.3	18.7	1.6
302	53.7	0.537	20.1	18.8	1.3
303	53.7	0.537	20.1	18.7	1.5
304	53.7	0.537	20.1	18.8	1.3
305	53.7	0.537	20.1	18.7	1.5
306	53.7	0.537	20.0	18.5	1.5
307	53.7	0.537	20.0	18.5	1.5
308	53.7	0.537	19.9	18.3	1.6
309	53.7	0.537	20.1	18.5	1.6
310	53.7	0.537	20.1	18.6	1.5
311	53.7	0.537	19.9	18.5	1.5
312	53.7	0.537	19.9	18.5	1.5
313	48.8	0.488	20.3	18.8	1.5
314	48.8	0.488	20.1	18.6	1.5
315	48.8	0.488	20.0	18.6	1.3

136.7	1.367	26.3	26.1	0.2	112.3	1.123	26.5	25.4	1.1	**0.8**	0.6
136.7	1.367	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
136.7	1.367	26.3	26.1	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.0	25.9	0.1	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.6	25.4	1.2	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.3	1.2	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.7	25.5	1.2	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.4	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.5	25.3	1.2	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.6	25.5	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.6	25.5	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	107.4	1.074	26.7	25.6	1.1	**0.7**	0.6
127.0	1.270	26.0	25.9	0.1	107.4	1.074	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	26.0	0.1	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
131.8	1.318	26.1	26.0	0.1	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	102.5	1.025	26.6	25.6	1.0	**0.7**	0.6
131.8	1.318	26.1	25.9	0.2	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	25.9	0.2	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	26.0	0.1	102.5	1.025	26.6	25.4	1.2	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	102.5	1.025	26.6	25.4	1.2	**0.7**	0.6
127.0	1.270	26.1	25.7	0.4	102.5	1.025	26.6	25.4	1.2	**0.7**	0.6
127.0	1.270	26.0	26.0	0.0	102.5	1.025	26.6	25.4	1.2	**0.7**	0.6
127.0	1.270	26.2	25.9	0.4	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.2	26.0	0.2	102.5	1.025	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	25.9	0.2	102.5	1.025	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	102.5	1.025	26.6	25.6	1.0	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	102.5	1.025	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	102.5	1.025	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	97.7	0.977	26.6	25.6	1.0	**0.7**	0.6
127.0	1.270	26.1	25.9	0.2	97.7	0.977	26.5	25.4	1.1	**0.7**	0.6
127.0	1.270	26.1	25.9	0.2	97.7	0.977	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.7	25.6	1.1	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	97.7	0.977	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	25.7	0.4	97.7	0.977	26.7	25.6	1.1	**0.7**	0.6
127.0	1.270	26.1	25.9	0.2	97.7	0.977	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	97.7	0.977	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	97.7	0.977	26.6	25.4	1.2	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.0	25.8	0.1	97.7	0.977	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.6	0.4	97.7	0.977	26.8	25.8	1.1	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.7	25.6	1.1	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.7	25.5	1.2	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.7	25.8	1.0	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.7	25.6	1.1	**0.7**	0.6
127.0	1.270	26.0	25.7	0.2	97.7	0.977	26.6	25.5	1.1	**0.7**	0.6
127.0	1.270	26.1	25.8	0.4	97.7	0.977	26.6	24.8	1.8	**0.7**	0.6
122.1	1.221	26.0	25.8	0.2	97.7	0.977	26.2	24.8	1.4	**0.7**	0.5
122.1	1.221	26.0	25.6	0.4	97.7	0.977	26.2	24.9	1.3	**0.7**	0.5
122.1	1.221	26.0	25.7	0.2	97.7	0.977	26.1	25.0	1.1	**0.7**	0.5
122.1	1.221	25.8	25.7	0.1	97.7	0.977	26.2	25.1	1.1	**0.7**	0.5

Table A.2-8 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2 (1 row caulking) when bin was empty and carbon dioxide purging time was 60 min.

Sample No.	E21-60					E22-60					E23-60					E24-60						
	Replicate No.																				Pg	
Time (min)	Pg (mmH2O)	Pg (kPa)	Tin (*C)	Tout (*C)	Tin-Tout (*C)	Pg (mmH2O)	Pg (kPa)	Tin (*C)	Tout (*C)	Tin-Tout (*C)	Pg (mmH2O)	Pg (kPa)	Tin (*C)	Tout (*C)	Tin-Tout (*C)	Pg (mmH2O)	Pg (kPa)	Tin (*C)	Tout (*C)	Tin-Tout (*C)	Mean	SD
0	253.9	2.539	20.3	18.9	1.3	253.9	2.539	23.0	21.5	1.4	253.9	2.539	21.9	21.1	0.8	253.9	2.539	26.6	25.6	1.0	2.5	0.0
1	234.4	2.344	20.3	18.7	1.6	205.1	2.051	22.7	21.6	1.1	234.4	2.344	21.3	20.9	0.4	234.4	2.344	26.6	25.7	1.0	2.3	0.1
2	224.6	2.246	20.1	18.3	1.7	175.8	1.758	22.5	21.5	1.0	229.5	2.295	21.1	21.1	0.0	229.5	2.295	26.4	25.7	0.7	2.1	0.3
3	219.7	2.197	20.4	18.8	1.6	151.4	1.514	22.4	21.5	0.8	224.6	2.246	21.0	20.9	0.1	224.6	2.246	26.4	25.6	0.8	2.1	0.4
4	214.8	2.148	20.1	18.6	1.5	131.8	1.318	22.3	21.7	0.6	224.6	2.246	21.0	20.9	0.1	224.6	2.246	26.3	25.4	0.8	2.0	0.4
5	210.0	2.100	20.4	18.9	1.5	112.3	1.123	22.5	21.7	0.7	224.6	2.246	21.0	20.9	0.1	224.6	2.246	26.2	25.6	0.6	1.9	0.5
6	205.1	2.051	20.4	18.8	1.6	97.7	0.977	22.5	21.7	0.7	219.7	2.197	21.0	21.0	0.0	224.6	2.246	26.2	25.7	0.5	1.9	0.6
7	200.2	2.002	20.4	18.9	1.5	87.9	0.879	22.3	21.6	0.7	219.7	2.197	21.0	21.0	0.0	219.7	2.197	26.2	25.6	0.6	1.8	0.6
8	195.3	1.953	20.4	19.0	1.5	73.2	0.732	22.3	21.6	0.7	219.7	2.197	20.9	21.0	-0.1	219.7	2.197	26.2	25.6	0.6	1.8	0.7
9	195.3	1.953	20.3	18.8	1.5	63.5	0.635	22.2	21.6	0.6	219.7	2.197	20.9	20.9	0.0	219.7	2.197	26.1	25.5	0.6	1.7	0.7
10	190.4	1.904	20.4	19.0	1.5	53.7	0.537	22.2	21.5	0.7	219.7	2.197	21.1	21.1	0.0	219.7	2.197	26.1	25.5	0.6	1.7	0.8
11	185.5	1.855	20.4	19.0	1.5						219.7	2.197	21.0	21.0	0.0	219.7	2.197	26.0	25.5	0.5	1.6	1.1
12	185.5	1.855	20.4	18.8	1.6						219.7	2.197	21.0	21.0	0.0	219.7	2.197	26.1	25.5	0.6	1.6	1.1
13	180.7	1.807	20.4	19.0	1.5						219.7	2.197	21.0	21.0	0.0	214.8	2.148	26.1	25.5	0.6	1.5	1.0
14	175.8	1.758	20.4	19.0	1.5						214.8	2.148	21.0	21.0	0.0	214.8	2.148	26.0	25.4	0.6	1.5	1.0
15	175.8	1.758	20.6	19.0	1.6						214.8	2.148	21.0	21.0	0.0	214.8	2.148	26.2	25.6	0.6	1.5	1.0
16	170.9	1.709	20.3	18.7	1.6						214.8	2.148	21.0	21.0	0.0	214.8	2.148	26.2	25.6	0.6	1.5	1.0
17	166.0	1.660	20.3	18.9	1.3						214.8	2.148	21.0	21.0	0.0	214.8	2.148	26.2	25.6	0.6	1.5	1.0
18	161.1	1.611	20.4	19.0	1.5						214.8	2.148	20.9	20.9	0.0	214.8	2.148	26.2	25.6	0.6	1.5	1.0
19	156.3	1.563	20.3	18.8	1.5						214.8	2.148	21.1	21.2	-0.1	214.8	2.148	26.2	25.5	0.7	1.5	1.0
20	151.4	1.514	20.3	18.7	1.6						214.8	2.148	21.2	21.1	0.1	214.8	2.148	26.2	25.5	0.7	1.5	1.0
21	151.4	1.514	20.4	19.0	1.5						214.8	2.148	21.1	21.1	0.0	214.8	2.148	26.1	25.5	0.6	1.5	1.0
22	151.4	1.514	20.4	18.9	1.6						214.8	2.148	21.1	21.1	0.0	214.8	2.148	26.1	25.3	0.7	1.5	1.0
23	146.5	1.465	20.4	19.0	1.5						214.8	2.148	21.1	20.9	0.1	210.0	2.100	25.9	25.5	0.5	1.4	1.0
24	141.6	1.416	20.4	18.8	1.6						210.0	2.100	20.9	20.9	0.0	210.0	2.100	25.9	25.5	0.5	1.4	1.0
25	136.7	1.367	20.4	18.9	1.6						210.0	2.100	21.1	21.1	0.0	210.0	2.100	25.9	25.5	0.5	1.4	1.0
26	136.7	1.367	20.4	18.9	1.5						210.0	2.100	20.9	20.9	0.0	210.0	2.100	25.9	25.5	0.5	1.4	1.0
27	136.7	1.367	20.4	18.9	1.5						210.0	2.100	21.1	21.1	0.0	210.0	2.100	25.9	25.3	0.6	1.4	1.0
28	131.8	1.318	20.4	18.8	1.6						210.0	2.100	21.1	21.0	0.1	205.1	2.051	26.3	25.6	0.7	1.4	1.0
29	127.0	1.270	20.4	18.8	1.6						210.0	2.100	21.1	21.1	0.0	210.0	2.100	26.0	25.5	0.5	1.4	1.0
30	127.0	1.270	20.4	18.9	1.5						210.0	2.100	21.1	21.1	0.0	210.0	2.100	26.1	25.4	0.7	1.4	1.0
31	122.1	1.221	20.6	19.1	1.5						210.0	2.100	21.1	21.0	0.1	205.1	2.051	26.0	25.4	0.6	1.3	1.0
32	117.2	1.172	20.4	19.0	1.5						210.0	2.100	21.1	21.0	0.1	205.1	2.051	26.0	25.4	0.6	1.3	1.0
33	117.2	1.172	20.3	18.8	1.5						205.1	2.051	21.3	21.2	0.1	205.1	2.051	26.2	25.6	0.6	1.3	1.0
34	117.2	1.172	20.6	19.1	1.5						205.1	2.051	21.2	21.2	0.0	205.1	2.051	26.2	25.5	0.7	1.3	1.0
35	112.3	1.123	20.3	18.8	1.5						205.1	2.051	21.2	21.2	0.0	205.1	2.051	26.2	25.6	0.6	1.3	1.0
36	107.4	1.074	20.4	18.7	1.7						205.1	2.051	21.2	21.2	0.0	205.1	2.051	26.2	25.6	0.6	1.3	1.0
37	107.4	1.074	20.4	18.9	1.6						205.1	2.051	21.3	21.2	0.1	205.1	2.051	26.2	25.6	0.6	1.3	1.0
38	102.5	1.025	20.4	18.8	1.6						205.1	2.051	21.3	21.2	0.1	205.1	2.051	26.2	25.5	0.7	1.3	1.0
39	97.7	0.977	20.4	18.8	1.6						200.2	2.002	21.3	21.2	0.1	200.2	2.002	26.1	25.6	0.5	1.2	1.0
40	97.7	0.977	20.4	18.9	1.6						200.2	2.002	21.2	21.0	0.1	200.2	2.002	26.1	25.6	0.5	1.2	1.0
41	92.8	0.928	20.4	18.7	1.7						200.2	2.002	21.2	21.2	0.0	200.2	2.002	26.1	25.5	0.6	1.2	1.0
42	87.9	0.879	20.6	19.0	1.6						200.2	2.002	21.3	21.2	0.1	200.2	2.002	26.1	25.5	0.6	1.2	1.0
43	87.9	0.879	20.6	19.0	1.6						214.8	2.148	20.3	13.8	6.5	200.2	2.002	26.1	25.5	0.6	1.3	1.0
44	87.9	0.879	20.4	18.9	1.6						224.6	2.246	20.4	16.8	3.5	200.2	2.002	26.1	25.5	0.6	1.3	1.0
45	83.0	0.830	20.4	19.0	1.5						219.7	2.197	20.3	17.3	2.9	200.2	2.002	26.1	25.5	0.6	1.3	1.0

Table A.2-8 continued...

46	83.0	0.830	20.5	18.9	1.6
47	78.1	0.781	20.6	19.0	1.6
48	78.1	0.781	20.6	19.0	1.6
49	73.2	0.732	20.6	19.1	1.5
50	73.2	0.732	20.4	18.9	1.6
51	73.2	0.732	20.6	19.0	1.6
52	68.4	0.684	20.4	19.0	1.5
53	68.4	0.684	20.3	18.7	1.6
54	68.4	0.684	20.4	19.0	1.5
55	63.5	0.635	20.4	19.0	1.5
56	63.5	0.635	20.4	19.0	1.5
57	58.6	0.586	20.4	19.0	1.5
58	58.6	0.586	20.6	19.1	1.5
59	58.6	0.586	20.3	18.8	1.5
60	58.6	0.586	20.3	18.8	1.5
61	53.7	0.537	20.4	18.8	1.6
62	53.7	0.537	20.4	19.0	1.5
63	53.7	0.537	20.6	19.1	1.5
64	48.8	0.488	20.4	19.0	1.5
65	48.8	0.488	20.4	18.7	1.7
66	48.8	0.488	20.3	18.7	1.6
67	43.9	0.439	20.3	18.8	1.5
68	43.9	0.439	20.4	18.8	1.6
69	43.9	0.439	20.4	18.9	1.6
70	39.1	0.391	20.4	18.9	1.6
71	39.1	0.391	20.4	18.9	1.6
72	39.1	0.391	20.4	18.9	1.6
73	34.2	0.342	20.6	19.1	1.5
74	34.2	0.342	20.3	18.9	1.5
75	34.2	0.342	20.4	18.9	1.6
76	34.2	0.342	20.4	19.0	1.5
77	34.2	0.342	20.4	19.0	1.5
78	34.2	0.342	20.4	18.9	1.6
79	29.3	0.293	20.3	18.9	1.5
80	29.3	0.293	20.4	18.9	1.6
81	29.3	0.293	20.1	18.8	1.3
82	29.3	0.293	20.4	19.0	1.5
83	29.3	0.293	20.4	19.0	1.5
84	29.3	0.293	20.6	19.0	1.6
85	24.4	0.244	20.5	19.1	1.3
86	24.4	0.244	20.3	18.9	1.3
87	24.4	0.244	20.4	19.2	1.2
88	24.4	0.244	20.4	19.0	1.5
89	24.4	0.244	20.3	18.7	1.6
90	24.4	0.244	20.4	19.0	1.5
91	24.4	0.244	20.4	19.1	1.3
92	19.5	0.195	20.4	19.0	1.5
93	19.5	0.195	20.3	18.8	1.5
94	19.5	0.195	20.3	18.9	1.3
95	19.5	0.195	20.3	18.8	1.5
96	19.5	0.195	20.4	19.0	1.5
97	19.5	0.195	20.4	19.0	1.5
98	14.6	0.146	20.4	19.0	1.5
99	14.6	0.146	20.4	19.0	1.5

214.8	2.148	20.3	18.7	1.6	200.2	2.002	26.1	25.5	0.6	**1.2**	1.0
214.8	2.148	20.3	19.2	1.1	200.2	2.002	26.1	25.5	0.6	**1.2**	1.0
214.8	2.148	20.5	19.8	0.7	200.2	2.002	26.1	25.3	0.7	**1.2**	1.0
210.0	2.100	20.5	19.9	0.6	195.3	1.953	26.2	25.6	0.6	**1.2**	1.0
210.0	2.100	20.5	20.3	0.2	195.3	1.953	26.2	25.6	0.6	**1.2**	1.0
210.0	2.100	20.5	20.4	0.1	195.3	1.953	26.1	25.6	0.5	**1.2**	1.0
205.1	2.051	20.7	20.6	0.1	195.3	1.953	26.1	25.6	0.5	**1.2**	1.0
205.1	2.051	20.6	20.6	0.0	195.3	1.953	26.3	25.8	0.5	**1.2**	1.0
205.1	2.051	20.6	20.7	-0.1	195.3	1.953	26.3	25.7	0.6	**1.2**	1.0
205.1	2.051	20.8	20.9	-0.1	195.3	1.953	26.1	25.5	0.6	**1.2**	1.0
200.2	2.002	20.8	20.9	-0.1	190.4	1.904	26.1	25.6	0.5	**1.1**	1.0
200.2	2.002	20.8	20.9	-0.1	190.4	1.904	26.1	25.5	0.6	**1.1**	1.0
200.2	2.002	20.9	21.0	-0.1	185.5	1.855	26.1	25.5	0.6	**1.1**	1.0
200.2	2.002	20.9	21.0	-0.1	185.5	1.855	26.1	25.5	0.6	**1.1**	1.0
195.3	1.953	20.8	21.0	-0.2	185.5	1.855	25.9	25.5	0.5	**1.1**	1.0
195.3	1.953	20.8	21.0	-0.2	185.5	1.855	26.1	25.6	0.5	**1.1**	1.0
190.4	1.904	21.0	21.3	-0.4	185.5	1.855	26.1	25.5	0.6	**1.1**	1.0
190.4	1.904	21.0	21.2	-0.2	185.5	1.855	26.3	25.7	0.6	**1.1**	1.0
190.4	1.904	21.0	21.2	-0.2	185.5	1.855	26.1	25.5	0.6	**1.1**	1.0
190.4	1.904	21.0	21.1	-0.1	185.5	1.855	26.1	25.5	0.6	**1.1**	1.0
190.4	1.904	21.1	21.3	-0.1	185.5	1.855	26.1	25.6	0.5	**1.1**	1.0
190.4	1.904	21.1	21.1	0.0	185.5	1.855	26.3	25.7	0.6	**1.0**	1.0
190.4	1.904	21.1	21.3	-0.1	180.7	1.807	26.1	25.5	0.6	**1.0**	1.0
185.5	1.855	21.1	21.3	-0.1	180.7	1.807	26.1	25.6	0.5	**1.0**	0.9
185.5	1.855	21.1	21.3	-0.1	180.7	1.807	26.1	25.6	0.5	**1.0**	1.0
185.5	1.855	21.1	21.3	-0.1	180.7	1.807	26.2	25.5	0.7	**1.0**	1.0
185.5	1.855	21.1	21.3	-0.1	180.7	1.807	26.1	25.6	0.5	**1.0**	1.0
185.5	1.855	21.1	21.1	0.0	180.7	1.807	26.2	25.5	0.7	**1.0**	1.0
185.5	1.855	21.1	21.1	0.0	180.7	1.807	26.3	25.7	0.6	**1.0**	1.0
185.5	1.855	21.1	21.1	0.0	180.7	1.807	26.3	25.7	0.6	**1.0**	1.0
210.0	2.100	19.7	10.2	9.4	180.7	1.807	26.1	25.5	0.6	**1.1**	1.0
219.7	2.197	19.5	13.9	5.5	180.7	1.807	26.2	25.5	0.7	**1.1**	1.1
214.8	2.148	19.5	16.2	3.3	180.7	1.807	26.1	25.5	0.6	**1.1**	1.1
210.0	2.100	19.6	17.6	2.0	175.8	1.758	26.1	25.5	0.6	**1.0**	1.0
205.1	2.051	19.9	18.6	1.3	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
200.2	2.002	20.1	19.2	0.9	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
200.2	2.002	20.0	19.6	0.4	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
200.2	2.002	20.1	19.9	0.2	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
195.3	1.953	20.3	20.3	0.0	175.8	1.758	26.2	25.6	0.6	**1.0**	1.0
195.3	1.953	20.3	20.5	-0.1	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
195.3	1.953	20.3	20.6	-0.2	175.8	1.758	26.2	25.6	0.6	**1.0**	1.0
190.4	1.904	20.5	20.8	-0.2	175.8	1.758	26.2	25.7	0.5	**1.0**	1.0
190.4	1.904	20.4	20.8	-0.4	175.8	1.758	26.2	25.6	0.6	**1.0**	1.0
190.4	1.904	20.6	20.9	-0.4	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
185.5	1.855	20.5	20.8	-0.2	175.8	1.758	26.3	25.7	0.6	**1.0**	1.0
185.5	1.855	20.7	20.9	-0.2	175.8	1.758	26.3	25.6	0.7	**1.0**	1.0
185.5	1.855	20.6	21.0	-0.5	175.8	1.758	26.2	25.6	0.6	**1.0**	1.0
185.5	1.855	20.7	20.9	-0.2	175.8	1.758	26.2	25.6	0.6	**1.0**	1.0
185.5	1.855	20.6	21.0	-0.5	170.9	1.709	26.2	25.6	0.6	**0.9**	1.0
185.5	1.855	20.7	21.1	-0.4	170.9	1.709	26.2	25.6	0.6	**0.9**	1.0
185.5	1.855	20.7	21.1	-0.4	170.9	1.709	26.2	25.6	0.6	**0.9**	1.0
180.7	1.807	20.9	21.3	-0.4	170.9	1.709	26.2	25.7	0.5	**0.9**	1.0
180.7	1.807	20.9	21.1	-0.2	170.9	1.709	26.3	25.7	0.6	**0.9**	1.0
180.7	1.807	20.9	21.1	-0.2	170.9	1.709	26.3	25.6	0.7	**0.9**	1.0

Table A.2-8 continued...

100	14.6	0.146	20.4	18.9	1.6
101	14.6	0.146	20.4	19.0	1.5
102	14.6	0.146	20.3	18.8	1.5
103	14.6	0.146	20.4	19.0	1.5
104	9.8	0.098	20.4	19.0	1.5
105	9.8	0.098	20.4	19.0	1.5
106	9.8	0.098	20.4	19.0	1.5
107	9.8	0.098	20.4	19.0	1.5
108	9.8	0.098	20.4	18.9	1.5
109	9.8	0.098	20.1	18.6	1.5
110	9.8	0.098	20.4	18.9	1.5
111	9.8	0.098	20.4	19.0	1.3
112	9.8	0.098	20.4	19.0	1.3
113	9.8	0.098	20.3	18.9	1.3
114	9.8	0.098	20.6	19.0	1.6
115	9.8	0.098	20.4	18.9	1.5
116	9.8	0.098	20.3	18.9	1.3
117	9.8	0.098	20.3	18.8	1.5
118	9.8	0.098	20.4	18.8	1.6
119	9.8	0.098	20.3	18.9	1.3
120	9.8	0.098	20.6	19.0	1.6
121	4.9	0.049	20.3	18.7	1.6
122	4.9	0.049	20.3	18.7	1.6
123	4.9	0.049	20.4	19.1	1.3
124	4.9	0.049	20.3	18.8	1.5
125	4.9	0.049	20.3	18.8	1.5
126	4.9	0.049	20.4	19.0	1.5
127	4.9	0.049	20.3	18.8	1.5
128	4.9	0.049	20.4	18.9	1.6
129	4.9	0.049	20.3	18.8	1.5
130					
131					
132					
133					
134					
135					
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137					
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150					
151					
152					
153					

180.7	1.807	20.9	21.3	-0.4	170.9	1.709	26.2	25.7	0.5	**0.9**	1.0
180.7	1.807	20.9	21.1	-0.2	170.9	1.709	26.2	25.7	0.5	**0.9**	1.0
180.7	1.807	20.9	21.3	-0.4	166.0	1.660	26.2	25.6	0.6	**0.9**	1.0
180.7	1.807	20.9	21.1	-0.2	166.0	1.660	26.2	25.7	0.5	**0.9**	1.0
175.8	1.758	20.9	21.1	-0.2	166.0	1.660	26.2	25.6	0.6	**0.9**	1.0
175.8	1.758	20.9	21.1	-0.2	166.0	1.660	26.3	25.6	0.7	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.2	25.7	0.5	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.2	25.7	0.5	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.3	25.7	0.6	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.2	25.7	0.5	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.3	25.7	0.6	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.2	25.6	0.6	**0.9**	1.0
175.8	1.758	21.1	21.3	-0.2	166.0	1.660	26.2	25.6	0.6	**0.9**	1.0
170.9	1.709	21.2	21.5	-0.2	166.0	1.660	26.2	25.6	0.6	**0.9**	0.9
170.9	1.709	21.4	21.5	-0.1	166.0	1.660	26.2	25.6	0.6	**0.9**	0.9
170.9	1.709	21.2	21.5	-0.2	161.1	1.611	26.3	25.6	0.7	**0.9**	0.9
170.9	1.709	21.2	21.5	-0.2	161.1	1.611	26.3	25.6	0.7	**0.9**	0.9
170.9	1.709	21.2	21.5	-0.2	161.1	1.611	26.2	25.7	0.5	**0.9**	0.9
170.9	1.709	21.2	21.5	-0.2	161.1	1.611	26.4	25.9	0.5	**0.9**	0.9
170.9	1.709	21.2	21.5	-0.2	161.1	1.611	26.4	25.8	0.6	**0.9**	0.9
166.0	1.660	21.4	21.4	0.0	161.1	1.611	26.2	25.6	0.6	**0.8**	0.9
166.0	1.660	21.2	21.4	-0.1	161.1	1.611	26.4	25.8	0.6	**0.8**	0.9
166.0	1.660	21.4	21.5	-0.1	161.1	1.611	26.4	25.8	0.6	**0.8**	0.9
161.1	1.611	21.4	21.5	-0.1	161.1	1.611	26.2	25.6	0.6	**0.8**	0.9
166.0	1.660	21.4	21.4	0.0	161.1	1.611	26.2	25.6	0.6	**0.8**	0.9
166.0	1.660	21.4	21.6	-0.2	161.1	1.611	26.2	25.6	0.6	**0.8**	0.9
166.0	1.660	21.4	21.4	0.0	161.1	1.611	26.2	25.7	0.5	**0.8**	0.9
161.1	1.611	21.5	21.6	-0.1	161.1	1.611	26.2	25.6	0.6	**0.8**	0.9
161.1	1.611	21.4	21.6	-0.2	161.1	1.611	26.4	25.8	0.6	**0.8**	0.9
161.1	1.611	21.7	21.7	0.0	156.3	1.563	26.4	25.7	0.7	**0.8**	0.9
161.1	1.611	21.5	21.5	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
161.1	1.611	21.5	21.5	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
161.1	1.611	21.7	21.7	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
161.1	1.611	21.5	21.6	-0.1	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
161.1	1.611	21.5	21.5	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
161.1	1.611	21.7	21.7	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.4	25.7	0.7	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.4	25.8	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	156.3	1.563	26.2	25.6	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
156.3	1.563	21.7	21.7	0.0	151.4	1.514	26.2	25.6	0.6	**0.8**	0.9
151.4	1.514	21.7	21.7	0.0	151.4	1.514	26.2	25.6	0.6	**0.8**	0.9
151.4	1.514	21.9	21.9	0.0	151.4	1.514	26.2	25.6	0.6	**0.8**	0.9
151.4	1.514	21.7	21.6	0.1	151.4	1.514	26.2	25.7	0.5	**0.8**	0.9
151.4	1.514	21.7	21.7	0.0	151.4	1.514	26.3	25.6	0.7	**0.8**	0.9
151.4	1.514	21.9	21.9	0.0	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
151.4	1.514	21.9	21.9	0.0	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
151.4	1.514	21.9	21.9	0.0	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9

Table A.2-8 continued...

154	151.4	1.514	21.9	21.7	0.1	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
155	151.4	1.514	21.9	21.7	0.1	151.4	1.514	26.4	25.8	0.6	**0.8**	0.9
156	151.4	1.514	21.9	21.9	0.0	146.5	1.465	26.4	25.8	0.6	**0.7**	0.9
157	151.4	1.514	21.9	21.9	0.0	146.5	1.465	26.4	25.9	0.5	**0.7**	0.9
158	151.4	1.514	21.9	21.9	0.0	146.5	1.465	26.4	25.9	0.5	**0.7**	0.9
159	151.4	1.514	22.0	21.9	0.1	146.5	1.465	26.4	25.8	0.6	**0.7**	0.9
160	151.4	1.514	21.9	21.9	0.0	146.5	1.465	26.4	25.8	0.6	**0.7**	0.9
161	151.4	1.514	22.0	22.0	0.0	146.5	1.465	26.4	25.8	0.6	**0.7**	0.9
162	151.4	1.514	22.0	21.9	0.1	146.5	1.465	26.3	25.7	0.6	**0.7**	0.9
163	146.5	1.465	22.0	22.0	0.0	146.5	1.465	26.4	25.8	0.6	**0.7**	0.8
164	146.5	1.465	22.0	21.9	0.1	146.5	1.465	26.4	25.8	0.6	**0.7**	0.8
165	146.5	1.465	22.0	21.9	0.1	146.5	1.465	26.4	25.8	0.6	**0.7**	0.8
166	146.5	1.465	22.0	21.9	0.1	146.5	1.465	26.4	25.8	0.6	**0.7**	0.8
167	146.5	1.465	22.0	21.9	0.1	146.5	1.465	26.4	25.9	0.5	**0.7**	0.8
168	146.5	1.465	21.9	21.7	0.1	146.5	1.465	26.4	25.8	0.6	**0.7**	0.8
169	146.5	1.465	22.0	21.9	0.1	146.5	1.465	26.3	25.7	0.6	**0.7**	0.8
170	146.5	1.465	22.0	21.9	0.1	141.6	1.416	26.2	25.7	0.5	**0.7**	0.8
171	146.5	1.465	22.0	21.9	0.1	141.6	1.416	26.3	25.7	0.6	**0.7**	0.8
172	146.5	1.465	22.0	21.9	0.1	141.6	1.416	26.3	25.6	0.7	**0.7**	0.8
173	146.5	1.465	22.0	22.0	0.0	141.6	1.416	26.3	25.8	0.5	**0.7**	0.8
174	146.5	1.465	22.0	22.0	0.0	141.6	1.416	26.5	25.9	0.6	**0.7**	0.8
175	146.5	1.465	22.0	21.9	0.1	141.6	1.416	26.4	25.9	0.5	**0.7**	0.8
176	146.5	1.465	22.0	21.9	0.1	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
177	141.6	1.416	22.0	22.0	0.0	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
178	141.6	1.416	22.0	21.9	0.1	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
179	136.7	1.367	22.0	22.0	0.0	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
180	136.7	1.367	22.0	21.9	0.1	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
181	136.7	1.367	22.0	21.9	0.1	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
182	136.7	1.367	22.0	21.9	0.1	141.6	1.416	26.2	25.6	0.6	**0.7**	0.8
183	136.7	1.367	22.4	22.2	0.1	141.6	1.416	26.4	25.8	0.6	**0.7**	0.8
184	136.7	1.367	22.2	22.1	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
185	136.7	1.367	22.2	22.1	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
186	136.7	1.367	22.2	22.1	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
187	136.7	1.367	22.1	22.0	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
188	136.7	1.367	22.1	22.0	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
189	136.7	1.367	22.1	22.0	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
190	136.7	1.367	22.2	22.0	0.2	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
191	136.7	1.367	22.2	22.1	0.1	136.7	1.367	26.6	25.8	0.7	**0.7**	0.8
192	136.7	1.367	22.2	22.1	0.1	136.7	1.367	26.4	25.8	0.6	**0.7**	0.8
193	136.7	1.367	22.4	22.2	0.1	131.8	1.318	26.4	25.9	0.5	**0.7**	0.8
194	136.7	1.367	22.2	22.1	0.1	131.8	1.318	26.2	25.6	0.6	**0.7**	0.8
195	136.7	1.367	22.2	22.1	0.1	127.0	1.270	26.3	25.8	0.5	**0.7**	0.8
196	136.7	1.367	22.4	22.2	0.1	127.0	1.270	26.3	25.7	0.6	**0.7**	0.8
197	136.7	1.367	22.4	22.2	0.1	127.0	1.270	26.5	25.9	0.6	**0.7**	0.8
198	136.7	1.367	22.4	22.2	0.1	127.0	1.270	26.3	25.8	0.5	**0.7**	0.8
199	136.7	1.367	22.4	22.2	0.1	127.0	1.270	26.5	25.9	0.6	**0.7**	0.8
200	131.8	1.318	22.4	22.4	0.0	127.0	1.270	26.4	25.8	0.6	**0.6**	0.7
201	131.8	1.318	22.4	22.2	0.1	127.0	1.270	26.4	25.8	0.6	**0.6**	0.7
202	131.8	1.318	22.4	22.2	0.1	127.0	1.270	26.4	25.8	0.6	**0.6**	0.7
203	131.8	1.318	22.4	22.4	0.0	127.0	1.270	26.4	25.8	0.6	**0.6**	0.7
204	131.8	1.318	22.4	22.4	0.0	127.0	1.270	26.5	25.9	0.6	**0.6**	0.7
205	131.8	1.318	22.4	22.4	0.0	127.0	1.270	26.5	25.9	0.6	**0.6**	0.7
206	131.8	1.318	22.4	22.2	0.1	127.0	1.270	26.4	25.9	0.5	**0.6**	0.7
207	131.8	1.318	22.4	22.2	0.1	127.0	1.270	26.5	25.9	0.6	**0.6**	0.7

Table A.2-9 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 2' (1 row caulking with additional protective coating) when bin was empty and carbon dioxide purging time was 60 min.

Sample No.	E21-pc					E22-pc					E23-pc					E24-pc						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(min)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	20.4	19.3	1.1	258.8	2.588	21.2	20.0	1.2	253.9	2.539	24.4	23.4	1.0	258.8	2.588	28.0	27.2	0.8	2.6	0.0
1	239.3	2.393	20.3	19.5	0.9	234.4	2.344	20.9	20.0	0.8	229.5	2.295	24.0	23.3	0.7	244.1	2.441	27.9	27.0	0.8	2.4	0.1
2	229.5	2.295	20.1	19.3	0.7	224.6	2.246	20.6	20.0	0.6	224.6	2.246	23.6	23.3	0.4	234.4	2.344	27.6	27.0	0.6	2.3	0.0
3	224.6	2.246	20.0	19.3	0.6	224.6	2.246	20.3	20.0	0.2	219.7	2.197	23.5	23.2	0.4	229.5	2.295	27.5	27.0	0.5	2.2	0.0
4	219.7	2.197	19.7	19.2	0.5	214.8	2.148	20.3	20.0	0.2	219.7	2.197	23.6	23.3	0.2	229.5	2.295	27.6	27.1	0.5	2.2	0.1
5	214.8	2.148	19.9	19.4	0.5	210.0	2.100	20.3	20.0	0.2	219.7	2.197	23.6	23.2	0.4	229.5	2.295	27.6	27.2	0.4	2.2	0.1
6	210.0	2.100	19.8	19.3	0.5	205.1	2.051	20.4	20.0	0.4	219.7	2.197	23.4	23.2	0.2	224.6	2.246	27.5	27.1	0.4	2.1	0.1
7	205.1	2.051	19.6	19.3	0.4	200.2	2.002	20.2	20.0	0.1	219.7	2.197	23.4	23.2	0.2	224.6	2.246	27.5	27.2	0.2	2.1	0.1
8	200.2	2.002	19.8	19.4	0.4	195.3	1.953	20.4	20.0	0.4	214.8	2.148	23.4	23.2	0.2	224.6	2.246	27.3	27.1	0.2	2.1	0.1
9	200.2	2.002	19.7	19.3	0.4	195.3	1.953	20.4	20.0	0.4	214.8	2.148	23.4	23.1	0.4	224.6	2.246	27.3	27.0	0.4	2.1	0.1
10	195.3	1.953	19.7	19.3	0.4	190.4	1.904	20.6	20.1	0.5	214.8	2.148	23.3	23.1	0.2	219.7	2.197	27.5	27.2	0.4	2.1	0.1
11	190.4	1.904	19.7	19.3	0.4	185.5	1.855	20.6	20.2	0.4	214.8	2.148	23.3	23.1	0.2	219.7	2.197	27.4	27.0	0.4	2.0	0.2
12	190.4	1.904	19.6	19.2	0.4	180.7	1.807	20.4	20.1	0.4	214.8	2.148	23.5	23.3	0.2	219.7	2.197	27.4	27.0	0.4	2.0	0.2
13	185.5	1.855	19.6	19.3	0.2	180.7	1.807	20.4	20.1	0.4	214.8	2.148	23.5	23.1	0.4	219.7	2.197	27.4	27.0	0.4	2.0	0.2
14	180.7	1.807	19.7	19.2	0.5	175.8	1.758	20.6	20.1	0.5	214.8	2.148	23.5	23.3	0.2	219.7	2.197	27.4	27.0	0.4	2.0	0.2
15	175.8	1.758	19.6	19.2	0.4	170.9	1.709	20.4	20.1	0.4	214.8	2.148	23.5	23.3	0.2	219.7	2.197	27.4	27.2	0.2	2.0	0.3
16	170.9	1.709	19.8	19.5	0.2	170.9	1.709	20.4	20.1	0.4	214.8	2.148	23.5	23.3	0.2	219.7	2.197	27.4	27.1	0.4	1.9	0.3
17	170.9	1.709	19.8	19.4	0.4	166.0	1.660	20.3	20.1	0.2	214.8	2.148	23.5	23.3	0.2	219.7	2.197	27.4	27.1	0.4	1.9	0.3
18	166.0	1.660	19.7	19.4	0.2	161.1	1.611	20.4	20.1	0.4	214.8	2.148	23.5	23.2	0.4	214.8	2.148	27.3	27.1	0.2	1.9	0.3
19	161.1	1.611	19.7	19.4	0.2	161.1	1.611	20.4	20.1	0.4	214.8	2.148	23.4	23.2	0.2	214.8	2.148	27.3	27.0	0.4	1.9	0.3
20	151.4	1.514	19.7	19.3	0.4	156.3	1.563	20.4	20.2	0.2	214.8	2.148	23.5	23.2	0.4	214.8	2.148	27.3	26.8	0.5	1.8	0.4
21	151.4	1.514	19.5	19.3	0.2	151.4	1.514	20.4	20.2	0.2	210.0	2.100	23.4	23.2	0.2	210.0	2.100	27.4	27.0	0.4	1.8	0.3
22	151.4	1.514	19.8	19.5	0.4	151.4	1.514	20.4	20.1	0.4	210.0	2.100	23.4	23.2	0.2	210.0	2.100	27.2	26.8	0.4	1.8	0.3
23	146.5	1.465	19.7	19.5	0.2	146.5	1.465	20.4	20.2	0.2	210.0	2.100	23.4	23.2	0.2	205.1	2.051	27.4	27.1	0.2	1.8	0.4
24	141.6	1.416	19.7	19.5	0.2	146.5	1.465	20.4	20.1	0.4	210.0	2.100	23.3	23.2	0.1	205.1	2.051	27.4	27.1	0.2	1.8	0.4
25	141.6	1.416	19.9	19.6	0.2	141.6	1.416	20.6	20.1	0.5	210.0	2.100	23.3	23.2	0.1	205.1	2.051	27.4	27.0	0.4	1.7	0.4
26	136.7	1.367	19.9	19.6	0.2	141.6	1.416	20.6	20.1	0.5	210.0	2.100	23.4	23.1	0.4	205.1	2.051	27.4	27.0	0.4	1.7	0.4
27	131.8	1.318	19.9	19.6	0.2	136.7	1.367	20.3	20.1	0.2	210.0	2.100	23.3	23.1	0.2	205.1	2.051	27.5	27.2	0.4	1.7	0.4
28	131.8	1.318	19.9	19.5	0.4	131.8	1.318	20.4	20.1	0.4	210.0	2.100	23.5	23.2	0.2	205.1	2.051	27.4	27.2	0.2	1.7	0.4
29	127.0	1.270	19.9	19.5	0.4	131.8	1.318	20.5	20.2	0.2	210.0	2.100	23.5	23.2	0.2	205.1	2.051	27.4	27.1	0.4	1.7	0.5
30	127.0	1.270	19.8	19.6	0.1	127.0	1.270	20.5	20.2	0.2	210.0	2.100	23.5	23.1	0.4	205.1	2.051	27.4	26.9	0.5	1.7	0.5
31	122.1	1.221	19.8	19.5	0.2	127.0	1.270	20.6	20.2	0.4	224.6	2.246	22.6	18.2	4.4	200.2	2.002	27.4	26.9	0.5	1.7	0.5
32	117.2	1.172	19.8	19.8	0.0	122.1	1.221	20.5	20.2	0.2	224.6	2.246	22.8	20.6	2.2	200.2	2.002	27.4	27.1	0.4	1.7	0.5
33	117.2	1.172	19.9	19.8	0.1	122.1	1.221	20.6	20.2	0.4	219.7	2.197	23.0	21.2	1.8	200.2	2.002	27.4	27.1	0.4	1.6	0.5
34	112.3	1.123	19.8	19.6	0.1	117.2	1.172	20.5	20.2	0.2	219.7	2.197	22.8	21.8	1.1	200.2	2.002	27.4	27.1	0.4	1.6	0.6
35	112.3	1.123	20.1	19.7	0.4	117.2	1.172	20.7	20.2	0.5	214.8	2.148	22.8	21.9	1.0	200.2	2.002	27.4	26.9	0.5	1.6	0.5
36	107.4	1.074	19.9	19.8	0.1	117.2	1.172	20.5	20.2	0.2	214.8	2.148	22.8	22.1	0.7	200.2	2.002	27.3	26.9	0.4	1.6	0.6
37	107.4	1.074	20.0	19.9	0.1	112.3	1.123	20.6	20.1	0.5	214.8	2.148	22.9	22.5	0.4	200.2	2.002	27.3	26.9	0.4	1.6	0.6
38	102.5	1.025	20.1	20.0	0.1	107.4	1.074	20.8	20.4	0.4	214.8	2.148	22.9	22.8	0.1	200.2	2.002	27.3	26.9	0.4	1.6	0.6
39	102.5	1.025	20.1	20.0	0.1	107.4	1.074	20.8	20.3	0.5	214.8	2.148	22.7	22.5	0.2	200.2	2.002	27.3	26.8	0.5	1.6	0.6
40	97.7	0.977	20.0	19.9	0.1	102.5	1.025	20.7	20.4	0.2	214.8	2.148	22.9	22.7	0.2	200.2	2.002	27.3	26.9	0.4	1.5	0.6
41	97.7	0.977	20.1	19.9	0.2	102.5	1.025	20.5	20.4	0.1	214.8	2.148	22.9	22.8	0.1	200.2	2.002	27.5	27.0	0.5	1.5	0.6
42	92.8	0.928	20.1	19.6	0.5	97.7	0.977	20.8	20.4	0.4	214.8	2.148	22.9	22.8	0.1	195.3	1.953	27.3	26.9	0.4	1.5	0.6
43	92.8	0.928	20.1	19.6	0.5	97.7	0.977	20.8	20.4	0.4	210.0	2.100	23.1	23.1	0.0	195.3	1.953	27.4	27.1	0.2	1.5	0.6
44	87.9	0.879	20.1	19.9	0.2	97.7	0.977	20.7	20.4	0.2	210.0	2.100	23.1	22.9	0.1	195.3	1.953	27.5	27.1	0.4	1.5	0.6
45	87.9	0.879	20.1	19.9	0.2	92.8	0.928	20.8	20.4	0.4	210.0	2.100	22.9	22.9	0.0	195.3	1.953	27.4	27.1	0.2	1.5	0.7

Table A.2-9 continued...

46	83.0	0.830	20.1	19.9	0.2	92.8	0.928	20.7	20.4	0.2	210.0	2.100	22.9	21.3	1.6	195.3	1.953	27.4	27.0	0.4	**1.5**	0.7
47	83.0	0.830	20.0	19.9	0.1	87.9	0.879	20.7	20.3	0.4	224.6	2.246	22.6	19.2	3.4	195.3	1.953	27.4	27.0	0.4	**1.5**	0.7
48	78.1	0.781	20.3	20.0	0.2	87.9	0.879	20.7	20.4	0.2	219.7	2.197	22.6	21.5	1.1	195.3	1.953	27.4	27.0	0.4	**1.5**	0.7
49	78.1	0.781	20.2	19.9	0.2	83.0	0.830	20.7	20.4	0.2	219.7	2.197	22.6	21.8	0.8	195.3	1.953	27.5	27.2	0.4	**1.4**	0.7
50	73.2	0.732	20.2	20.0	0.1	83.0	0.830	20.7	20.4	0.2	214.8	2.148	22.7	22.2	0.5	195.3	1.953	27.4	27.0	0.4	**1.4**	0.7
51	73.2	0.732	20.3	20.2	0.1	83.0	0.830	20.8	20.4	0.4	214.8	2.148	22.7	22.3	0.4	195.3	1.953	27.5	27.2	0.4	**1.4**	0.7
52	68.4	0.684	20.2	20.0	0.1	78.1	0.781	20.5	20.4	0.1	210.0	2.100	22.7	22.4	0.2	195.3	1.953	27.5	27.2	0.4	**1.4**	0.8
53	68.4	0.684	20.3	20.0	0.2	78.1	0.781	20.7	20.4	0.2	210.0	2.100	22.8	22.8	0.0	195.3	1.953	27.5	27.0	0.5	**1.4**	0.8
54	63.5	0.635	20.2	19.9	0.2	73.2	0.732	20.7	20.4	0.2	210.0	2.100	22.8	22.8	0.0	195.3	1.953	27.5	27.0	0.5	**1.4**	0.8
55	63.5	0.635	20.2	19.8	0.4	73.2	0.732	20.7	20.3	0.4	205.1	2.051	22.8	22.7	0.1	195.3	1.953	27.5	27.2	0.4	**1.3**	0.8
56	58.6	0.586	20.3	20.1	0.2	73.2	0.732	20.7	20.3	0.4	205.1	2.051	22.8	22.9	-0.1	190.4	1.904	27.4	27.0	0.4	**1.3**	0.8
57	58.6	0.586	20.2	19.8	0.4	73.2	0.732	20.7	20.4	0.2	205.1	2.051	22.8	22.9	-0.1	190.4	1.904	27.4	27.0	0.4	**1.3**	0.8
58	58.6	0.586	20.3	20.2	0.1	68.4	0.684	20.7	20.4	0.2	205.1	2.051	22.8	22.9	-0.1	190.4	1.904	27.4	27.0	0.4	**1.3**	0.8
59	53.7	0.537	20.3	20.0	0.4	68.4	0.684	20.7	20.4	0.2	205.1	2.051	22.8	22.9	-0.1	190.4	1.904	27.4	27.0	0.4	**1.3**	0.8
60	48.8	0.488	20.3	20.0	0.4	63.5	0.635	20.7	20.4	0.2	200.2	2.002	22.8	22.8	0.0	190.4	1.904	27.4	27.0	0.4	**1.3**	0.8
61											205.1	2.051	22.5	18.5	4.0	190.4	1.904	27.4	27.0	0.4	**1.0**	1.1
62											214.8	2.148	22.0	18.5	3.5	190.4	1.904	27.4	27.0	0.4	**1.0**	1.2
63											214.8	2.148	22.3	20.3	1.9	190.4	1.904	27.3	27.0	0.2	**1.0**	1.2
64											210.0	2.100	22.1	20.8	1.3	190.4	1.904	27.4	27.0	0.4	**1.0**	1.2
65											210.0	2.100	22.3	21.5	0.8	190.4	1.904	27.4	27.0	0.4	**1.0**	1.2
66											205.1	2.051	22.5	21.9	0.6	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
67											205.1	2.051	22.5	22.0	0.5	185.5	1.855	27.4	27.0	0.4	**1.0**	1.1
68											205.1	2.051	22.4	22.2	0.1	185.5	1.855	27.4	27.0	0.4	**1.0**	1.1
69											205.1	2.051	22.4	22.4	0.0	185.5	1.855	27.4	27.0	0.4	**1.0**	1.1
70											205.1	2.051	22.5	22.5	0.0	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
71											205.1	2.051	22.5	22.7	-0.1	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
72											205.1	2.051	22.7	22.8	-0.1	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
73											200.2	2.002	22.7	22.7	0.0	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
74											200.2	2.002	22.7	22.8	-0.1	185.5	1.855	27.3	26.9	0.4	**1.0**	1.1
75											200.2	2.002	22.7	22.9	-0.2	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
76											200.2	2.002	22.7	22.8	-0.1	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
77											200.2	2.002	22.7	22.8	-0.1	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
78											200.2	2.002	22.7	22.9	-0.2	185.5	1.855	27.3	27.0	0.2	**1.0**	1.1
79											195.3	1.953	23.0	23.1	-0.1	180.7	1.807	27.3	27.0	0.2	**0.9**	1.1
80											195.3	1.953	22.9	23.1	-0.2	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
81											195.3	1.953	22.9	23.1	-0.2	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
82											195.3	1.953	23.0	23.2	-0.1	180.7	1.807	27.3	27.0	0.2	**0.9**	1.1
83											195.3	1.953	23.0	23.2	-0.1	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
84											195.3	1.953	23.0	23.3	-0.2	180.7	1.807	27.2	26.9	0.2	**0.9**	1.1
85											195.3	1.953	23.0	23.2	-0.1	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
86											195.3	1.953	23.0	23.0	0.0	180.7	1.807	27.5	27.2	0.2	**0.9**	1.1
87											190.4	1.904	23.0	23.0	0.0	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
88											190.4	1.904	23.0	22.9	0.1	180.7	1.807	27.3	26.9	0.4	**0.9**	1.1
89											190.4	1.904	23.0	23.0	0.0	180.7	1.807	27.2	26.9	0.2	**0.9**	1.1
90											190.4	1.904	23.0	23.0	0.0	180.7	1.807	27.5	27.1	0.4	**0.9**	1.1
91											190.4	1.904	23.0	23.0	0.0	180.7	1.807	27.2	26.9	0.2	**0.9**	1.1
92											190.4	1.904	23.2	23.2	0.0	180.7	1.807	27.3	27.1	0.2	**0.9**	1.1
93											190.4	1.904	23.0	23.0	0.0	175.8	1.758	27.3	27.0	0.4	**0.9**	1.1
94											185.5	1.855	23.1	23.3	-0.2	175.8	1.758	27.3	27.1	0.2	**0.9**	1.0
95											185.5	1.855	23.1	23.3	-0.2	175.8	1.758	27.3	27.1	0.2	**0.9**	1.0
96											185.5	1.855	23.2	23.3	-0.1	175.8	1.758	27.3	27.1	0.2	**0.9**	1.0
97											185.5	1.855	23.2	23.3	-0.1	175.8	1.758	27.3	27.1	0.2	**0.9**	1.0
98											185.5	1.855	23.2	23.2	0.0	175.8	1.758	27.3	27.0	0.4	**0.9**	1.0
99											185.5	1.855	23.2	23.2	0.0	175.8	1.758	27.3	27.1	0.2	**0.9**	1.0

Table A.2-9 continued...

100	185.5	1.855	23.2	23.2	0.0	175.8	1.758	27.2	26.8	0.4	0.9	1.0
101	185.5	1.855	23.4	23.4	0.0	175.8	1.758	27.3	27.1	0.2	0.9	1.0
102	180.7	1.807	23.4	23.5	-0.1	175.8	1.758	27.3	27.1	0.2	0.9	1.0
103	180.7	1.807	23.2	23.3	-0.1	175.8	1.758	27.3	27.0	0.4	0.9	1.0
104	180.7	1.807	23.4	23.4	0.0	175.8	1.758	27.3	27.1	0.2	0.9	1.0
105	180.7	1.807	23.4	23.5	-0.1	175.8	1.758	27.3	27.1	0.2	0.9	1.0
106	180.7	1.807	23.4	23.4	0.0	175.8	1.758	27.3	27.0	0.4	0.9	1.0
107	180.7	1.807	23.4	23.4	0.0	175.8	1.758	27.2	26.8	0.4	0.9	1.0
108	180.7	1.807	23.4	23.3	0.1	175.8	1.758	27.3	27.1	0.2	0.9	1.0
109	180.7	1.807	23.4	23.4	0.0	175.8	1.758	27.3	27.1	0.2	0.9	1.0
110	180.7	1.807	23.4	23.4	0.0	175.8	1.758	27.3	27.1	0.2	0.9	1.0
111	175.8	1.758	23.4	23.4	0.0	175.8	1.758	27.3	27.1	0.2	0.9	1.0
112	175.8	1.758	23.4	23.4	0.0	170.9	1.709	27.3	27.1	0.2	0.9	1.0
113	170.9	1.709	23.4	23.5	-0.1	170.9	1.709	27.3	27.1	0.2	0.9	1.0
114	175.8	1.758	23.4	23.3	0.1	170.9	1.709	27.3	27.0	0.4	0.9	1.0
115	175.8	1.758	23.6	23.4	0.1	170.9	1.709	27.3	27.0	0.4	0.9	1.0
116	175.8	1.758	23.6	23.6	0.0	170.9	1.709	27.3	27.0	0.4	0.9	1.0
117	175.8	1.758	23.6	23.4	0.1	170.9	1.709	27.3	27.0	0.4	0.9	1.0
118	175.8	1.758	23.6	23.6	0.0	170.9	1.709	27.3	27.0	0.4	0.9	1.0
119	175.8	1.758	23.6	23.6	0.0	170.9	1.709	27.3	27.0	0.4	0.9	1.0
120	175.8	1.758	23.7	23.7	0.0	170.9	1.709	27.3	27.0	0.4	0.9	1.0
121	175.8	1.758	23.6	23.4	0.1	170.9	1.709	27.3	27.1	0.2	0.9	1.0
122	175.8	1.758	23.6	23.7	-0.1	170.9	1.709	27.2	26.8	0.4	0.9	1.0
123	170.9	1.709	23.6	23.7	-0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
124	170.9	1.709	23.6	23.6	0.0	166.0	1.660	27.3	26.9	0.5	0.8	1.0
125	170.9	1.709	23.7	23.7	0.0	166.0	1.660	27.3	27.0	0.4	0.8	1.0
126	170.9	1.709	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
127	170.9	1.709	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
128	170.9	1.709	23.7	23.6	0.1	166.0	1.660	27.3	27.1	0.2	0.8	1.0
129	170.9	1.709	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
130	170.9	1.709	23.7	23.7	0.0	166.0	1.660	27.3	27.0	0.4	0.8	1.0
131	170.9	1.709	23.7	23.7	0.0	166.0	1.660	27.3	27.0	0.4	0.8	1.0
132	166.0	1.660	23.7	23.7	0.0	166.0	1.660	27.3	27.0	0.4	0.8	1.0
133	166.0	1.660	23.7	23.6	0.1	166.0	1.660	27.2	26.8	0.4	0.8	1.0
134	166.0	1.660	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
135	166.0	1.660	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
136	166.0	1.660	23.7	23.6	0.1	166.0	1.660	27.3	27.1	0.2	0.8	1.0
137	166.0	1.660	23.6	23.6	0.0	166.0	1.660	27.3	26.9	0.5	0.8	1.0
138	166.0	1.660	23.9	23.8	0.1	166.0	1.660	27.3	26.9	0.5	0.8	1.0
139	166.0	1.660	23.7	23.6	0.1	166.0	1.660	27.3	27.0	0.4	0.8	1.0
140	166.0	1.660	23.7	23.6	0.1	161.1	1.611	27.2	27.0	0.2	0.8	0.9
141	166.0	1.660	23.6	23.7	-0.1	161.1	1.611	27.2	27.0	0.2	0.8	0.9
142	166.0	1.660	23.7	23.6	0.1	161.1	1.611	27.2	27.0	0.2	0.8	0.9
143	161.1	1.611	23.9	23.9	0.0	161.1	1.611	27.3	27.0	0.4	0.8	0.9
144	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.2	27.0	0.2	0.8	0.9
145	161.1	1.611	23.8	23.8	0.0	161.1	1.611	27.2	27.0	0.2	0.8	0.9
146	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.2	26.9	0.4	0.8	0.9
147	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.3	26.9	0.5	0.8	0.9
148	161.1	1.611	23.9	23.9	0.0	161.1	1.611	27.0	26.8	0.2	0.8	0.9
149	161.1	1.611	24.1	24.0	0.1	161.1	1.611	27.2	27.0	0.2	0.8	0.9
150	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.2	26.8	0.4	0.8	0.9
151	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.3	27.0	0.4	0.8	0.9
152	161.1	1.611	23.9	23.8	0.1	161.1	1.611	27.3	27.0	0.4	0.8	0.9
153	161.1	1.611	24.1	24.0	0.1	161.1	1.611	27.3	27.0	0.4	0.8	0.9

Table A.2-9 continued...

154	161.1	1.611	24.1	24.0	0.1	161.1	1.611	27.3	27.0	0.4	0.8	0.9
155	161.1	1.611	24.1	24.0	0.1	156.3	1.563	27.2	27.0	0.2	0.8	0.9
156	156.3	1.563	24.1	24.1	0.0	161.1	1.611	27.0	26.8	0.2	0.8	0.9
157	156.3	1.563	24.0	24.0	0.0	156.3	1.563	27.3	26.9	0.5	0.8	0.9
158	156.3	1.563	24.0	24.1	-0.1	156.3	1.563	27.2	26.7	0.5	0.8	0.9
159	156.3	1.563	24.1	24.0	0.1	156.3	1.563	27.0	26.8	0.2	0.8	0.9
160	156.3	1.563	24.1	24.0	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
161	156.3	1.563	24.0	24.0	0.0	156.3	1.563	27.2	26.8	0.4	0.8	0.9
162	156.3	1.563	24.1	24.1	0.0	156.3	1.563	27.2	26.8	0.4	0.8	0.9
163	156.3	1.563	24.1	24.0	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
164	156.3	1.563	24.0	23.8	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
165	156.3	1.563	24.1	24.0	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
166	156.3	1.563	24.0	24.1	-0.1	156.3	1.563	27.2	26.7	0.5	0.8	0.9
167	156.3	1.563	24.0	24.0	0.0	156.3	1.563	27.2	26.7	0.5	0.8	0.9
168	156.3	1.563	24.0	24.0	0.0	156.3	1.563	27.0	26.8	0.2	0.8	0.9
169	156.3	1.563	24.0	24.0	0.0	156.3	1.563	27.2	26.8	0.4	0.8	0.9
170	151.4	1.514	24.1	24.0	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
171	151.4	1.514	24.1	24.0	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
172	151.4	1.514	24.1	24.0	0.1	156.3	1.563	27.0	26.8	0.2	0.8	0.9
173	151.4	1.514	24.1	24.1	0.0	156.3	1.563	27.2	26.8	0.4	0.8	0.9
174	151.4	1.514	24.3	24.3	0.0	156.3	1.563	27.2	26.8	0.4	0.8	0.9
175	151.4	1.514	24.4	24.3	0.1	156.3	1.563	27.2	26.8	0.4	0.8	0.9
176	151.4	1.514	24.3	24.2	0.1	151.4	1.514	27.0	26.7	0.4	0.8	0.9
177	151.4	1.514	24.3	24.3	0.0	151.4	1.514	27.0	26.8	0.2	0.8	0.9
178	151.4	1.514	24.3	24.2	0.1	151.4	1.514	27.2	26.8	0.4	0.8	0.9
179	151.4	1.514	24.3	24.3	0.0	151.4	1.514	27.2	26.9	0.2	0.8	0.9
180	151.4	1.514	24.3	24.3	0.0	151.4	1.514	27.2	26.8	0.4	0.8	0.9
181	151.4	1.514	24.3	24.4	-0.1	151.4	1.514	27.0	26.8	0.2	0.8	0.9
182	151.4	1.514	24.3	24.3	0.0	151.4	1.514	27.2	26.8	0.4	0.8	0.9
183	151.4	1.514	24.3	24.3	0.0	151.4	1.514	27.0	26.8	0.2	0.8	0.9
184	151.4	1.514	24.3	24.4	-0.1	151.4	1.514	27.2	26.8	0.4	0.8	0.9
185	146.5	1.465	24.3	24.4	-0.1	151.4	1.514	27.2	26.7	0.5	0.7	0.9
186	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.2	26.7	0.5	0.7	0.9
187	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.0	26.8	0.2	0.7	0.9
188	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.2	26.8	0.4	0.7	0.9
189	146.5	1.465	24.3	24.4	-0.1	151.4	1.514	27.2	26.7	0.5	0.7	0.9
190	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.0	26.8	0.2	0.7	0.9
191	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.2	26.8	0.4	0.7	0.9
192	146.5	1.465	24.3	24.3	0.0	151.4	1.514	27.0	26.8	0.2	0.7	0.9
193	146.5	1.465	24.5	24.5	0.0	151.4	1.514	27.0	26.7	0.4	0.7	0.9
194	146.5	1.465	24.5	24.5	0.0	151.4	1.514	27.2	26.8	0.4	0.7	0.9
195	146.5	1.465	24.5	24.5	0.0	151.4	1.514	27.0	26.7	0.4	0.7	0.9
196	146.5	1.465	24.5	24.4	0.1	151.4	1.514	27.0	26.8	0.2	0.7	0.9
197	146.5	1.465	24.5	24.5	0.0	151.4	1.514	27.0	26.7	0.4	0.7	0.9
198	146.5	1.465	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
199	146.5	1.465	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
200	146.5	1.465	24.5	24.6	-0.1	146.5	1.465	27.0	26.7	0.4	0.7	0.8
201	141.6	1.416	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
202	141.6	1.416	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
203	141.6	1.416	24.4	24.5	-0.1	146.5	1.465	27.0	26.7	0.4	0.7	0.8
204	141.6	1.416	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
205	141.6	1.416	24.6	24.6	0.0	146.5	1.465	27.0	26.8	0.2	0.7	0.8
206	141.6	1.416	24.5	24.5	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
207	141.6	1.416	24.6	24.5	0.1	146.5	1.465	27.0	26.7	0.4	0.7	0.8

Table A.2-9 continued...

208	141.6	1.416	24.6	24.6	0.0	146.5	1.465	27.0	26.7	0.4	0.7	0.8
209	141.6	1.416	24.5	24.6	-0.1	146.5	1.465	27.0	26.7	0.4	0.7	0.8
210	141.6	1.416	24.4	24.4	0.0	146.5	1.465	27.0	26.6	0.4	0.7	0.8
211	141.6	1.416	24.5	24.5	0.0	146.5	1.465	27.2	26.8	0.4	0.7	0.8
212	141.6	1.416	24.6	24.5	0.1	146.5	1.465	27.0	26.8	0.2	0.7	0.8
213	141.6	1.416	24.6	24.5	0.1	146.5	1.465	26.9	26.6	0.2	0.7	0.8
214	141.6	1.416	24.6	24.6	0.0	146.5	1.465	27.0	26.6	0.4	0.7	0.8
215	141.6	1.416	24.6	24.6	0.0	146.5	1.465	26.9	26.6	0.2	0.7	0.8
216	141.6	1.416	24.6	24.5	0.1	146.5	1.465	26.9	26.6	0.2	0.7	0.8
217	136.7	1.367	24.6	24.5	0.1	146.5	1.465	26.9	26.6	0.2	0.7	0.8
218	141.6	1.416	24.6	24.6	0.0	146.5	1.465	27.0	26.6	0.4	0.7	0.8
219	136.7	1.367	24.6	24.5	0.1	141.6	1.416	27.0	26.6	0.4	0.7	0.8
220	136.7	1.367	24.6	24.6	0.0	146.5	1.465	26.9	26.6	0.2	0.7	0.8
221	136.7	1.367	24.6	24.8	-0.1	141.6	1.416	27.0	26.6	0.4	0.7	0.8
222	136.7	1.367	24.5	24.8	-0.2	141.6	1.416	27.0	26.6	0.4	0.7	0.8
223	136.7	1.367	24.5	24.6	-0.1	141.6	1.416	26.9	26.6	0.2	0.7	0.8
224	136.7	1.367	24.6	24.6	0.0	141.6	1.416	26.9	26.6	0.2	0.7	0.8
225	136.7	1.367	24.5	24.8	-0.2	141.6	1.416	26.9	26.6	0.2	0.7	0.8
226	136.7	1.367	24.5	24.6	-0.1	141.6	1.416	26.9	26.6	0.2	0.7	0.8
227	131.8	1.318	24.5	24.8	-0.2	141.6	1.416	26.7	26.5	0.2	0.7	0.8
228	131.8	1.318	24.6	24.6	0.0	141.6	1.416	27.0	26.6	0.4	0.7	0.8
229	131.8	1.318	24.7	24.8	-0.1	141.6	1.416	27.0	26.5	0.5	0.7	0.8
230	131.8	1.318	24.7	24.9	-0.2	141.6	1.416	26.8	26.3	0.5	0.7	0.8
231	131.8	1.318	24.8	24.8	0.0	141.6	1.416	27.0	26.6	0.4	0.7	0.8
232	131.8	1.318	24.8	24.8	0.0	141.6	1.416	27.0	26.6	0.4	0.7	0.8
233	131.8	1.318	24.7	24.8	-0.1	141.6	1.416	26.9	26.6	0.2	0.7	0.8
234	131.8	1.318	24.8	24.8	0.0	141.6	1.416	26.8	26.3	0.5	0.7	0.8
235	131.8	1.318	25.0	25.0	0.0	141.6	1.416	26.8	26.5	0.4	0.7	0.8
236	131.8	1.318	24.9	25.0	-0.1	141.6	1.416	26.8	26.5	0.4	0.7	0.8
237	131.8	1.318	24.7	24.8	-0.1	141.6	1.416	26.8	26.5	0.4	0.7	0.8
238	127.0	1.270	24.7	24.8	-0.1	141.6	1.416	26.8	26.5	0.4	0.7	0.8
239	127.0	1.270	24.7	24.9	-0.2	141.6	1.416	26.8	26.5	0.4	0.7	0.8
240	127.0	1.270	25.0	25.0	0.0	141.6	1.416	26.7	26.5	0.2	0.7	0.8
241	127.0	1.270	25.0	25.1	-0.1	141.6	1.416	26.8	26.5	0.4	0.7	0.8
242	127.0	1.270	25.0	25.1	-0.1	141.6	1.416	26.8	26.5	0.4	0.7	0.8
243	127.0	1.270	24.9	25.0	-0.1	136.7	1.367	26.7	26.5	0.2	0.7	0.8
244	127.0	1.270	24.9	24.9	0.0	136.7	1.367	26.8	26.5	0.4	0.7	0.8
245	127.0	1.270	24.9	24.9	0.0	136.7	1.367	26.8	26.5	0.4	0.7	0.8
246	127.0	1.270	24.9	24.9	0.0	136.7	1.367	26.8	26.5	0.4	0.7	0.8
247	127.0	1.270	24.9	24.7	0.1	136.7	1.367	26.8	26.5	0.4	0.7	0.8
248	127.0	1.270	24.6	23.2	1.4	136.7	1.367	26.8	26.6	0.2	0.7	0.8
249	127.0	1.270	24.5	22.6	1.9	136.7	1.367	26.8	26.6	0.2	0.7	0.8
250	127.0	1.270	24.3	22.4	1.9	136.7	1.367	26.7	26.5	0.2	0.7	0.8
251	127.0	1.270	24.4	22.9	1.6	136.7	1.367	26.8	26.6	0.2	0.7	0.8
252	127.0	1.270	24.3	22.7	1.6	136.7	1.367	26.8	26.5	0.4	0.7	0.8
253	131.8	1.318	24.1	21.7	2.4	136.7	1.367	26.7	26.5	0.2	0.7	0.8
254	136.7	1.367	23.9	21.6	2.3	136.7	1.367	26.8	26.5	0.4	0.7	0.8
255	136.7	1.367	23.7	22.1	1.7	136.7	1.367	26.8	26.5	0.4	0.7	0.8
256	136.7	1.367	23.8	22.0	1.8	136.7	1.367	26.7	26.5	0.2	0.7	0.8
257	136.7	1.367	23.6	21.7	1.9	136.7	1.367	26.7	26.5	0.2	0.7	0.8
258	131.8	1.318	23.6	22.3	1.3	136.7	1.367	26.7	26.6	0.1	0.7	0.8
259	131.8	1.318	23.7	21.9	1.8	136.7	1.367	26.8	26.5	0.4	0.7	0.8
260	136.7	1.367	23.6	21.8	1.8	136.7	1.367	26.8	26.6	0.2	0.7	0.8
261	136.7	1.367	23.6	22.3	1.3	136.7	1.367	26.7	26.6	0.1	0.7	0.8

Table A.3-1 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was filled with wheat (11.8% m.c.) and no carbon dioxide was added.

Sample No.	G31-0					G32-0					G33-0					G34-0						
	Replicate No.																					
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(s)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	19.4	19.6	-0.1	253.9	2.539	20.0	19.5	0.5	253.9	2.539	21.9	21.5	0.4	253.9	2.539	18.6	20.5	-2.0	**2.5**	0.0
1	244.1	2.441	19.6	19.7	-0.1	244.1	2.441	20.0	19.5	0.5	244.1	2.441	21.9	21.5	0.4	249.0	2.490	21.0	20.5	0.5	**2.5**	0.0
2	234.4	2.344	19.4	19.7	-0.2	234.4	2.344	20.0	19.5	0.5	234.4	2.344	21.9	21.5	0.4	244.1	2.441	20.9	20.5	0.4	**2.4**	0.0
3	224.6	2.246	19.4	19.7	-0.2	229.5	2.295	20.0	19.5	0.5	229.5	2.295	21.9	21.5	0.4	239.3	2.393	18.3	20.4	-2.1	**2.3**	0.1
4	219.7	2.197	19.6	19.7	-0.1	214.8	2.148	20.0	19.5	0.5	214.8	2.148	21.9	21.5	0.4	239.3	2.393	19.8	20.4	-0.6	**2.2**	0.1
5	210.0	2.100	19.6	19.7	-0.1	205.1	2.051	20.0	19.5	0.5	205.1	2.051	21.7	21.3	0.4	234.4	2.344	18.7	20.3	-1.6	**2.1**	0.1
6	205.1	2.051	19.4	19.7	-0.2	190.4	1.904	20.0	19.5	0.5	185.5	1.855	21.9	21.5	0.4	234.4	2.344	19.3	20.1	-0.9	**2.0**	0.2
7	195.3	1.953	19.6	19.7	-0.1	180.7	1.807	20.0	19.5	0.5	166.0	1.660	21.7	21.3	0.4	229.5	2.295	20.9	20.1	0.7	**1.9**	0.3
8	190.4	1.904	19.6	19.7	-0.1	166.0	1.660	20.0	19.4	0.6	151.4	1.514	21.6	21.3	0.2	224.6	2.246	20.3	20.0	0.2	**1.8**	0.3
9	185.5	1.855	19.4	19.7	-0.2	156.3	1.563	20.0	19.5	0.5	136.7	1.367	21.9	21.5	0.4	219.7	2.197	18.9	20.0	-1.1	**1.7**	0.4
10	175.8	1.758	19.4	19.7	-0.2	146.5	1.465	20.0	19.5	0.5	122.1	1.221	21.6	21.3	0.2	219.7	2.197	20.9	20.0	0.8	**1.7**	0.4
11	170.9	1.709	19.6	19.7	-0.1	136.7	1.367	20.0	19.5	0.5	107.4	1.074	21.9	21.5	0.4	214.8	2.148	19.7	19.9	-0.2	**1.6**	0.5
12	166.0	1.660	19.6	19.7	-0.1	127.0	1.270	20.0	19.5	0.5	97.7	0.977	21.7	21.3	0.4	210.0	2.100	18.3	19.9	-1.6	**1.5**	0.5
13	161.1	1.611	19.4	19.7	-0.2	117.2	1.172	19.9	19.5	0.4	83.0	0.830	21.7	21.5	0.2	205.1	2.051	21.2	19.9	1.3	**1.4**	0.5
14	151.4	1.514	19.6	19.7	-0.1	112.3	1.123	20.0	19.5	0.5	73.2	0.732	21.6	21.3	0.2	205.1	2.051	21.1	19.8	1.3	**1.4**	0.6
15	151.4	1.514	19.4	19.6	-0.1	102.5	1.025	20.0	19.5	0.5	63.5	0.635	21.7	21.3	0.4	200.2	2.002	19.3	19.8	-0.5	**1.3**	0.6
16	146.5	1.465	19.6	19.7	-0.1	92.8	0.928	20.0	19.5	0.5	53.7	0.537	21.6	21.3	0.2	195.3	1.953	20.9	19.8	1.1	**1.2**	0.6
17	136.7	1.367	19.4	19.7	-0.2	87.9	0.879	20.0	19.5	0.5	43.9	0.439	21.4	21.3	0.1	195.3	1.953	18.7	19.6	-0.9	**1.2**	0.7
18	136.7	1.367	19.4	19.7	-0.2	78.1	0.781	20.0	19.5	0.5	39.1	0.391	21.6	21.3	0.2	190.4	1.904	17.9	19.8	-1.8	**1.1**	0.7
19	127.0	1.270	19.4	19.7	-0.2	73.2	0.732	19.9	19.5	0.4	34.2	0.342	21.6	21.3	0.2	190.4	1.904	20.4	19.8	0.6	**1.1**	0.7
20	127.0	1.270	19.4	19.7	-0.2	63.5	0.635	20.0	19.5	0.5	24.4	0.244	21.6	21.3	0.2	185.5	1.855	18.4	19.6	-1.2	**1.0**	0.7
21	122.1	1.221	19.6	19.7	-0.1	58.6	0.586	20.0	19.5	0.5	19.5	0.195	21.6	21.2	0.4	180.7	1.807	19.3	19.9	-0.6	**1.0**	0.7
22	117.2	1.172	19.4	19.8	-0.4	53.7	0.537	20.1	19.7	0.5	19.5	0.195	21.7	21.3	0.4	180.7	1.807	21.0	19.9	1.1	**0.9**	0.7
23	112.3	1.123	19.3	19.7	-0.4	48.8	0.488	20.0	19.5	0.5	14.6	0.146	21.7	21.3	0.4	175.8	1.758	18.6	19.9	-1.2	**0.9**	0.7
24	107.4	1.074	19.4	19.7	-0.2	43.9	0.439	19.9	19.5	0.4	9.8	0.098	21.7	21.3	0.4	170.9	1.709	20.9	19.9	1.1	**0.8**	0.7
25	102.5	1.025	19.6	19.7	-0.1	39.1	0.391	20.0	19.5	0.5	4.9	0.049	21.6	21.3	0.2	170.9	1.709	20.1	20.1	0.0	**0.8**	0.7
26	102.5	1.025	19.4	19.7	-0.2	34.2	0.342	20.0	19.5	0.5	4.9	0.049	21.7	21.3	0.4	166.0	1.660	18.1	20.0	-2.0	**0.8**	0.7
27	97.7	0.977	19.6	19.7	-0.1	29.3	0.293	20.0	19.5	0.5	4.9	0.049	21.4	21.2	0.2	166.0	1.660	19.9	20.1	-0.2	**0.7**	0.7
28	92.8	0.928	19.4	19.7	-0.2	24.4	0.244	20.0	19.5	0.5						161.1	1.611	21.3	20.1	1.2	**0.7**	0.7
29	92.8	0.928	19.6	19.8	-0.2	19.5	0.195	19.9	19.5	0.4						156.3	1.563	18.4	20.3	-2.0	**0.7**	0.7
30	87.9	0.879	19.6	19.7	-0.1	19.5	0.195	20.0	19.5	0.5						156.3	1.563	20.7	20.1	0.6	**0.7**	0.7
31	83.0	0.830	19.4	19.7	-0.2	14.6	0.146	19.9	19.5	0.4						151.4	1.514	20.3	20.1	0.1	**0.6**	0.7
32	83.0	0.830	19.4	19.8	-0.4	9.8	0.098	19.9	19.5	0.4						151.4	1.514	18.1	20.0	-2.0	**0.6**	0.7
33	78.1	0.781	19.4	19.8	-0.4	9.8	0.098	20.0	19.5	0.5						146.5	1.465	19.3	20.1	-0.9	**0.6**	0.7
34	73.2	0.732	19.6	19.8	-0.2	9.8	0.098	20.0	19.5	0.5						146.5	1.465	18.6	20.0	-1.5	**0.6**	0.7
35	73.2	0.732	19.3	19.8	-0.5	4.9	0.049	20.1	19.5	0.6						141.6	1.416	18.4	20.0	-1.6	**0.5**	0.7
36	73.2	0.732	19.6	19.8	-0.2	4.9	0.049	20.0	19.6	0.4						141.6	1.416	21.0	20.1	0.8	**0.5**	0.7
37	68.4	0.684	19.4	19.8	-0.4	4.9	0.049	20.0	19.5	0.5						136.7	1.367	20.0	20.0	0.0	**0.5**	0.6
38	68.4	0.684	19.6	19.8	-0.2											136.7	1.367	18.1	19.9	-1.8	**0.5**	0.7
39	63.5	0.635	19.4	19.8	-0.4											131.8	1.318	20.7	20.0	0.7	**0.5**	0.6
40	63.5	0.635	19.6	19.8	-0.2											131.8	1.318	19.0	19.9	-0.9	**0.5**	0.6
41	58.6	0.586	19.4	19.8	-0.4											127.0	1.270	19.3	19.9	-0.6	**0.5**	0.6
42	58.6	0.586	19.6	19.8	-0.2											127.0	1.270	21.0	19.9	1.1	**0.5**	0.6
43	53.7	0.537	19.6	19.8	-0.2											122.1	1.221	20.1	19.9	0.2	**0.4**	0.6
44	53.7	0.537	19.6	19.8	-0.2											122.1	1.221	19.4	19.9	-0.5	**0.4**	0.6
45	53.7	0.537	19.4	19.8	-0.4											122.1	1.221	21.3	19.9	1.4	**0.4**	0.6
46	53.7	0.537	19.4	19.8	-0.4											117.2	1.172	18.6	19.8	-1.2	**0.4**	0.6

Table A.3-1 continued...

47	48.8	0.488	19.4	19.8	-0.4
48	48.8	0.488	19.6	19.8	-0.2
49	48.8	0.488	19.4	19.8	-0.4
50	48.8	0.488	19.4	19.8	-0.4
51	43.9	0.439	19.4	19.8	-0.4
52	43.9	0.439	19.3	19.8	-0.5
53	43.9	0.439	19.4	19.8	-0.4
54	43.9	0.439	19.4	19.8	-0.4
55	39.1	0.391	19.4	19.8	-0.4
56	39.1	0.391	19.4	19.8	-0.4
57	39.1	0.391	19.4	19.8	-0.4
58	39.1	0.391	19.4	19.8	-0.4
59	39.1	0.391	19.6	19.7	-0.1
60	34.2	0.342	19.6	19.8	-0.2
61	34.2	0.342	19.4	19.7	-0.2
62	34.2	0.342	19.4	19.7	-0.2
63	34.2	0.342	19.6	19.7	-0.1
64	34.2	0.342	19.6	19.7	-0.1
65	29.3	0.293	19.4	19.7	-0.2
66	29.3	0.293	19.6	19.7	-0.1
67	29.3	0.293	19.4	19.7	-0.2
68	29.3	0.293	19.6	19.6	0.0
69	29.3	0.293	19.4	19.6	-0.1
70	29.3	0.293	19.7	19.7	0.0
71	24.4	0.244	19.6	19.7	-0.1
72	24.4	0.244	19.6	19.6	0.0
73	24.4	0.244	19.6	19.6	0.0
74	24.4	0.244	19.6	19.6	0.0
75	24.4	0.244	19.4	19.6	-0.1
76	24.4	0.244	19.4	19.6	-0.1
77	24.4	0.244	19.3	19.6	-0.2
78	19.5	0.195	19.6	19.6	0.0
79	19.5	0.195	19.3	19.6	-0.2
80	19.5	0.195	19.6	19.7	-0.1
81	19.5	0.195	19.4	19.7	-0.2
82	19.5	0.195	19.7	19.9	-0.1
83	19.5	0.195	19.4	19.7	-0.2
84	19.5	0.195	19.6	19.6	0.0
85	19.5	0.195	19.6	19.7	-0.1
86	19.5	0.195	19.6	19.7	-0.1
87	19.5	0.195	19.7	19.7	0.0
88	19.5	0.195	19.7	19.7	0.0
89	19.5	0.195	19.6	19.7	-0.1
90	19.5	0.195	19.7	19.9	-0.1
91	19.5	0.195	19.6	19.7	-0.1
92	14.6	0.146	19.7	19.7	0.0
93	14.6	0.146	19.6	19.7	-0.1
94	14.6	0.146	19.6	19.7	-0.1
95	14.6	0.146	19.5	19.7	-0.2
96	14.6	0.146	19.6	19.7	-0.1
97	14.6	0.146	19.7	19.7	0.0
98	14.6	0.146	19.7	19.7	0.0
99	14.6	0.146	19.6	19.7	-0.1
100	14.6	0.146	19.4	19.6	-0.1

112.3	1.123	19.2	19.9	-0.7	**0.4**	0.5
112.3	1.123	20.1	19.9	0.2	**0.4**	0.5
112.3	1.123	18.6	19.9	-1.3	**0.4**	0.5
107.4	1.074	20.1	20.0	0.1	**0.4**	0.5
107.4	1.074	21.3	19.9	1.4	**0.4**	0.5
107.4	1.074	19.3	19.9	-0.6	**0.4**	0.5
102.5	1.025	20.9	20.1	0.7	**0.4**	0.5
102.5	1.025	19.4	20.0	-0.6	**0.4**	0.5
97.7	0.977	18.6	20.0	-1.5	**0.3**	0.5
97.7	0.977	19.3	20.1	-0.9	**0.3**	0.5
92.8	0.928	20.4	20.3	0.1	**0.3**	0.4
92.8	0.928	18.7	20.1	-1.5	**0.3**	0.4
92.8	0.928	21.5	20.1	1.3	**0.3**	0.4
87.9	0.879	19.2	20.1	-1.0	**0.3**	0.4
87.9	0.879	20.9	20.3	0.6	**0.3**	0.4
87.9	0.879	18.7	20.0	-1.2	**0.3**	0.4
83.0	0.830	20.9	20.1	0.7	**0.3**	0.4
83.0	0.830	20.1	20.0	0.1	**0.3**	0.4
83.0	0.830	18.6	19.9	-1.3	**0.3**	0.4
78.1	0.781	20.0	19.9	0.1	**0.3**	0.4
78.1	0.781	21.3	19.8	1.6	**0.3**	0.4
78.1	0.781	19.2	19.8	-0.6	**0.3**	0.4
73.2	0.732	20.9	19.8	1.1	**0.3**	0.3
73.2	0.732	20.1	19.7	0.5	**0.3**	0.3
73.2	0.732	18.4	19.5	-1.1	**0.2**	0.3
73.2	0.732	19.7	19.5	0.1	**0.2**	0.3
68.4	0.684	18.4	19.5	-1.1	**0.2**	0.3
68.4	0.684	17.9	19.5	-1.6	**0.2**	0.3
68.4	0.684	20.7	19.5	1.2	**0.2**	0.3
68.4	0.684	20.0	19.5	0.5	**0.2**	0.3
63.5	0.635	19.5	19.5	0.0	**0.2**	0.3
63.5	0.635	21.2	19.7	1.6	**0.2**	0.3
63.5	0.635	19.3	19.5	-0.2	**0.2**	0.3
63.5	0.635	19.0	19.5	-0.5	**0.2**	0.3
58.6	0.586	20.9	19.7	1.2	**0.2**	0.3
58.6	0.586	18.3	19.7	-1.3	**0.2**	0.3
58.6	0.586	19.4	19.8	-0.4	**0.2**	0.3
53.7	0.537	21.2	19.8	1.4	**0.2**	0.3
53.7	0.537	18.8	19.9	-1.1	**0.2**	0.3
53.7	0.537	18.7	19.9	-1.2	**0.2**	0.3
53.7	0.537	20.1	19.9	0.2	**0.2**	0.3
53.7	0.537	18.1	20.0	-2.0	**0.2**	0.3
48.8	0.488	20.9	20.0	0.8	**0.2**	0.2
48.8	0.488	21.0	20.0	1.0	**0.2**	0.2
48.8	0.488	18.6	19.9	-1.3	**0.2**	0.2
48.8	0.488	21.2	19.9	1.3	**0.2**	0.2
43.9	0.439	19.7	19.9	-0.2	**0.1**	0.2
43.9	0.439	18.6	19.9	-1.3	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2
43.9	0.439	20.7	19.9	0.8	**0.1**	0.2

Table A.3-2 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 15 min.

Sample No.	G31-15					G32-15					G33-15					G34-15					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(s)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	Mean	SD
0	253.9	2.539	20.6	19.9	0.7	253.9	2.539	20.4	20.4	0.0	244.1	2.441	22.4	22.2	0.2	258.8	2.588	20.0	19.9	0.1	**2.5**	0.1
1	249.0	2.490	20.6	19.9	0.7	249.0	2.490	20.4	20.4	0.0	234.4	2.344	22.4	22.2	0.2	253.9	2.539	17.9	20.0	-2.1	**2.5**	0.1
2	244.1	2.441	20.6	19.9	0.7	234.4	2.344	20.3	20.3	0.0	219.7	2.197	22.4	22.2	0.2	253.9	2.539	20.3	20.0	0.4	**2.4**	0.1
3	234.4	2.344	20.6	19.9	0.7	219.7	2.197	20.4	20.3	0.1	200.2	2.002	22.4	22.2	0.2	249.0	2.490	20.6	19.9	0.7	**2.3**	0.2
4	224.6	2.246	20.6	19.9	0.7	210.0	2.100	20.3	20.4	-0.1	185.5	1.855	22.3	22.2	0.1	244.1	2.441	18.6	19.9	-1.2	**2.2**	0.2
5	214.8	2.148	20.6	20.0	0.6	200.2	2.002	20.1	20.3	-0.1	166.0	1.660	22.4	22.2	0.2	239.3	2.393	19.2	19.9	-0.6	**2.1**	0.3
6	210.0	2.100	20.6	19.9	0.7	185.5	1.855	20.3	20.3	0.0	151.4	1.514	22.4	22.2	0.2	234.4	2.344	19.0	19.9	-0.9	**2.0**	0.4
7	205.1	2.051	20.6	19.9	0.7	175.8	1.758	20.4	20.3	0.1	136.7	1.367	22.4	22.2	0.2	234.4	2.344	19.1	19.9	-0.7	**1.9**	0.4
8	195.3	1.953	20.6	19.9	0.7	161.1	1.611	20.3	20.3	0.0	127.0	1.270	22.4	22.1	0.4	229.5	2.295	20.9	19.9	1.1	**1.8**	0.4
9	190.4	1.904	20.6	19.9	0.7	151.4	1.514	20.4	20.3	0.1	112.3	1.123	22.4	22.1	0.4	224.6	2.246	20.0	19.6	0.5	**1.7**	0.5
10	185.5	1.855	20.6	19.9	0.7	141.6	1.416	20.4	20.3	0.1	102.5	1.025	22.3	22.1	0.2	224.6	2.246	18.3	19.3	-1.0	**1.6**	0.5
11	175.8	1.758	20.6	19.9	0.7	131.8	1.318	20.3	20.3	0.0	87.9	0.879	22.4	22.2	0.2	219.7	2.197	21.4	19.6	1.8	**1.5**	0.6
12	170.9	1.709	20.6	19.9	0.7	122.1	1.221	20.4	20.3	0.1	78.1	0.781	22.4	22.1	0.4	214.8	2.148	18.7	19.5	-0.7	**1.5**	0.6
13	166.0	1.660	20.5	19.9	0.6	117.2	1.172	20.3	20.3	0.0	68.4	0.684	22.4	22.1	0.4	210.0	2.100	19.2	19.6	-0.4	**1.4**	0.6
14	161.1	1.611	20.6	19.9	0.7	107.4	1.074	20.3	20.3	0.0	63.5	0.635	22.3	22.1	0.2	210.0	2.100	18.8	19.5	-0.7	**1.4**	0.6
15	151.4	1.514	20.6	19.9	0.7	97.7	0.977	20.4	20.3	0.1	53.7	0.537	22.3	22.1	0.2	205.1	2.051	20.0	19.5	0.5	**1.3**	0.7
16	151.4	1.514	20.6	19.9	0.7	87.9	0.879	20.4	20.3	0.1	48.8	0.488	22.3	22.1	0.2	200.2	2.002	19.6	19.5	0.1	**1.2**	0.7
17	146.5	1.465	20.5	19.9	0.6	83.0	0.830	20.3	20.3	0.0	39.1	0.391	22.4	22.1	0.4	200.2	2.002	21.1	19.5	1.6	**1.2**	0.7
18	136.7	1.367	20.6	19.9	0.7	73.2	0.732	20.6	20.4	0.1	34.2	0.342	22.3	22.1	0.2	195.3	1.953	18.5	19.5	-1.0	**1.1**	0.7
19	131.8	1.318	20.6	19.9	0.7	68.4	0.684	20.4	20.4	0.0	29.3	0.293	22.3	22.1	0.2	190.4	1.904	18.9	19.4	-0.5	**1.0**	0.7
20	127.0	1.270	20.6	19.9	0.7	63.5	0.635	20.4	20.6	-0.1	24.4	0.244	22.3	22.1	0.2	190.4	1.904	19.1	19.6	-0.5	**1.0**	0.7
21	122.1	1.221	20.6	19.9	0.7	53.7	0.537	20.6	20.4	0.1	19.5	0.195	22.3	22.1	0.2	185.5	1.855	18.5	19.6	-1.1	**1.0**	0.7
22	117.2	1.172	20.6	19.9	0.7	48.8	0.488	20.4	20.6	-0.1	14.6	0.146	22.2	22.1	0.1	185.5	1.855	20.8	19.9	1.0	**0.9**	0.8
23	117.2	1.172	20.6	19.9	0.7	43.9	0.439	20.6	20.6	0.0	14.6	0.146	22.4	22.1	0.4	180.7	1.807	19.6	19.6	0.0	**0.9**	0.7
24	112.3	1.123	20.5	19.9	0.6	39.1	0.391	20.6	20.4	0.1	9.8	0.098	22.3	22.1	0.2	175.8	1.758	18.3	19.7	-1.5	**0.8**	0.7
25	107.4	1.074	20.6	19.9	0.7	34.2	0.342	20.6	20.6	0.0	9.8	0.098	22.3	22.1	0.2	175.8	1.758	20.1	19.7	0.4	**0.8**	0.8
26	102.5	1.025	20.6	19.9	0.7	29.3	0.293	20.4	20.4	0.0	4.9	0.049	22.4	22.1	0.4	170.9	1.709	18.4	19.7	-1.3	**0.8**	0.8
27	97.7	0.977	20.6	19.9	0.7	24.4	0.244	20.6	20.6	0.0	4.9	0.049	22.3	22.1	0.2	166.0	1.660	19.6	20.0	-0.4	**0.7**	0.7
28	92.8	0.928	20.6	20.0	0.6	19.5	0.195	20.6	20.6	0.0	4.9	0.049	22.4	22.1	0.4	166.0	1.660	20.9	20.0	1.0	**0.7**	0.7
29	87.9	0.879	20.7	20.0	0.7	19.5	0.195	20.4	20.6	-0.1	4.9	0.049	22.3	22.1	0.2	161.1	1.611	19.0	19.9	-0.9	**0.7**	0.7
30	87.9	0.879	20.6	20.0	0.6	14.6	0.146	20.4	20.6	-0.1	4.9	0.049	22.4	22.1	0.4	161.1	1.611	21.3	20.0	1.3	**0.7**	0.7
31	83.0	0.830	20.6	20.1	0.5	9.8	0.098	20.3	20.6	-0.2	4.9	0.049	22.4	22.1	0.4	156.3	1.563	19.2	19.9	-0.6	**0.6**	0.7
32	78.1	0.781	20.7	20.1	0.6	9.8	0.098	20.4	20.6	-0.1						151.4	1.514	19.2	19.9	-0.6	**0.6**	0.7
33	73.2	0.732	20.6	20.0	0.6	4.9	0.049	20.6	20.7	-0.1						151.4	1.514	20.6	20.0	0.6	**0.6**	0.7
34	73.2	0.732	20.7	20.0	0.7	4.9	0.049	20.4	20.7	-0.2						151.4	1.514	20.2	19.7	0.5	**0.6**	0.7
35	68.4	0.684	20.7	20.0	0.7											146.5	1.465	20.1	19.9	0.2	**0.5**	0.7
36	68.4	0.684	20.7	20.0	0.7											146.5	1.465	20.7	19.6	1.1	**0.5**	0.7
37	63.5	0.635	20.6	19.9	0.7											141.6	1.416	18.7	19.6	-0.9	**0.5**	0.7
38	58.6	0.586	20.6	20.0	0.6											141.6	1.416	19.1	19.6	-0.5	**0.5**	0.7
39	58.6	0.586	20.7	20.0	0.7											136.7	1.367	21.2	19.6	1.6	**0.5**	0.6
40	53.7	0.537	20.7	20.1	0.6											136.7	1.367	18.5	19.5	-1.0	**0.5**	0.6
41	53.7	0.537	20.7	20.0	0.7											131.8	1.318	20.8	19.6	1.2	**0.5**	0.6
42	48.8	0.488	20.7	20.0	0.7											131.8	1.318	20.2	19.4	0.9	**0.5**	0.6
43	48.8	0.488	20.7	20.1	0.6											127.0	1.270	17.9	19.4	-1.5	**0.4**	0.6
44	43.9	0.439	20.6	20.1	0.5											127.0	1.270	20.6	19.7	1.0	**0.4**	0.6
45	43.9	0.439	20.7	20.1	0.6											122.1	1.221	18.5	19.4	-0.9	**0.4**	0.6
46	39.1	0.391	20.5	20.0	0.5											122.1	1.221	19.5	19.5	0.0	**0.4**	0.6

Table A.3-2 continued...

47	39.1	0.391	20.7	20.1	0.6
48	39.1	0.391	20.6	20.1	0.5
49	34.2	0.342	20.7	20.0	0.7
50	34.2	0.342	20.7	20.0	0.7
51	29.3	0.293	20.7	20.0	0.7
52	29.3	0.293	20.6	19.9	0.7
53	29.3	0.293	20.7	20.0	0.7
54	29.3	0.293	20.6	19.9	0.7
55	24.4	0.244	20.7	20.1	0.6
56	24.4	0.244	20.7	20.1	0.6
57	24.4	0.244	20.6	20.1	0.5
58	19.5	0.195	20.7	20.1	0.6
59	19.5	0.195	20.6	20.0	0.6
60	19.5	0.195	20.7	20.1	0.6
61	19.5	0.195	20.7	20.1	0.6
62	14.6	0.146	20.7	20.1	0.6
63	14.6	0.146	20.7	20.1	0.6
64	14.6	0.146	20.7	20.0	0.7
65	14.6	0.146	20.7	20.1	0.6
66	14.6	0.146	20.7	20.0	0.7
67	14.6	0.146	20.6	20.0	0.6
68	9.8	0.098	20.7	20.1	0.6
69	9.8	0.098	20.7	20.1	0.6
70	9.8	0.098	20.7	20.1	0.6
71	9.8	0.098	20.7	20.1	0.6
72	9.8	0.098	20.6	20.0	0.6
73	9.8	0.098	20.7	20.1	0.6
74	9.8	0.098	20.7	20.1	0.6
75	9.8	0.098	20.6	20.1	0.5
76	9.8	0.098	20.7	20.1	0.6
77	4.9	0.049	20.7	20.1	0.6
78	4.9	0.049	20.7	20.1	0.6
79	4.9	0.049	20.7	20.1	0.6
80	4.9	0.049	20.7	20.1	0.6
81	4.9	0.049	20.7	20.1	0.6
82	4.9	0.049	20.7	20.1	0.6
83	4.9	0.049	20.7	20.1	0.6
84	4.9	0.049	20.7	20.1	0.6
85	4.9	0.049	20.7	20.1	0.6
86	4.9	0.049	20.7	20.1	0.6
87	4.9	0.049	20.7	20.1	0.6
88	4.9	0.049	20.7	20.1	0.6
89	4.9	0.049	20.7	20.1	0.6
90	4.9	0.049	20.7	20.3	0.5
91	4.9	0.049	20.7	20.1	0.6
92	0.0	0.000	20.7	20.1	0.6
93	0.0	0.000	20.7	20.1	0.6
94	0.0	0.000	20.7	20.1	0.6
95	0.0	0.000	20.7	20.1	0.6
96	0.0	0.000	20.7	20.1	0.6
97	0.0	0.000	20.7	20.1	0.6
98	0.0	0.000	20.7	20.1	0.6
99	0.0	0.000	20.7	20.1	0.6
100	0.0	0.000	20.7	20.1	0.6

117.2	1.172	21.3	19.5	1.8	**0.4**	0.6
117.2	1.172	20.0	19.4	0.6	**0.4**	0.6
112.3	1.123	21.1	19.8	1.3	**0.4**	0.5
112.3	1.123	20.3	19.6	0.7	**0.4**	0.5
112.3	1.123	18.6	19.5	-0.9	**0.4**	0.5
107.4	1.074	20.0	19.7	0.2	**0.3**	0.5
107.4	1.074	20.7	19.7	1.0	**0.3**	0.5
107.4	1.074	19.7	19.9	-0.1	**0.3**	0.5
102.5	1.025	21.1	19.9	1.2	**0.3**	0.5
102.5	1.025	19.4	19.9	-0.5	**0.3**	0.5
97.7	0.977	19.0	20.0	-1.0	**0.3**	0.5
97.7	0.977	20.7	20.0	0.7	**0.3**	0.5
97.7	0.977	18.0	20.0	-2.0	**0.3**	0.5
92.8	0.928	20.8	20.0	0.8	**0.3**	0.4
92.8	0.928	18.9	20.1	-1.2	**0.3**	0.4
92.8	0.928	20.7	20.0	0.7	**0.3**	0.4
87.9	0.879	20.0	19.9	0.1	**0.3**	0.4
87.9	0.879	19.4	19.9	-0.5	**0.3**	0.4
87.9	0.879	21.2	19.9	1.3	**0.3**	0.4
83.0	0.830	18.7	19.8	-1.1	**0.2**	0.4
83.0	0.830	19.4	19.9	-0.5	**0.2**	0.4
83.0	0.830	20.8	19.7	1.1	**0.2**	0.4
78.1	0.781	18.3	19.7	-1.3	**0.2**	0.4
78.1	0.781	19.7	19.6	0.1	**0.2**	0.4
78.1	0.781	21.2	19.5	1.7	**0.2**	0.4
73.2	0.732	19.1	19.4	-0.2	**0.2**	0.4
73.2	0.732	18.8	19.7	-0.9	**0.2**	0.4
73.2	0.732	20.0	19.4	0.6	**0.2**	0.4
73.2	0.732	17.9	19.4	-1.5	**0.2**	0.4
68.4	0.684	20.8	19.5	1.3	**0.2**	0.3
68.4	0.684	20.5	19.5	1.0	**0.2**	0.3
68.4	0.684	19.2	19.5	-0.2	**0.2**	0.3
68.4	0.684	21.2	19.6	1.6	**0.2**	0.3
68.4	0.684	19.7	19.3	0.4	**0.2**	0.3
63.5	0.635	18.0	19.6	-1.6	**0.2**	0.3
63.5	0.635	20.6	19.7	0.8	**0.2**	0.3
63.5	0.635	17.9	19.7	-1.8	**0.2**	0.3
58.6	0.586	19.1	19.9	-0.7	**0.2**	0.3
58.6	0.586	21.1	19.9	1.2	**0.2**	0.3
58.6	0.586	18.4	19.7	-1.3	**0.2**	0.3
58.6	0.586	19.1	19.9	-0.7	**0.2**	0.3
53.7	0.537	20.1	19.9	0.2	**0.1**	0.3
53.7	0.537	17.9	19.9	-2.0	**0.1**	0.3
53.7	0.537	20.1	19.9	0.2	**0.1**	0.3
53.7	0.537	21.3	20.0	1.3	**0.1**	0.3
53.7	0.537	18.4	19.7	-1.3	**0.1**	0.3
48.8	0.488	20.9	19.9	1.1	**0.1**	0.2
48.8	0.488	20.1	19.7	0.4	**0.1**	0.2
48.8	0.488	18.6	19.6	-1.0	**0.1**	0.2
48.8	0.488	19.7	19.6	0.1	**0.1**	0.2
48.8	0.488	20.8	19.6	1.2	**0.1**	0.2
48.8	0.488	20.1	19.7	0.5	**0.1**	0.2
48.8	0.488	20.8	19.5	1.3	**0.1**	0.2
48.8	0.488	18.5	19.4	-0.9	**0.1**	0.2

Table A.3-3 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 30 min.

Sample No.	G31-30					G32-30					G33-30					G34-30						
	Replicate No.																				Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(s)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	Mean	SD
0	253.9	2.539	21.6	21.4	0.1	253.9	2.539	21.0	22.3	-1.3	253.9	2.539	20.6	20.2	0.4	253.9	2.539	21.3	19.6	1.7	**2.5**	0.0
1	249.0	2.490	21.6	21.4	0.1	249.0	2.490	21.0	22.3	-1.3	249.0	2.490	20.9	20.3	0.6	253.9	2.539	18.8	19.6	-0.7	**2.5**	0.0
2	234.4	2.344	21.6	21.4	0.1	239.3	2.393	21.0	22.3	-1.3	239.3	2.393	20.8	20.3	0.5	249.0	2.490	20.6	19.4	1.2	**2.4**	0.1
3	229.5	2.295	21.6	21.4	0.1	224.6	2.246	20.7	22.0	-1.3	224.6	2.246	20.8	20.3	0.5	244.1	2.441	19.9	19.3	0.6	**2.3**	0.1
4	219.7	2.197	21.6	21.4	0.1	214.8	2.148	20.7	22.0	-1.3	214.8	2.148	20.8	20.3	0.5	239.3	2.393	18.3	19.1	-0.9	**2.2**	0.1
5	214.8	2.148	21.6	21.4	0.1	205.1	2.051	20.7	22.0	-1.3	205.1	2.051	20.8	20.3	0.5	239.3	2.393	20.2	19.3	1.0	**2.2**	0.2
6	205.1	2.051	21.6	21.4	0.1	195.3	1.953	20.8	22.2	-1.3	195.3	1.953	20.5	20.2	0.4	234.4	2.344	18.3	19.2	-0.9	**2.1**	0.2
7	200.2	2.002	21.6	21.3	0.2	185.5	1.855	20.6	22.0	-1.4	175.8	1.758	20.5	20.1	0.5	229.5	2.295	18.9	19.3	-0.4	**2.0**	0.2
8	195.3	1.953	21.6	21.4	0.1	175.8	1.758	20.7	22.0	-1.3	166.0	1.660	20.7	20.3	0.4	224.6	2.246	20.6	19.1	1.5	**1.9**	0.3
9	185.5	1.855	21.6	21.3	0.2	166.0	1.660	20.6	22.0	-1.4	151.4	1.514	20.8	20.3	0.5	224.6	2.246	18.2	19.2	-1.0	**1.8**	0.3
10	180.7	1.807	21.6	21.3	0.2	156.3	1.563	20.6	22.2	-1.6	141.6	1.416	20.8	20.2	0.6	219.7	2.197	17.7	19.3	-1.6	**1.7**	0.3
11	175.8	1.758	21.6	21.3	0.2	146.5	1.465	20.7	22.0	-1.3	127.0	1.270	20.9	20.3	0.6	214.8	2.148	20.1	19.3	0.9	**1.7**	0.4
12	166.0	1.660	21.7	21.6	0.1	136.7	1.367	20.7	22.0	-1.3	117.2	1.172	20.8	20.2	0.6	214.8	2.148	18.2	19.1	-1.0	**1.6**	0.4
13	161.1	1.611	21.7	21.6	0.1	127.0	1.270	20.8	22.0	-1.2	107.4	1.074	20.8	20.3	0.5	210.0	2.100	18.9	19.4	-0.5	**1.5**	0.4
14	156.3	1.563	21.6	21.4	0.1	122.1	1.221	20.7	22.0	-1.3	97.7	0.977	20.7	20.2	0.5	205.1	2.051	18.8	19.5	-0.7	**1.5**	0.5
15	151.4	1.514	21.6	21.3	0.2	112.3	1.123	20.7	22.0	-1.3	87.9	0.879	20.7	20.2	0.5	200.2	2.002	19.3	19.7	-0.4	**1.4**	0.5
16	146.5	1.465	21.7	21.5	0.2	107.4	1.074	20.8	22.0	-1.2	78.1	0.781	20.8	20.2	0.6	200.2	2.002	20.6	19.6	1.0	**1.3**	0.5
17	141.6	1.416	21.6	21.3	0.2	97.7	0.977	20.7	22.2	-1.4	68.4	0.684	20.8	20.2	0.6	195.3	1.953	20.0	19.5	0.5	**1.3**	0.6
18	136.7	1.367	21.6	21.3	0.2	92.8	0.928	20.8	22.0	-1.2	63.5	0.635	20.7	20.2	0.5	195.3	1.953	18.2	19.5	-1.3	**1.2**	0.6
19	127.0	1.270	21.6	21.3	0.2	83.0	0.830	20.7	22.0	-1.3	53.7	0.537	20.7	20.2	0.5	190.4	1.904	19.1	19.8	-0.6	**1.1**	0.6
20	122.1	1.221	21.6	21.4	0.1	78.1	0.781	20.7	22.0	-1.3	48.8	0.488	20.7	20.3	0.4	185.5	1.855	18.3	19.5	-1.2	**1.1**	0.6
21	112.3	1.123	21.6	21.3	0.2	73.2	0.732	20.7	22.0	-1.3	43.9	0.439	20.8	20.2	0.6	180.7	1.807	17.9	19.6	-1.7	**1.0**	0.6
22	107.4	1.074	21.6	21.4	0.1	63.5	0.635	20.8	22.2	-1.3	39.1	0.391	20.7	20.1	0.6	180.7	1.807	21.0	19.6	1.3	**1.0**	0.6
23	102.5	1.025	21.6	21.3	0.2	58.6	0.586	20.7	22.2	-1.4	34.2	0.342	20.8	20.2	0.6	175.8	1.758	19.9	19.5	0.4	**0.9**	0.6
24	97.7	0.977	21.6	21.4	0.1	53.7	0.537	20.7	22.0	-1.3	29.3	0.293	20.8	20.2	0.6	175.8	1.758	17.8	19.7	-1.8	**0.9**	0.6
25	97.7	0.977	21.6	21.4	0.1	48.8	0.488	20.8	22.2	-1.3	24.4	0.244	20.8	20.2	0.6	170.9	1.709	20.2	19.6	0.6	**0.9**	0.6
26	87.9	0.879	21.6	21.3	0.2	43.9	0.439	20.8	22.0	-1.2	19.5	0.195	20.8	20.2	0.6	166.0	1.660	18.2	19.4	-1.2	**0.8**	0.6
27	87.9	0.879	21.6	21.4	0.1	39.1	0.391	20.7	22.2	-1.4	19.5	0.195	20.8	20.2	0.6	166.0	1.660	18.8	19.4	-0.6	**0.8**	0.7
28	83.0	0.830	21.7	21.6	0.1	34.2	0.342	20.7	22.2	-1.4	14.6	0.146	20.8	20.2	0.6	161.1	1.611	20.5	19.4	1.1	**0.7**	0.7
29	78.1	0.781	21.6	21.4	0.1	29.3	0.293	20.8	22.2	-1.3	14.6	0.146	20.8	20.2	0.6	161.1	1.611	19.4	19.1	0.2	**0.7**	0.7
30	73.2	0.732	21.6	21.4	0.1	29.3	0.293	20.7	22.0	-1.3	9.8	0.098	20.8	20.2	0.6	156.3	1.563	20.5	19.4	1.1	**0.7**	0.7
31	68.4	0.684	21.6	21.4	0.1	24.4	0.244	20.7	22.0	-1.3	9.8	0.098	20.8	20.2	0.6	156.3	1.563	20.0	19.1	0.9	**0.6**	0.7
32	63.5	0.635	21.7	21.6	0.1	19.5	0.195	20.7	22.0	-1.3						151.4	1.514	18.0	19.1	-1.1	**0.6**	0.7
33	63.5	0.635	21.7	21.6	0.1	19.5	0.195	20.7	22.0	-1.3						151.4	1.514	19.8	19.3	0.5	**0.6**	0.7
34	58.6	0.586	21.6	21.4	0.1	14.6	0.146	20.8	22.0	-1.2						146.5	1.465	20.1	19.3	0.9	**0.5**	0.7
35	53.7	0.537	21.7	21.6	0.1	9.8	0.098	20.7	22.0	-1.3						146.5	1.465	18.8	19.3	-0.5	**0.5**	0.7
36	48.8	0.488	21.6	21.4	0.1	9.8	0.098	20.7	22.0	-1.3						141.6	1.416	20.6	19.4	1.2	**0.5**	0.6
37	48.8	0.488	21.6	21.6	0.0	4.9	0.049	20.8	22.0	-1.2						141.6	1.416	19.2	19.6	-0.4	**0.5**	0.7
38	43.9	0.439	21.6	21.4	0.1	4.9	0.049	20.7	22.0	-1.3						136.7	1.367	17.8	19.4	-1.6	**0.5**	0.6
39	39.1	0.391	21.6	21.4	0.1	4.9	0.049	20.7	22.2	-1.4						136.7	1.367	20.5	19.5	1.0	**0.5**	0.6
40	39.1	0.391	21.6	21.6	0.0	0.0	0.000	20.7	22.2	-1.4						131.8	1.318	18.2	19.5	-1.3	**0.4**	0.6
41	39.1	0.391	21.7	21.6	0.1											131.8	1.318	18.8	19.6	-0.9	**0.4**	0.6
42	34.2	0.342	21.6	21.4	0.1											127.0	1.270	20.6	19.8	0.8	**0.4**	0.6
43	29.3	0.293	21.6	21.4	0.1											127.0	1.270	19.9	19.6	0.2	**0.4**	0.6
44	24.4	0.244	21.6	21.4	0.1											122.1	1.221	17.7	19.6	-2.0	**0.4**	0.6
45	24.4	0.244	21.7	21.6	0.1											122.1	1.221	20.9	19.8	1.1	**0.4**	0.6
46	19.5	0.195	21.7	21.7	0.0											117.2	1.172	18.0	19.6	-1.6	**0.3**	0.6

Table A.3-3 continued...

47	19.5	0.195	21.7	21.7	0.0
48	19.5	0.195	21.6	21.6	0.0
49	14.6	0.146	21.6	21.6	0.0
50	14.6	0.146	21.6	21.4	0.1
51	9.8	0.098	21.4	21.4	0.0
52	9.8	0.098	21.7	21.7	0.0
53	4.9	0.049	21.6	21.6	0.0
54	4.9	0.049	21.6	21.4	0.1
55	4.9	0.049	21.7	21.6	0.1
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117.2	1.172	18.8	19.6	-0.9	**0.3**	0.6
117.2	1.172	20.7	19.9	0.7	**0.3**	0.6
112.3	1.123	17.8	19.7	-1.8	**0.3**	0.5
112.3	1.123	19.4	19.6	-0.2	**0.3**	0.5
107.4	1.074	20.7	19.5	1.2	**0.3**	0.5
107.4	1.074	18.5	19.4	-1.0	**0.3**	0.5
107.4	1.074	18.9	19.4	-0.5	**0.3**	0.5
102.5	1.025	19.4	19.1	0.2	**0.3**	0.5
102.5	1.025	18.0	19.1	-1.1	**0.3**	0.5
97.7	0.977	19.9	19.4	0.5	**0.2**	0.5
97.7	0.977	20.0	19.1	0.9	**0.2**	0.5
97.7	0.977	18.2	19.1	-1.0	**0.2**	0.5
92.8	0.928	21.1	19.4	1.7	**0.2**	0.5
92.8	0.928	18.0	19.1	-1.1	**0.2**	0.5
92.8	0.928	20.9	19.6	1.3	**0.2**	0.5
87.9	0.879	19.4	19.4	0.0	**0.2**	0.4
87.9	0.879	18.2	19.6	-1.3	**0.2**	0.4
87.9	0.879	20.5	19.6	1.0	**0.2**	0.4
83.0	0.830	17.8	19.5	-1.7	**0.2**	0.4
83.0	0.830	20.0	19.6	0.4	**0.2**	0.4
83.0	0.830	18.2	19.5	-1.3	**0.2**	0.4
83.0	0.830	20.4	19.5	0.9	**0.2**	0.4
78.1	0.781	20.7	19.6	1.1	**0.2**	0.4
78.1	0.781	20.0	19.5	0.5	**0.2**	0.4
73.2	0.732	18.2	19.5	-1.3	**0.2**	0.4
73.2	0.732	18.9	19.8	-0.9	**0.2**	0.4
73.2	0.732	21.4	19.7	1.7	**0.2**	0.4
73.2	0.732	18.0	19.5	-1.5	**0.2**	0.4
68.4	0.684	20.5	19.5	1.0	**0.2**	0.3
68.4	0.684	20.2	19.6	0.6	**0.2**	0.3
68.4	0.684	17.8	19.1	-1.3	**0.2**	0.3
63.5	0.635	21.3	19.4	1.8	**0.2**	0.3
63.5	0.635	18.0	19.0	-1.0	**0.2**	0.3
63.5	0.635	19.1	19.4	-0.4	**0.2**	0.3
63.5	0.635	20.5	19.1	1.3	**0.2**	0.3
63.5	0.635	20.2	19.3	0.9	**0.2**	0.3
58.6	0.586	19.5	19.3	0.2	**0.1**	0.3
58.6	0.586	21.7	19.1	2.5	**0.1**	0.3
58.6	0.586	18.4	19.1	-0.7	**0.1**	0.3
58.6	0.586	18.8	19.3	-0.5	**0.1**	0.3
58.6	0.586	20.4	19.4	1.0	**0.1**	0.3
53.7	0.537	17.5	19.3	-1.7	**0.1**	0.3
53.7	0.537	19.5	19.5	0.0	**0.1**	0.3
53.7	0.537	19.8	19.4	0.4	**0.1**	0.3
53.7	0.537	18.2	19.4	-1.2	**0.1**	0.3
48.8	0.488	18.9	19.6	-0.7	**0.1**	0.2
48.8	0.488	19.0	19.6	-0.6	**0.1**	0.2
48.8	0.488	17.8	19.6	-1.8	**0.1**	0.2
48.8	0.488	20.5	19.9	0.6	**0.1**	0.2
43.9	0.439	20.6	19.8	0.8	**0.1**	0.2
43.9	0.439	17.9	19.6	-1.7	**0.1**	0.2
43.9	0.439	20.8	19.8	1.1	**0.1**	0.2
43.9	0.439	18.2	19.6	-1.5	**0.1**	0.2
43.9	0.439	18.8	19.6	-0.9	**0.1**	0.2

Table A.3-4 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was filled with wheat (11.8% m.c.) and carbon dioxide purging time was 60 min.

Sample No.	G31-60					Replicate No. G32-60					G33-60					G34-60						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(s)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	23.8	23.3	0.5	253.9	2.539	22.1	22.8	-0.7	253.9	2.539	21.3	20.5	0.8	253.9	2.539	19.1	19.4	-0.2	**2.5**	0.0
1	244.1	2.441	23.8	23.3	0.5	249.0	2.490	22.1	22.8	-0.7	249.0	2.490	21.2	20.5	0.7	253.9	2.539	20.1	19.4	0.7	**2.5**	0.0
2	239.3	2.393	23.8	23.3	0.5	239.3	2.393	22.0	22.7	-0.7	234.4	2.344	21.2	20.5	0.7	249.0	2.490	20.6	19.4	1.2	**2.4**	0.1
3	229.5	2.295	23.8	23.2	0.6	224.6	2.246	22.1	22.7	-0.6	219.7	2.197	21.4	20.7	0.7	244.1	2.441	18.2	19.3	-1.1	**2.3**	0.1
4	219.7	2.197	23.8	23.2	0.6	214.8	2.148	22.0	22.8	-0.8	205.1	2.051	21.3	20.7	0.6	239.3	2.393	18.8	19.5	-0.7	**2.2**	0.1
5	214.8	2.148	23.8	23.2	0.6	205.1	2.051	22.1	22.7	-0.6	190.4	1.904	21.2	20.5	0.7	234.4	2.344	21.1	19.7	1.4	**2.1**	0.2
6	210.0	2.100	23.8	23.2	0.6	195.3	1.953	22.0	22.7	-0.7	175.8	1.758	21.2	20.5	0.7	234.4	2.344	17.9	19.5	-1.6	**2.0**	0.2
7	200.2	2.002	23.8	23.2	0.6	185.5	1.855	22.0	22.7	-0.7	161.1	1.611	21.2	20.5	0.7	229.5	2.295	19.6	19.6	0.0	**1.9**	0.3
8	195.3	1.953	23.8	23.2	0.6	175.8	1.758	21.9	22.8	-1.0	146.5	1.465	21.5	20.7	0.8	224.6	2.246	20.1	19.6	0.5	**1.9**	0.3
9	190.4	1.904	23.8	23.2	0.6	166.0	1.660	22.0	22.7	-0.7	136.7	1.367	21.2	20.5	0.7	219.7	2.197	18.3	19.6	-1.3	**1.8**	0.4
10	180.7	1.807	23.8	23.2	0.6	156.3	1.563	22.1	22.7	-0.6	127.0	1.270	21.2	20.5	0.7	214.8	2.148	19.1	19.9	-0.9	**1.7**	0.4
11	175.8	1.758	23.8	23.2	0.6	146.5	1.465	22.0	22.7	-0.7	112.3	1.123	21.3	20.5	0.8	214.8	2.148	20.0	19.8	0.2	**1.6**	0.4
12	175.8	1.758	23.8	23.2	0.6	141.6	1.416	22.0	22.7	-0.7	102.5	1.025	21.3	20.5	0.8	210.0	2.100	17.9	19.8	-1.8	**1.6**	0.5
13	166.0	1.660	23.8	23.3	0.5	131.8	1.318	22.3	22.9	-0.6	92.8	0.928	21.3	20.7	0.6	205.1	2.051	20.3	19.7	0.6	**1.5**	0.5
14	161.1	1.611	23.8	23.2	0.6	122.1	1.221	22.1	22.7	-0.6	83.0	0.830	21.2	20.5	0.7	200.2	2.002	18.2	19.6	-1.5	**1.4**	0.5
15	156.3	1.563	23.8	23.2	0.6	117.2	1.172	22.0	22.7	-0.7	73.2	0.732	21.3	20.7	0.6	200.2	2.002	18.0	19.6	-1.6	**1.4**	0.5
16	151.4	1.514	23.8	23.2	0.6	107.4	1.074	22.1	22.7	-0.6	68.4	0.684	21.2	20.5	0.7	195.3	1.953	21.2	19.9	1.3	**1.3**	0.5
17	146.5	1.465	23.8	23.2	0.6	102.5	1.025	22.3	22.9	-0.6	58.6	0.586	21.3	20.5	0.8	190.4	1.904	19.8	19.5	0.2	**1.2**	0.6
18	141.6	1.416	23.8	23.2	0.6	92.8	0.928	22.0	22.7	-0.7	53.7	0.537	21.2	20.5	0.7	190.4	1.904	17.9	19.5	-1.6	**1.2**	0.6
19	136.7	1.367	23.8	23.2	0.6	87.9	0.879	22.1	22.7	-0.6	43.9	0.439	21.2	20.5	0.7	185.5	1.855	20.6	19.6	1.0	**1.1**	0.6
20	131.8	1.318	23.8	23.2	0.6	83.0	0.830	22.1	22.7	-0.6	39.1	0.391	21.2	20.5	0.7	180.7	1.807	18.0	19.3	-1.2	**1.1**	0.6
21	127.0	1.270	23.8	23.2	0.6	73.2	0.732	22.1	22.7	-0.6	34.2	0.342	21.4	20.7	0.7	180.7	1.807	19.3	19.6	-0.2	**1.0**	0.6
22	122.1	1.221	23.8	23.2	0.6	68.4	0.684	22.0	22.7	-0.7	29.3	0.293	21.4	20.7	0.7	175.8	1.758	21.0	19.3	1.7	**1.0**	0.6
23	117.2	1.172	23.8	23.2	0.6	63.5	0.635	22.0	22.7	-0.7	24.4	0.244	21.5	20.7	0.8	170.9	1.709	18.3	19.0	-0.7	**0.9**	0.6
24	117.2	1.172	23.8	23.2	0.6	58.6	0.586	22.1	22.7	-0.6	19.5	0.195	21.3	20.5	0.8	170.9	1.709	18.5	18.8	-0.4	**0.9**	0.7
25	112.3	1.123	23.8	23.2	0.6	53.7	0.537	22.1	22.7	-0.6	19.5	0.195	21.2	20.5	0.7	166.0	1.660	20.0	19.0	1.0	**0.9**	0.6
26	107.4	1.074	23.8	23.2	0.6	48.8	0.488	22.1	22.7	-0.6	14.6	0.146	21.2	20.5	0.7	166.0	1.660	18.0	18.9	-0.9	**0.8**	0.7
27	102.5	1.025	23.8	23.2	0.6	43.9	0.439	21.9	22.7	-0.8	9.8	0.098	21.3	20.5	0.8	161.1	1.611	20.4	19.0	1.3	**0.8**	0.7
28	97.7	0.977	23.8	23.2	0.6	39.1	0.391	22.1	22.7	-0.6	9.8	0.098	21.3	20.5	0.8	156.3	1.563	20.3	18.9	1.3	**0.8**	0.6
29	92.8	0.928	23.8	23.2	0.6	34.2	0.342	22.0	22.7	-0.7	9.8	0.098	21.2	20.5	0.7	151.4	1.514	18.2	18.8	-0.6	**0.7**	0.6
30	87.9	0.879	23.8	23.2	0.6	29.3	0.293	22.1	22.7	-0.6	4.9	0.049	21.3	20.5	0.8	151.4	1.514	20.8	18.9	1.9	**0.7**	0.7
31	83.0	0.830	23.8	23.2	0.6	24.4	0.244	22.1	22.7	-0.6	4.9	0.049	21.2	20.5	0.7	151.4	1.514	18.4	18.8	-0.4	**0.7**	0.7
32	83.0	0.830	23.8	23.2	0.6	19.5	0.195	22.1	22.7	-0.6						146.5	1.465	18.6	18.8	-0.2	**0.6**	0.7
33	78.1	0.781	23.8	23.2	0.6	19.5	0.195	22.0	22.7	-0.7						141.6	1.416	20.6	19.0	1.6	**0.6**	0.6
34	73.2	0.732	23.8	23.2	0.6	14.6	0.146	22.0	22.7	-0.7						141.6	1.416	20.1	19.0	1.1	**0.6**	0.6
35	73.2	0.732	23.9	23.2	0.7	14.6	0.146	22.1	22.7	-0.6						141.6	1.416	20.2	19.1	1.1	**0.6**	0.6
36	68.4	0.684	23.8	23.2	0.6	9.8	0.098	21.8	22.7	-1.0						136.7	1.367	20.4	19.1	1.2	**0.5**	0.6
37	63.5	0.635	23.8	23.3	0.5	9.8	0.098	22.0	22.7	-0.7						131.8	1.318	18.3	19.1	-0.9	**0.5**	0.6
38	63.5	0.635	23.8	23.3	0.5	4.9	0.049	22.2	22.9	-0.7						131.8	1.318	18.9	19.4	-0.5	**0.5**	0.6
39	58.6	0.586	23.8	23.3	0.5	4.9	0.049	22.0	22.9	-0.8						127.0	1.270	20.6	19.4	1.2	**0.5**	0.6
40	58.6	0.586	23.8	23.3	0.5											127.0	1.270	21.0	19.4	1.6	**0.5**	0.6
41	58.6	0.586	23.8	23.3	0.5											122.1	1.221	19.9	19.5	0.4	**0.5**	0.6
42	53.7	0.537	23.8	23.3	0.5											122.1	1.221	20.8	19.4	1.5	**0.4**	0.6
43	48.8	0.488	23.8	23.3	0.5											117.2	1.172	18.2	19.4	-1.2	**0.4**	0.6
44	48.8	0.488	23.8	23.3	0.5											117.2	1.172	18.8	19.6	-0.9	**0.4**	0.6
45	43.9	0.439	23.8	23.3	0.5											112.3	1.123	18.2	19.2	-1.0	**0.4**	0.5
46	43.9	0.439	23.9	23.3	0.6											112.3	1.123	18.4	19.5	-1.1	**0.4**	0.5

Table A.3-4 continued...

47	43.9	0.439	23.8	23.3	0.5
48	39.1	0.391	23.8	23.3	0.5
49	39.1	0.391	23.8	23.3	0.5
50	34.2	0.342	23.8	23.3	0.5
51	34.2	0.342	23.8	23.3	0.5
52	29.3	0.293	23.8	23.3	0.5
53	29.3	0.293	23.8	23.3	0.5
54	29.3	0.293	23.8	23.3	0.5
55	24.4	0.244	23.9	23.3	0.6
56	24.4	0.244	23.8	23.3	0.5
57	24.4	0.244	23.8	23.3	0.5
58	19.5	0.195	23.8	23.3	0.5
59	19.5	0.195	23.8	23.3	0.5
60	19.5	0.195	23.8	23.3	0.5
61	19.5	0.195	23.8	23.3	0.5
62	14.6	0.146	23.8	23.3	0.5
63	14.6	0.146	23.8	23.3	0.5
64	14.6	0.146	23.8	23.3	0.5
65	14.6	0.146	23.8	23.3	0.5
66	14.6	0.146	23.8	23.3	0.5
67	9.8	0.098	23.8	23.3	0.5
68	9.8	0.098	23.8	23.3	0.5
69	9.8	0.098	23.8	23.2	0.6
70	9.8	0.098	23.8	23.2	0.6
71	4.9	0.049	23.8	23.2	0.6
72	4.9	0.049	23.8	23.2	0.6
73	4.9	0.049	23.8	23.2	0.6
74	4.9	0.049	23.8	23.2	0.6
75	4.9	0.049	23.8	23.2	0.6
76	4.9	0.049	23.8	23.2	0.6
77	4.9	0.049	23.8	23.2	0.6
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100					

112.3	1.123	20.6	19.6	1.0	**0.4**	0.5
107.4	1.074	19.8	19.4	0.4	**0.4**	0.5
107.4	1.074	19.5	19.5	0.0	**0.4**	0.5
102.5	1.025	20.8	19.4	1.5	**0.3**	0.5
102.5	1.025	18.7	19.3	-0.6	**0.3**	0.5
97.7	0.977	18.8	19.3	-0.5	**0.3**	0.5
97.7	0.977	20.7	19.3	1.5	**0.3**	0.5
97.7	0.977	17.9	19.1	-1.2	**0.3**	0.5
92.8	0.928	20.2	19.1	1.1	**0.3**	0.4
92.8	0.928	20.5	19.0	1.5	**0.3**	0.4
92.8	0.928	17.9	19.0	-1.1	**0.3**	0.4
87.9	0.879	19.8	19.1	0.6	**0.3**	0.4
87.9	0.879	19.1	19.0	0.1	**0.3**	0.4
83.0	0.830	18.7	19.0	-0.2	**0.3**	0.4
83.0	0.830	18.2	19.1	-1.0	**0.3**	0.4
83.0	0.830	18.6	19.1	-0.5	**0.2**	0.4
78.1	0.781	21.0	19.3	1.7	**0.2**	0.4
78.1	0.781	18.1	19.1	-1.0	**0.2**	0.4
78.1	0.781	20.6	19.5	1.1	**0.2**	0.4
73.2	0.732	19.7	19.2	0.5	**0.2**	0.3
73.2	0.732	17.7	19.2	-1.5	**0.2**	0.4
73.2	0.732	20.0	19.6	0.4	**0.2**	0.4
73.2	0.732	18.2	19.5	-1.3	**0.2**	0.4
68.4	0.684	17.8	19.5	-1.7	**0.2**	0.3
68.4	0.684	20.7	19.6	1.1	**0.2**	0.3
68.4	0.684	20.4	19.6	0.7	**0.2**	0.3
63.5	0.635	17.7	19.3	-1.6	**0.2**	0.3
63.5	0.635	20.5	19.5	1.0	**0.2**	0.3
63.5	0.635	18.0	19.2	-1.2	**0.2**	0.3
58.6	0.586	17.8	19.4	-1.6	**0.2**	0.3
58.6	0.586	20.0	19.2	0.7	**0.2**	0.3
58.6	0.586	18.0	19.0	-1.0	**0.1**	0.3
53.7	0.537	19.0	19.4	-0.4	**0.1**	0.3
53.7	0.537	20.0	19.1	0.9	**0.1**	0.3
53.7	0.537	17.9	19.0	-1.1	**0.1**	0.3
53.7	0.537	18.0	19.0	-1.0	**0.1**	0.3
48.8	0.488	19.6	19.0	0.6	**0.1**	0.2
48.8	0.488	17.7	18.8	-1.1	**0.1**	0.2
48.8	0.488	20.4	19.1	1.2	**0.1**	0.2
48.8	0.488	20.0	18.8	1.1	**0.1**	0.2
48.8	0.488	17.9	19.0	-1.1	**0.1**	0.2
48.8	0.488	20.8	19.1	1.7	**0.1**	0.2
43.9	0.439	18.3	19.1	-0.9	**0.1**	0.2
43.9	0.439	17.7	19.0	-1.2	**0.1**	0.2
43.9	0.439	20.6	19.4	1.2	**0.1**	0.2
43.9	0.439	19.3	19.3	0.0	**0.1**	0.2
39.1	0.391	19.8	19.5	0.2	**0.1**	0.2
39.1	0.391	20.5	19.5	1.0	**0.1**	0.2
39.1	0.391	18.0	19.5	-1.5	**0.1**	0.2
34.2	0.342	19.3	19.5	-0.1	**0.1**	0.2
34.2	0.342	20.7	19.6	1.1	**0.1**	0.2
34.2	0.342	18.6	19.5	-0.9	**0.1**	0.2
34.2	0.342	20.6	19.8	0.8	**0.1**	0.2
34.2	0.342	19.3	19.5	-0.2	**0.1**	0.2

Table A.3-5 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was empty and no carbon dioxide was added.

Sample No.	E31-0					E32-0					E33-0					E34-0					Replicate No.	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(s)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	258.8	2.588	23.3	22.2	1.1	253.9	2.539	24.6	24.6	0.0	253.9	2.539	25.3	24.3	1.0	253.9	2.539	20.4	20.3	0.1	**2.6**	0.0
1	249.0	2.490	23.3	22.1	1.2	249.0	2.490	24.6	24.7	-0.1	249.0	2.490	25.3	24.3	1.0	253.9	2.539	20.0	20.1	-0.1	**2.5**	0.0
2	244.1	2.441	23.3	22.1	1.2	244.1	2.441	24.6	24.6	0.0	234.4	2.344	25.5	24.5	1.0	249.0	2.490	20.3	20.3	0.0	**2.4**	0.1
3	239.3	2.393	23.1	22.1	1.1	234.4	2.344	24.2	24.7	-0.5	224.6	2.246	25.2	24.3	0.8	249.0	2.490	20.2	20.2	0.0	**2.4**	0.1
4	234.4	2.344	23.1	22.1	1.1	229.5	2.295	24.5	24.6	-0.1	210.0	2.100	25.3	24.3	1.0	244.1	2.441	20.2	20.0	0.1	**2.3**	0.1
5	229.5	2.295	23.1	21.9	1.2	219.7	2.197	24.6	24.6	0.0	200.2	2.002	25.3	24.5	0.8	239.3	2.393	20.0	20.0	0.0	**2.2**	0.2
6	224.6	2.246	23.1	22.1	1.1	210.0	2.100	24.6	24.7	-0.1	190.4	1.904	25.3	24.3	1.0	239.3	2.393	20.2	20.0	0.1	**2.2**	0.2
7	219.7	2.197	23.1	22.1	1.1	205.1	2.051	24.5	24.6	-0.1	180.7	1.807	25.1	24.3	0.7	234.4	2.344	20.2	20.2	0.0	**2.1**	0.2
8	214.8	2.148	23.1	22.1	1.1	195.3	1.953	24.5	24.7	-0.2	170.9	1.709	25.2	24.3	0.8	234.4	2.344	20.1	20.0	0.1	**2.0**	0.3
9	210.0	2.100	23.1	22.1	1.1	190.4	1.904	24.6	24.7	-0.1	166.0	1.660	25.2	24.3	0.8	234.4	2.344	20.0	19.9	0.1	**2.0**	0.3
10	205.1	2.051	23.1	22.1	1.1	185.5	1.855	24.5	24.7	-0.2	156.3	1.563	25.1	24.3	0.7	229.5	2.295	19.9	19.9	0.0	**1.9**	0.3
11	200.2	2.002	23.3	22.1	1.2	175.8	1.758	24.5	24.6	-0.1	146.5	1.465	25.1	24.3	0.7	229.5	2.295	20.0	19.8	0.2	**1.9**	0.4
12	195.3	1.953	23.1	22.1	1.1	170.9	1.709	24.5	24.6	-0.1	141.6	1.416	25.2	24.3	0.8	224.6	2.246	20.0	19.9	0.1	**1.8**	0.4
13	195.3	1.953	23.1	22.1	1.1	166.0	1.660	24.4	24.6	-0.2	131.8	1.318	25.1	24.3	0.7	219.7	2.197	20.0	19.9	0.1	**1.8**	0.4
14	190.4	1.904	23.3	22.1	1.2	156.3	1.563	24.1	24.6	-0.5	127.0	1.270	25.1	24.3	0.7	219.7	2.197	20.0	19.9	0.1	**1.7**	0.4
15	185.5	1.855	23.1	22.1	1.1	151.4	1.514	24.5	24.6	-0.1	117.2	1.172	25.1	24.3	0.7	219.7	2.197	19.9	19.8	0.1	**1.7**	0.4
16	180.7	1.807	23.1	22.1	1.1	146.5	1.465	24.5	24.8	-0.2	112.3	1.123	24.9	24.3	0.6	214.8	2.148	20.2	20.0	0.1	**1.6**	0.4
17	175.8	1.758	23.1	22.2	1.0	141.6	1.416	24.5	24.8	-0.2	107.4	1.074	24.9	24.3	0.6	214.8	2.148	19.9	19.9	0.0	**1.6**	0.5
18	175.8	1.758	23.3	22.2	1.1	136.7	1.367	24.6	24.8	-0.1	97.7	0.977	24.9	24.3	0.6	210.0	2.100	20.0	20.2	-0.1	**1.6**	0.5
19	170.9	1.709	23.1	22.2	1.0	131.8	1.318	24.2	24.6	-0.4	92.8	0.928	24.9	24.3	0.6	210.0	2.100	20.2	20.3	-0.1	**1.5**	0.5
20	166.0	1.660	23.1	22.2	1.0	127.0	1.270	24.8	24.9	-0.1	87.9	0.879	24.9	24.3	0.6	210.0	2.100	19.9	20.0	-0.1	**1.5**	0.5
21	161.1	1.611	23.1	22.2	1.0	117.2	1.172	24.6	24.8	-0.1	83.0	0.830	24.8	24.3	0.5	205.1	2.051	20.0	20.1	-0.1	**1.4**	0.5
22	161.1	1.611	23.1	22.2	1.0	117.2	1.172	24.4	24.8	-0.4	78.1	0.781	24.8	24.3	0.5	200.2	2.002	20.0	20.0	0.0	**1.4**	0.5
23	156.3	1.563	23.1	22.2	1.0	112.3	1.123	24.4	24.8	-0.4	73.2	0.732	24.9	24.3	0.6	200.2	2.002	19.9	20.2	-0.2	**1.4**	0.5
24	151.4	1.514	23.3	22.2	1.1	107.4	1.074	24.4	24.6	-0.2	68.4	0.684	24.8	24.3	0.5	200.2	2.002	20.2	20.2	0.0	**1.3**	0.6
25	151.4	1.514	23.1	22.1	1.1	102.5	1.025	24.4	24.6	-0.2	63.5	0.635	24.8	24.3	0.5	195.3	1.953	19.9	19.9	0.0	**1.3**	0.6
26	146.5	1.465	23.1	22.1	1.1	97.7	0.977	24.4	24.8	-0.4	58.6	0.586	25.0	24.5	0.5	195.3	1.953	19.8	20.0	-0.2	**1.2**	0.6
27	141.6	1.416	23.1	22.2	1.0	92.8	0.928	24.4	24.8	-0.4	53.7	0.537	24.9	24.5	0.4	190.4	1.904	20.2	20.0	0.1	**1.2**	0.6
28	141.6	1.416	23.0	22.1	1.0	87.9	0.879	24.2	24.6	-0.4	48.8	0.488	24.9	24.5	0.4	190.4	1.904	19.9	19.9	0.0	**1.2**	0.6
29	136.7	1.367	23.1	22.1	1.1	83.0	0.830	24.3	24.8	-0.5	48.8	0.488	24.7	24.3	0.4	190.4	1.904	19.8	19.9	-0.1	**1.1**	0.6
30	136.7	1.367	23.0	21.9	1.1	78.1	0.781	24.1	24.6	-0.5	43.9	0.439	24.7	24.3	0.4	185.5	1.855	19.9	19.9	0.0	**1.1**	0.6
31	131.8	1.318	23.0	22.1	1.0	73.2	0.732	24.3	24.8	-0.5	39.1	0.391	24.9	24.6	0.2	185.5	1.855	19.8	19.9	-0.1	**1.1**	0.6
32	127.0	1.270	23.1	22.1	1.1	73.2	0.732	24.3	24.8	-0.5	39.1	0.391	24.7	24.3	0.4	185.5	1.855	20.0	20.0	0.0	**1.1**	0.6
33	127.0	1.270	23.1	21.9	1.2	68.4	0.684	24.2	24.8	-0.6	34.2	0.342	24.7	24.3	0.4	180.7	1.807	19.9	19.8	0.1	**1.0**	0.6
34	122.1	1.221	23.1	22.1	1.1	68.4	0.684	24.0	24.7	-0.7	29.3	0.293	24.7	24.3	0.4	180.7	1.807	19.8	19.8	0.0	**1.0**	0.7
35	122.1	1.221	23.1	22.1	1.1	63.5	0.635	24.0	24.6	-0.6	29.3	0.293	24.6	24.3	0.2	180.7	1.807	19.9	19.8	0.1	**1.0**	0.7
36	117.2	1.172	23.1	22.1	1.1	58.6	0.586	24.0	24.7	-0.7	24.4	0.244	24.7	24.3	0.4	175.8	1.758	19.8	19.8	0.0	**0.9**	0.7
37	117.2	1.172	23.1	22.1	1.1	58.6	0.586	24.0	24.7	-0.7	24.4	0.244	24.7	24.5	0.2	175.8	1.758	19.8	19.8	0.0	**0.9**	0.7
38	112.3	1.123	23.1	22.1	1.1	53.7	0.537	23.9	24.6	-0.7	19.5	0.195	24.7	24.3	0.4	175.8	1.758	19.9	19.8	0.1	**0.9**	0.7
39	112.3	1.123	23.1	22.1	1.1	48.8	0.488	24.1	24.6	-0.5	19.5	0.195	24.6	24.5	0.1	170.9	1.709	19.8	19.8	0.0	**0.9**	0.7
40	107.4	1.074	23.1	21.9	1.2	48.8	0.488	24.2	24.8	-0.6	19.5	0.195	24.6	24.3	0.2	170.9	1.709	20.0	19.9	0.1	**0.9**	0.7
41	107.4	1.074	23.0	21.9	1.1	43.9	0.439	24.0	24.8	-0.7	14.6	0.146	24.6	24.5	0.1	170.9	1.709	19.8	19.8	0.0	**0.8**	0.7
42	102.5	1.025	23.1	22.1	1.1	43.9	0.439	24.2	24.9	-0.7	14.6	0.146	24.9	24.5	0.4	166.0	1.660	19.6	19.8	-0.1	**0.8**	0.7
43	102.5	1.025	23.1	22.1	1.1	39.1	0.391	24.2	24.8	-0.6	14.6	0.146	24.6	24.5	0.1	166.0	1.660	19.8	19.9	-0.1	**0.8**	0.7
44	97.7	0.977	23.0	22.1	1.0	39.1	0.391	24.2	24.8	-0.6	9.8	0.098	24.6	24.3	0.2	161.1	1.611	19.9	19.9	0.0	**0.8**	0.7
45	97.7	0.977	23.0	22.1	1.0	34.2	0.342	24.0	24.8	-0.7	9.8	0.098	24.6	24.3	0.2	161.1	1.611	19.8	19.9	-0.1	**0.8**	0.7
46	92.8	0.928	23.0	22.1	1.0	34.2	0.342	24.0	24.8	-0.7	9.8	0.098	24.7	24.5	0.2	161.1	1.611	19.8	19.9	-0.1	**0.7**	0.7

Table A.3-5 continued...

47	92.8	0.928	23.1	22.1	1.1	34.2	0.342	24.0	24.8	-0.7	9.8	0.098	24.7	24.5	0.2	161.1	1.611	19.6	19.9	-0.2	**0.7**	0.7
48	87.9	0.879	23.0	22.1	1.0	29.3	0.293	24.2	24.8	-0.6	9.8	0.098	24.9	24.5	0.4	156.3	1.563	19.6	19.9	-0.2	**0.7**	0.7
49	87.9	0.879	23.0	22.1	1.0	29.3	0.293	24.2	24.8	-0.6	4.9	0.049	24.7	24.5	0.2	156.3	1.563	19.7	19.9	-0.2	**0.7**	0.7
50	87.9	0.879	23.0	22.1	1.0	24.4	0.244	24.0	24.8	-0.7	4.9	0.049	24.7	24.5	0.2	156.3	1.563	19.8	20.0	-0.2	**0.7**	0.7
51	83.0	0.830	23.0	22.1	1.0	24.4	0.244	24.2	24.8	-0.6	4.9	0.049	24.7	24.6	0.1	151.4	1.514	19.8	19.9	-0.1	**0.7**	0.7
52	83.0	0.830	23.1	22.1	1.1	24.4	0.244	24.0	24.8	-0.7	4.9	0.049	24.7	24.6	0.1	151.4	1.514	19.7	19.8	-0.1	**0.7**	0.7
53	78.1	0.781	23.0	21.9	1.1	19.5	0.195	24.3	24.9	-0.6	4.9	0.049	24.9	24.6	0.2	151.4	1.514	19.7	20.0	-0.4	**0.6**	0.7
54	78.1	0.781	23.0	21.8	1.2	19.5	0.195	24.2	24.8	-0.6	4.9	0.049	24.7	24.6	0.1	146.5	1.465	19.7	19.8	-0.1	**0.6**	0.6
55	78.1	0.781	23.0	22.1	1.0	19.5	0.195	24.2	24.8	-0.6	4.9	0.049	24.7	24.6	0.1	146.5	1.465	19.8	19.9	-0.1	**0.6**	0.6
56	73.2	0.732	23.0	22.1	1.0	14.6	0.146	24.2	24.8	-0.6	4.9	0.049	24.7	24.6	0.1	146.5	1.465	19.8	19.9	-0.1	**0.6**	0.7
57	73.2	0.732	23.0	22.1	1.0	14.6	0.146	24.0	24.8	-0.7	0.0	0.000	24.9	24.6	0.2	146.5	1.465	19.7	19.7	0.0	**0.6**	0.7
58	73.2	0.732	23.0	22.1	1.0	14.6	0.146	24.3	24.9	-0.6						141.6	1.416	19.6	19.8	-0.2	**0.6**	0.6
59	68.4	0.684	23.0	22.1	1.0	14.6	0.146	24.3	24.8	-0.5						141.6	1.416	19.6	19.7	-0.1	**0.6**	0.6
60	68.4	0.684	23.0	22.1	1.0	14.6	0.146	23.9	24.9	-1.0						141.6	1.416	19.7	19.9	-0.2	**0.6**	0.6
61	68.4	0.684	23.0	22.1	1.0	9.8	0.098	24.0	24.8	-0.7						141.6	1.416	19.6	19.7	-0.1	**0.5**	0.7
62	63.5	0.635	23.0	22.1	1.0	9.8	0.098	24.0	24.9	-0.8						136.7	1.367	19.7	19.9	-0.2	**0.5**	0.6
63	63.5	0.635	23.0	22.1	1.0	9.8	0.098	24.0	24.7	-0.7						136.7	1.367	19.8	19.9	-0.1	**0.5**	0.6
64	63.5	0.635	23.0	22.1	1.0	9.8	0.098	24.0	24.8	-0.7						136.7	1.367	19.7	19.8	-0.1	**0.5**	0.6
65	58.6	0.586	23.0	22.1	1.0	9.8	0.098	24.2	24.8	-0.6						131.8	1.318	19.8	20.0	-0.2	**0.5**	0.6
66	58.6	0.586	23.0	22.1	1.0	9.8	0.098	24.0	24.8	-0.7						131.8	1.318	19.6	19.8	-0.2	**0.5**	0.6
67	58.6	0.586	23.0	22.1	1.0	9.8	0.098	24.2	24.8	-0.6						131.8	1.318	19.4	19.8	-0.4	**0.5**	0.6
68	58.6	0.586	23.0	22.1	1.0	4.9	0.049	24.0	24.8	-0.7						131.8	1.318	19.8	20.0	-0.2	**0.5**	0.6
69	53.7	0.537	23.0	22.2	0.8	4.9	0.049	24.2	24.8	-0.6						127.0	1.270	19.4	19.8	-0.4	**0.5**	0.6
70	53.7	0.537	23.0	22.2	0.8	4.9	0.049	23.9	24.8	-0.8						127.0	1.270	19.4	19.9	-0.5	**0.5**	0.6
71	53.7	0.537	23.0	22.2	0.8	4.9	0.049	24.2	24.8	-0.6						127.0	1.270	19.8	20.0	-0.2	**0.5**	0.6
72	48.8	0.488	23.0	22.2	0.8	4.9	0.049	24.3	24.8	-0.5						127.0	1.270	19.4	19.8	-0.4	**0.5**	0.6
73	48.8	0.488	23.0	22.2	0.8	4.9	0.049	24.2	24.8	-0.6						122.1	1.221	19.6	20.0	-0.5	**0.4**	0.6
74	48.8	0.488	23.0	22.2	0.8	4.9	0.049	24.3	24.6	-0.4						122.1	1.221	19.6	19.9	-0.4	**0.4**	0.6
75	48.8	0.488	23.0	22.1	1.0	4.9	0.049	24.2	24.6	-0.5						122.1	1.221	19.4	19.9	-0.5	**0.4**	0.6
76	43.9	0.439	23.0	22.1	1.0	4.9	0.049	24.0	24.8	-0.7						122.1	1.221	19.7	20.0	-0.4	**0.4**	0.6
77	43.9	0.439	23.0	22.2	0.8	4.9	0.049	24.3	24.9	-0.6						117.2	1.172	19.6	19.9	-0.4	**0.4**	0.5
78	43.9	0.439	23.0	22.2	0.8											117.2	1.172	19.7	20.0	-0.4	**0.4**	0.6
79	43.9	0.439	23.0	22.1	1.0											117.2	1.172	19.6	19.9	-0.4	**0.4**	0.6
80	39.1	0.391	23.0	22.2	0.8											117.2	1.172	19.4	19.8	-0.4	**0.4**	0.6
81	39.1	0.391	23.0	22.2	0.8											112.3	1.123	19.6	19.9	-0.4	**0.4**	0.5
82	39.1	0.391	23.0	22.2	0.8											112.3	1.123	19.6	19.8	-0.2	**0.4**	0.5
83	39.1	0.391	23.0	22.2	0.8											112.3	1.123	19.4	19.8	-0.4	**0.4**	0.5
84	39.1	0.391	23.0	22.2	0.8											112.3	1.123	19.7	19.9	-0.2	**0.4**	0.5
85	39.1	0.391	23.0	22.2	0.8											112.3	1.123	19.4	19.7	-0.2	**0.4**	0.5
86	34.2	0.342	23.0	22.2	0.8											112.3	1.123	19.3	19.8	-0.5	**0.4**	0.5
87	34.2	0.342	23.0	22.2	0.8											107.4	1.074	19.6	19.9	-0.4	**0.4**	0.5
88	34.2	0.342	23.0	22.2	0.8											107.4	1.074	19.4	19.8	-0.4	**0.4**	0.5
89	34.2	0.342	23.0	22.2	0.8											107.4	1.074	19.6	19.9	-0.4	**0.4**	0.5
90	34.2	0.342	23.0	22.2	0.8											107.4	1.074	19.4	19.8	-0.4	**0.4**	0.5
91	29.3	0.293	23.1	22.1	1.1											102.5	1.025	19.3	19.8	-0.5	**0.3**	0.5
92	29.3	0.293	23.0	22.2	0.8											102.5	1.025	19.4	19.9	-0.5	**0.3**	0.5
93	29.3	0.293	23.0	22.2	0.8											102.5	1.025	19.3	19.9	-0.6	**0.3**	0.5
94	29.3	0.293	23.0	22.2	0.8											102.5	1.025	19.4	20.0	-0.6	**0.3**	0.5
95	29.3	0.293	23.0	22.2	0.8											102.5	1.025	19.5	20.0	-0.5	**0.3**	0.5
96	29.3	0.293	23.0	22.1	1.0											97.7	0.977	19.4	19.9	-0.5	**0.3**	0.5
97	24.4	0.244	23.0	22.2	0.8											97.7	0.977	19.3	19.9	-0.6	**0.3**	0.5
98	24.4	0.244	23.1	22.1	1.1											97.7	0.977	19.3	20.0	-0.7	**0.3**	0.5
99	24.4	0.244	23.0	22.2	0.8											97.7	0.977	19.3	20.0	-0.7	**0.3**	0.5
100	24.4	0.244	23.1	22.1	1.1											97.7	0.977	19.6	20.2	-0.6	**0.3**	0.5
101																92.8	0.928	19.4	20.0	-0.6	**0.2**	0.5

Table A.3-6 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was empty and carbon dioxide purging time was 15 min.

Sample No.	E31-15					E32-15					E33-15					E34-15					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(s)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	Mean	SD
0	253.9	2.539	23.3	22.2	1.1	253.9	2.539	24.7	25.3	-0.6	253.9	2.539	21.4	20.2	1.2	253.9	2.539	20.1	19.0	1.1	2.5	0.0
1	249.0	2.490	23.3	22.1	1.2	249.0	2.490	24.7	25.3	-0.6	249.0	2.490	21.4	20.2	1.2	253.9	2.539	19.9	19.0	0.9	2.5	0.0
2	244.1	2.441	23.3	22.1	1.2	244.1	2.441	24.7	25.3	-0.6	239.3	2.393	21.3	20.2	1.1	249.0	2.490	19.7	18.9	0.9	2.4	0.0
3	239.3	2.393	23.1	22.1	1.1	239.3	2.393	24.7	25.3	-0.6	229.5	2.295	21.3	20.2	1.1	249.0	2.490	20.1	19.2	1.0	2.4	0.1
4	234.4	2.344	23.1	22.1	1.1	234.4	2.344	24.7	25.3	-0.6	219.7	2.197	21.1	20.2	1.0	244.1	2.441	19.7	18.9	0.9	2.3	0.1
5	229.5	2.295	23.1	21.9	1.2	229.5	2.295	24.7	25.3	-0.6	210.0	2.100	21.3	20.2	1.1	239.3	2.393	19.9	19.3	0.6	2.3	0.1
6	224.6	2.246	23.1	22.1	1.1	224.6	2.246	24.7	25.3	-0.6	200.2	2.002	21.3	20.2	1.1	239.3	2.393	20.0	19.2	0.9	2.2	0.2
7	219.7	2.197	23.1	22.1	1.1	219.7	2.197	24.7	25.3	-0.6	190.4	1.904	21.3	20.2	1.1	234.4	2.344	19.9	19.2	0.7	2.2	0.2
8	214.8	2.148	23.1	22.1	1.1	210.0	2.100	24.7	25.4	-0.7	185.5	1.855	21.1	20.2	1.0	234.4	2.344	19.6	19.1	0.5	2.1	0.2
9	210.0	2.100	23.1	22.1	1.1	205.1	2.051	24.7	25.3	-0.6	175.8	1.758	21.1	20.2	1.0	229.5	2.295	19.9	19.3	0.6	2.1	0.2
10	205.1	2.051	23.1	22.1	1.1	195.3	1.953	24.5	25.3	-0.7	166.0	1.660	21.1	20.2	1.0	229.5	2.295	19.8	19.4	0.4	2.0	0.3
11	200.2	2.002	23.3	22.1	1.2	190.4	1.904	24.5	25.4	-0.8	161.1	1.611	21.1	20.2	1.0	229.5	2.295	19.7	19.4	0.4	2.0	0.3
12	195.3	1.953	23.1	22.1	1.1	185.5	1.855	24.7	25.3	-0.6	151.4	1.514	21.1	20.2	1.0	224.6	2.246	19.9	19.5	0.4	1.9	0.3
13	195.3	1.953	23.1	22.1	1.1	175.8	1.758	24.5	25.2	-0.7	146.5	1.465	21.1	20.2	1.0	224.6	2.246	19.8	19.4	0.4	1.9	0.3
14	190.4	1.904	23.3	22.1	1.2	170.9	1.709	24.5	25.4	-0.8	136.7	1.367	21.0	20.2	0.8	219.7	2.197	19.9	19.5	0.4	1.8	0.3
15	185.5	1.855	23.1	22.1	1.1	166.0	1.660	24.5	25.3	-0.7	131.8	1.318	21.0	20.2	0.8	214.8	2.148	19.8	19.5	0.2	1.7	0.3
16	180.7	1.807	23.1	22.1	1.1	161.1	1.611	24.5	25.4	-0.8	127.0	1.270	21.0	20.2	0.8	214.8	2.148	19.8	19.5	0.2	1.7	0.4
17	175.8	1.758	23.1	22.2	1.0	156.3	1.563	24.7	25.3	-0.6	117.2	1.172	20.9	20.2	0.7	214.8	2.148	19.9	19.7	0.2	1.7	0.4
18	175.8	1.758	23.3	22.2	1.1	151.4	1.514	24.4	25.1	-0.7	112.3	1.123	20.9	20.2	0.7	210.0	2.100	19.8	19.4	0.4	1.6	0.4
19	170.9	1.709	23.1	22.2	1.0	141.6	1.416	24.3	25.2	-1.0	107.4	1.074	20.8	20.2	0.6	210.0	2.100	19.9	19.5	0.4	1.6	0.4
20	166.0	1.660	23.1	22.2	1.0	141.6	1.416	24.4	25.2	-0.8	102.5	1.025	20.9	20.2	0.7	205.1	2.051	19.9	19.4	0.5	1.5	0.4
21	161.1	1.611	23.1	22.2	1.0	136.7	1.367	24.4	25.1	-0.7	92.8	0.928	20.8	20.3	0.5	205.1	2.051	19.8	19.3	0.5	1.5	0.5
22	161.1	1.611	23.1	22.2	1.0	131.8	1.318	24.5	25.2	-0.7	87.9	0.879	20.7	20.3	0.4	205.1	2.051	19.8	19.3	0.5	1.5	0.5
23	156.3	1.563	23.1	22.2	1.0	122.1	1.221	24.4	25.1	-0.7	83.0	0.830	20.8	20.2	0.6	200.2	2.002	19.8	19.2	0.6	1.4	0.5
24	151.4	1.514	23.3	22.2	1.1	117.2	1.172	24.4	25.1	-0.7	78.1	0.781	20.8	20.3	0.5	200.2	2.002	19.7	19.0	0.6	1.4	0.5
25	151.4	1.514	23.1	22.1	1.1	117.2	1.172	24.4	25.1	-0.7	73.2	0.732	20.8	20.2	0.6	200.2	2.002	19.7	19.0	0.6	1.4	0.5
26	146.5	1.465	23.1	22.1	1.1	112.3	1.123	24.4	25.0	-0.6	68.4	0.684	20.8	20.3	0.5	195.3	1.953	19.9	19.2	0.7	1.3	0.5
27	141.6	1.416	23.1	22.2	1.0	107.4	1.074	24.4	25.0	-0.6	68.4	0.684	20.8	20.3	0.5	195.3	1.953	19.7	19.0	0.6	1.3	0.5
28	141.6	1.416	23.0	22.1	1.0	102.5	1.025	24.3	25.0	-0.7	63.5	0.635	20.8	20.2	0.6	195.3	1.953	19.8	19.2	0.6	1.3	0.6
29	136.7	1.367	23.1	22.1	1.1	97.7	0.977	24.5	25.1	-0.6	58.6	0.586	20.8	20.3	0.5	190.4	1.904	19.8	19.0	0.7	1.2	0.6
30	136.7	1.367	23.0	21.9	1.1	92.8	0.928	24.4	25.1	-0.7	53.7	0.537	20.7	20.2	0.5	190.4	1.904	19.5	19.0	0.5	1.2	0.6
31	131.8	1.318	23.0	22.1	1.0	87.9	0.879	24.3	25.1	-0.8	48.8	0.488	20.7	20.2	0.5	185.5	1.855	19.7	19.2	0.5	1.1	0.6
32	127.0	1.270	23.1	22.1	1.1	87.9	0.879	24.4	25.1	-0.7	43.9	0.439	20.7	20.3	0.4	185.5	1.855	19.8	19.2	0.6	1.1	0.6
33	127.0	1.270	23.1	21.9	1.2	83.0	0.830	24.4	25.1	-0.7	43.9	0.439	20.5	20.2	0.4	185.5	1.855	19.7	19.3	0.4	1.1	0.6
34	122.1	1.221	23.1	22.1	1.1	78.1	0.781	24.3	25.1	-0.8	43.9	0.439	20.7	20.2	0.5	180.7	1.807	19.8	19.3	0.5	1.1	0.6
35	122.1	1.221	23.1	22.1	1.1	78.1	0.781	24.3	25.3	-1.0	39.1	0.391	20.7	20.2	0.5	180.7	1.807	19.8	19.2	0.6	1.0	0.6
36	117.2	1.172	23.1	22.1	1.1	73.2	0.732	24.5	25.1	-0.6	34.2	0.342	20.7	20.3	0.4	175.8	1.758	19.5	19.4	0.1	1.0	0.6
37	117.2	1.172	23.1	22.1	1.1	68.4	0.684	24.4	25.3	-0.8	34.2	0.342	20.7	20.3	0.4	175.8	1.758	19.7	19.5	0.1	1.0	0.6
38	112.3	1.123	23.1	22.1	1.1	68.4	0.684	24.4	25.4	-1.0	29.3	0.293	20.7	20.2	0.5	175.8	1.758	19.5	19.4	0.1	1.0	0.6
39	112.3	1.123	23.1	22.1	1.1	63.5	0.635	24.4	25.3	-0.8	29.3	0.293	20.7	20.3	0.4	175.8	1.758	19.5	19.5	0.0	1.0	0.6
40	107.4	1.074	23.1	21.9	1.2	58.6	0.586	24.4	25.3	-0.8	29.3	0.293	20.5	20.3	0.2	170.9	1.709	19.8	19.7	0.1	0.9	0.6
41	107.4	1.074	23.0	21.9	1.1	58.6	0.586	24.4	25.3	-0.8	24.4	0.244	20.5	20.3	0.2	170.9	1.709	19.7	19.5	0.1	0.9	0.6
42	102.5	1.025	23.1	22.1	1.1	58.6	0.586	24.3	25.3	-1.0	24.4	0.244	20.5	20.3	0.2	166.0	1.660	19.4	19.4	0.0	0.9	0.6
43	102.5	1.025	23.1	22.1	1.1	53.7	0.537	24.4	25.4	-1.0	19.5	0.195	20.7	20.3	0.4	166.0	1.660	19.7	19.4	0.2	0.9	0.6
44	97.7	0.977	23.0	22.1	1.0	48.8	0.488	24.3	25.4	-1.1	19.5	0.195	20.5	20.3	0.2	166.0	1.660	19.5	19.4	0.1	0.8	0.6
45	97.7	0.977	23.0	22.1	1.0	48.8	0.488	24.4	25.4	-1.0	19.5	0.195	20.5	20.3	0.2	161.1	1.611	19.5	19.4	0.1	0.8	0.6
46	92.8	0.928	23.0	22.1	1.0	43.9	0.439	24.4	25.3	-0.8	19.5	0.195	20.5	20.3	0.2	161.1	1.611	19.7	19.4	0.2	0.8	0.6

Table A.3-6 continued...

47	92.8	0.928	23.1	22.1	1.1	43.9	0.439	24.4	25.3	-0.8	14.6	0.146	20.5	20.3	0.2	161.1	1.611	19.4	19.3	0.1	**0.8**	0.6
48	87.9	0.879	23.0	22.1	1.0	43.9	0.439	24.4	25.3	-0.8	14.6	0.146	20.5	20.3	0.2	161.1	1.611	19.7	19.4	0.2	**0.8**	0.6
49	87.9	0.879	23.0	22.1	1.0	39.1	0.391	24.3	25.4	-1.1	14.6	0.146	20.5	20.3	0.2	156.3	1.563	19.7	19.3	0.4	**0.7**	0.6
50	87.9	0.879	23.0	22.1	1.0	39.1	0.391	24.3	25.4	-1.1	14.6	0.146	20.5	20.3	0.2	156.3	1.563	19.4	19.0	0.4	**0.7**	0.6
51	83.0	0.830	23.0	22.1	1.0	39.1	0.391	24.3	25.4	-1.1	9.8	0.098	20.5	20.3	0.2	156.3	1.563	19.5	19.2	0.4	**0.7**	0.6
52	83.0	0.830	23.1	22.1	1.1	34.2	0.342	24.4	25.3	-0.8	9.8	0.098	20.5	20.3	0.2	151.4	1.514	19.5	19.0	0.5	**0.7**	0.6
53	78.1	0.781	23.0	21.9	1.1	34.2	0.342	24.3	25.3	-1.0	9.8	0.098	20.5	20.2	0.4	151.4	1.514	19.4	19.0	0.4	**0.7**	0.6
54	78.1	0.781	23.0	21.8	1.2	29.3	0.293	24.3	25.3	-1.0	9.8	0.098	20.4	20.2	0.2	151.4	1.514	19.7	19.2	0.5	**0.7**	0.6
55	78.1	0.781	23.0	22.1	1.0	29.3	0.293	24.3	25.4	-1.1	9.8	0.098	20.4	20.2	0.2	151.4	1.514	19.5	19.0	0.5	**0.7**	0.6
56	73.2	0.732	23.0	22.1	1.0	29.3	0.293	24.3	25.4	-1.1	9.8	0.098	20.7	20.3	0.4	146.5	1.465	19.3	19.0	0.2	**0.6**	0.6
57	73.2	0.732	23.0	22.1	1.0	29.3	0.293	24.3	25.3	-1.0	9.8	0.098	20.5	20.2	0.4	146.5	1.465	19.7	19.2	0.5	**0.6**	0.6
58	73.2	0.732	23.0	22.1	1.0	24.4	0.244	24.3	25.4	-1.1	9.8	0.098	20.5	20.2	0.4	146.5	1.465	19.4	19.2	0.2	**0.6**	0.6
59	68.4	0.684	23.0	22.1	1.0	24.4	0.244	24.3	25.3	-1.0	9.8	0.098	20.5	20.2	0.4	141.6	1.416	19.5	19.2	0.4	**0.6**	0.6
60	68.4	0.684	23.0	22.1	1.0	24.4	0.244	24.3	25.3	-1.0	4.9	0.049	20.5	20.2	0.4	141.6	1.416	19.3	19.2	0.1	**0.6**	0.6
61	68.4	0.684	23.0	22.1	1.0	19.5	0.195	24.3	25.4	-1.1	9.8	0.098	20.5	20.2	0.4	141.6	1.416	19.4	19.3	0.1	**0.6**	0.6
62	63.5	0.635	23.0	22.1	1.0	19.5	0.195	24.2	25.4	-1.2						141.6	1.416	19.4	19.3	0.1	**0.6**	0.6
63	63.5	0.635	23.0	22.1	1.0	19.5	0.195	24.3	25.4	-1.1						136.7	1.367	19.3	19.4	-0.1	**0.5**	0.6
64	63.5	0.635	23.0	22.1	1.0	19.5	0.195	24.3	25.4	-1.1						136.7	1.367	19.5	19.5	0.0	**0.5**	0.6
65	58.6	0.586	23.0	22.1	1.0	19.5	0.195	24.4	25.4	-1.0						136.7	1.367	19.5	19.4	0.1	**0.5**	0.6
66	58.6	0.586	23.0	22.1	1.0	19.5	0.195	24.3	25.4	-1.1						136.7	1.367	19.4	19.4	0.0	**0.5**	0.6
67	58.6	0.586	23.0	22.1	1.0	14.6	0.146	24.3	25.4	-1.1						131.8	1.318	19.5	19.5	0.0	**0.5**	0.6
68	58.6	0.586	23.0	22.1	1.0	14.6	0.146	24.4	25.4	-1.0						131.8	1.318	19.4	19.4	0.0	**0.5**	0.6
69	53.7	0.537	23.0	22.2	0.8	14.6	0.146	24.3	25.4	-1.1						131.8	1.318	19.3	19.4	-0.1	**0.5**	0.6
70	53.7	0.537	23.0	22.2	0.8	14.6	0.146	24.1	25.2	-1.1						131.8	1.318	19.5	19.4	0.1	**0.5**	0.6
71	53.7	0.537	23.0	22.2	0.8	14.6	0.146	24.3	25.4	-1.1						127.0	1.270	19.5	19.3	0.2	**0.5**	0.6
72	48.8	0.488	23.0	22.2	0.8	14.6	0.146	24.3	25.2	-1.0						127.0	1.270	19.4	19.3	0.1	**0.5**	0.6
73	48.8	0.488	23.0	22.2	0.8	9.8	0.098	24.3	25.2	-1.0						127.0	1.270	19.5	19.2	0.4	**0.5**	0.6
74	48.8	0.488	23.0	22.2	0.8	9.8	0.098	24.1	25.2	-1.1						127.0	1.270	19.4	19.0	0.4	**0.5**	0.6
75	48.8	0.488	23.0	22.1	1.0	9.8	0.098	24.3	25.2	-1.0						122.1	1.221	19.3	18.9	0.4	**0.5**	0.6
76	43.9	0.439	23.0	22.1	1.0	9.8	0.098	24.3	25.2	-1.0						122.1	1.221	19.5	19.0	0.5	**0.4**	0.6
77	43.9	0.439	23.0	22.2	0.8	9.8	0.098	24.4	25.2	-0.8						122.1	1.221	19.3	18.9	0.4	**0.4**	0.6
78	43.9	0.439	23.0	22.2	0.8	9.8	0.098	24.3	25.2	-1.0						122.1	1.221	19.3	19.0	0.2	**0.4**	0.6
79	43.9	0.439	23.0	22.1	1.0	9.8	0.098	24.1	25.2	-1.1						117.2	1.172	19.4	19.0	0.4	**0.4**	0.5
80	39.1	0.391	23.0	22.2	0.8	9.8	0.098	24.3	25.2	-1.0						117.2	1.172	19.4	19.0	0.4	**0.4**	0.5
81	39.1	0.391	23.0	22.2	0.8	9.8	0.098	24.3	25.3	-1.1						117.2	1.172	19.2	18.9	0.2	**0.4**	0.5
82	39.1	0.391	23.0	22.2	0.8	9.8	0.098	24.3	25.2	-1.0						117.2	1.172	19.3	19.0	0.2	**0.4**	0.5
83	39.1	0.391	23.0	22.2	0.8	9.8	0.098	24.3	25.2	-1.0						117.2	1.172	19.2	18.9	0.2	**0.4**	0.5
84	39.1	0.391	23.0	22.2	0.8	4.9	0.049	24.3	25.2	-1.0						117.2	1.172	19.2	19.0	0.1	**0.4**	0.5
85	39.1	0.391	23.0	22.2	0.8	4.9	0.049	24.3	25.2	-1.0						112.3	1.123	19.4	19.2	0.2	**0.4**	0.5
86	34.2	0.342	23.0	22.2	0.8	4.9	0.049	24.4	25.2	-0.8						112.3	1.123	19.2	19.2	0.0	**0.4**	0.5
87	34.2	0.342	23.0	22.2	0.8	4.9	0.049	24.3	25.3	-1.1						112.3	1.123	19.4	19.3	0.1	**0.4**	0.5
88	34.2	0.342	23.0	22.2	0.8	4.9	0.049	24.1	25.0	-1.0						112.3	1.123	19.4	19.3	0.1	**0.4**	0.5
89	34.2	0.342	23.0	22.2	0.8	4.9	0.049	24.4	25.2	-0.8						107.4	1.074	19.2	19.2	0.0	**0.4**	0.5
90	34.2	0.342	23.0	22.2	0.8	4.9	0.049	24.4	25.2	-0.8						107.4	1.074	19.2	19.3	-0.1	**0.4**	0.5
91	29.3	0.293	23.1	22.1	1.1	4.9	0.049	24.3	25.2	-1.0						107.4	1.074	19.2	19.3	-0.1	**0.4**	0.5
92	29.3	0.293	23.0	22.2	0.8	4.9	0.049	24.3	25.2	-1.0						107.4	1.074	19.2	19.4	-0.2	**0.4**	0.5
93	29.3	0.293	23.0	22.2	0.8	4.9	0.049	24.4	25.2	-0.8						107.4	1.074	19.3	19.4	-0.1	**0.4**	0.5
94	29.3	0.293	23.0	22.2	0.8	4.9	0.049	24.4	25.3	-1.0						102.5	1.025	19.4	19.3	0.1	**0.3**	0.5
95	29.3	0.293	23.0	22.2	0.8	4.9	0.049	24.4	25.2	-0.8						102.5	1.025	19.2	19.2	0.0	**0.3**	0.5
96	29.3	0.293	23.0	22.1	1.0	4.9	0.049	24.4	25.3	-1.0						102.5	1.025	19.3	19.2	0.1	**0.3**	0.5
97	24.4	0.244	23.0	22.2	0.8	4.9	0.049	24.4	25.3	-1.0						102.5	1.025	19.2	19.0	0.1	**0.3**	0.5
98	24.4	0.244	23.1	22.1	1.1	4.9	0.049	24.2	25.0	-0.8						102.5	1.025	19.2	19.0	0.1	**0.3**	0.5
99	24.4	0.244	23.0	22.2	0.8	4.9	0.049	24.4	25.3	-1.0						97.7	0.977	19.3	19.0	0.2	**0.3**	0.5
100	24.4	0.244	22.9	22.2	0.7	4.9	0.049	24.4	25.2	-0.8						97.7	0.977	19.3	19.0	0.2	**0.3**	0.5
101						4.9	0.049	24.3	25.2	-1.0						97.7	0.977	19.2	19.0	0.1	**0.3**	0.5

Table A.3-7 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was empty and carbon dioxide purging time was 30 min.

Sample No.	E31-30					E32-30					E33-30					E34-30						
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	
(s)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.6	20.4	1.2	253.9	2.539	19.3	19.4	-0.1	253.9	2.539	20.9	20.1	0.8	253.9	2.539	20.3	19.6	0.7	2.5	0.0
1	249.0	2.490	21.6	20.4	1.2	244.1	2.441	19.5	19.4	0.1	244.1	2.441	20.9	20.1	0.8	253.9	2.539	20.2	19.3	0.9	2.5	0.0
2	244.1	2.441	21.6	20.4	1.2	239.3	2.393	19.5	19.5	0.0	234.4	2.344	20.9	20.1	0.8	249.0	2.490	20.2	19.4	0.7	2.4	0.1
3	239.3	2.393	21.6	20.4	1.2	229.5	2.295	19.3	19.4	-0.1	224.6	2.246	21.0	20.1	1.0	244.1	2.441	20.3	19.6	0.7	2.3	0.1
4	234.4	2.344	21.7	20.4	1.3	224.6	2.246	19.3	19.5	-0.2	214.8	2.148	21.1	20.2	0.8	244.1	2.441	20.0	19.4	0.6	2.3	0.1
5	229.5	2.295	21.7	20.4	1.3	219.7	2.197	19.4	19.4	0.0	210.0	2.100	20.9	20.1	0.8	239.3	2.393	20.3	19.6	0.7	2.2	0.1
6	224.6	2.246	21.6	20.4	1.2	210.0	2.100	19.4	19.4	0.0	200.2	2.002	20.8	20.1	0.7	239.3	2.393	20.2	19.4	0.7	2.2	0.2
7	219.7	2.197	21.7	20.5	1.2	205.1	2.051	19.3	19.4	-0.1	190.4	1.904	20.9	20.1	0.8	239.3	2.393	20.0	19.4	0.6	2.1	0.2
8	214.8	2.148	21.6	20.5	1.1	200.2	2.002	19.4	19.4	0.0	185.5	1.855	21.0	20.2	0.7	234.4	2.344	19.9	19.5	0.4	2.1	0.2
9	210.0	2.100	21.7	20.5	1.2	190.4	1.904	19.5	19.4	0.1	175.8	1.758	20.8	20.1	0.7	234.4	2.344	20.2	19.6	0.6	2.0	0.3
10	205.1	2.051	21.6	20.5	1.1	185.5	1.855	19.1	19.4	-0.2	166.0	1.660	20.7	20.1	0.6	229.5	2.295	20.0	19.7	0.4	2.0	0.3
11	205.1	2.051	21.6	20.5	1.1	180.7	1.807	19.3	19.4	-0.1	161.1	1.611	20.7	20.1	0.6	229.5	2.295	20.2	19.8	0.4	1.9	0.3
12	200.2	2.002	21.6	20.5	1.1	175.8	1.758	19.3	19.4	-0.1	151.4	1.514	21.0	20.2	0.7	224.6	2.246	19.9	19.8	0.1	1.9	0.3
13	195.3	1.953	21.6	20.5	1.1	170.9	1.709	19.3	19.4	-0.1	146.5	1.465	20.7	20.1	0.6	224.6	2.246	20.0	19.8	0.2	1.8	0.3
14	190.4	1.904	21.6	20.5	1.1	166.0	1.660	19.3	19.4	-0.1	141.6	1.416	20.7	20.1	0.6	219.7	2.197	20.2	19.9	0.2	1.8	0.3
15	190.4	1.904	21.6	20.5	1.1	156.3	1.563	19.1	19.4	-0.2	131.8	1.318	20.7	20.1	0.6	219.7	2.197	20.0	19.8	0.2	1.7	0.4
16	185.5	1.855	21.6	20.5	1.1	151.4	1.514	19.3	19.4	-0.1	127.0	1.270	20.7	20.1	0.6	214.8	2.148	20.0	20.0	0.0	1.7	0.4
17	180.7	1.807	21.6	20.6	1.0	151.4	1.514	19.3	19.4	-0.1	122.1	1.221	20.6	20.1	0.5	214.8	2.148	20.2	19.9	0.2	1.7	0.4
18	180.7	1.807	21.6	20.5	1.1	146.5	1.465	19.1	19.4	-0.2	117.2	1.172	20.6	20.1	0.5	214.8	2.148	20.0	19.9	0.1	1.6	0.4
19	175.8	1.758	21.6	20.5	1.1	136.7	1.367	19.3	19.4	-0.1	112.3	1.123	20.6	20.1	0.5	210.0	2.100	20.2	19.9	0.2	1.6	0.4
20	170.9	1.709	21.6	20.5	1.1	136.7	1.367	19.1	19.4	-0.2	97.7	0.977	20.6	20.2	0.4	210.0	2.100	20.0	19.7	0.4	1.5	0.5
21	166.0	1.660	21.6	20.5	1.1	131.8	1.318	19.3	19.4	-0.1	97.7	0.977	20.7	20.2	0.5	205.1	2.051	19.9	19.7	0.2	1.5	0.5
22	166.0	1.660	21.5	20.5	1.0	127.0	1.270	19.1	19.4	-0.2	92.8	0.928	20.7	20.2	0.5	205.1	2.051	20.2	19.8	0.4	1.5	0.5
23	161.1	1.611	21.6	20.5	1.1	122.1	1.221	19.1	19.4	-0.2	87.9	0.879	20.4	20.1	0.4	200.2	2.002	19.9	19.6	0.4	1.4	0.5
24	156.3	1.563	21.6	20.5	1.1	117.2	1.172	19.3	19.4	-0.1	83.0	0.830	20.6	20.2	0.4	200.2	2.002	20.0	19.7	0.4	1.4	0.5
25	151.4	1.514	21.6	20.5	1.1	112.3	1.123	19.0	19.4	-0.4	78.1	0.781	20.3	20.0	0.4	200.2	2.002	20.2	19.6	0.6	1.4	0.5
26	151.4	1.514	21.6	20.5	1.1	107.4	1.074	19.3	19.4	-0.1	73.2	0.732	20.6	20.1	0.5	195.3	1.953	19.9	19.4	0.5	1.3	0.5
27	151.4	1.514	21.6	20.4	1.2	107.4	1.074	19.1	19.4	-0.2	73.2	0.732	20.3	20.1	0.2	195.3	1.953	20.0	19.6	0.5	1.3	0.5
28	146.5	1.465	21.5	20.5	1.0	102.5	1.025	19.0	19.4	-0.4	68.4	0.684	20.6	20.2	0.4	190.4	1.904	19.8	19.4	0.4	1.3	0.5
29	141.6	1.416	21.5	20.5	1.0	97.7	0.977	19.0	19.4	-0.4	63.5	0.635	20.4	20.1	0.4	190.4	1.904	19.8	19.4	0.4	1.2	0.6
30	141.6	1.416	21.6	20.5	1.1	92.8	0.928	19.1	19.4	-0.2	58.6	0.586	20.5	20.1	0.4	190.4	1.904	20.0	19.7	0.4	1.2	0.6
31	136.7	1.367	21.6	20.5	1.1	87.9	0.879	19.0	19.4	-0.4	53.7	0.537	20.4	20.2	0.1	190.4	1.904	20.0	19.4	0.6	1.2	0.6
32	131.8	1.318	21.8	20.7	1.1	87.9	0.879	19.0	19.4	-0.4	53.7	0.537	20.6	20.2	0.4	185.5	1.855	19.8	19.3	0.5	1.1	0.6
33	131.8	1.318	21.5	20.5	1.0	83.0	0.830	19.0	19.4	-0.4	48.8	0.488	20.5	20.2	0.2	185.5	1.855	20.0	19.6	0.5	1.1	0.6
34	127.0	1.270	21.6	20.5	1.1	78.1	0.781	19.1	19.4	-0.2	43.9	0.439	20.5	20.2	0.2	180.7	1.807	19.8	19.4	0.4	1.1	0.6
35	127.0	1.270	21.5	20.5	1.0	78.1	0.781	18.9	19.4	-0.5	43.9	0.439	20.5	20.2	0.2	180.7	1.807	19.8	19.6	0.2	1.1	0.6
36	122.1	1.221	21.6	20.5	1.1	73.2	0.732	18.9	19.4	-0.5	39.1	0.391	20.5	20.1	0.4	180.7	1.807	20.0	19.7	0.4	1.0	0.6
37	122.1	1.221	21.5	20.5	1.0	68.4	0.684	18.9	19.3	-0.4	34.2	0.342	20.4	20.2	0.1	180.7	1.807	19.8	19.6	0.2	1.0	0.6
38	117.2	1.172	21.6	20.7	1.0	68.4	0.684	19.0	19.4	-0.4	34.2	0.342	20.4	20.1	0.2	175.8	1.758	19.9	19.8	0.1	1.0	0.6
39	117.2	1.172	21.5	20.5	1.0	63.5	0.635	18.9	19.4	-0.5	34.2	0.342	20.2	20.1	0.1	175.8	1.758	19.8	19.7	0.1	1.0	0.6
40	112.3	1.123	21.5	20.5	1.0	63.5	0.635	18.9	19.4	-0.5	29.3	0.293	20.4	20.2	0.1	175.8	1.758	19.7	19.8	-0.1	1.0	0.6
41	112.3	1.123	21.5	20.5	1.0	58.6	0.586	18.9	19.4	-0.5	29.3	0.293	20.5	20.1	0.4	170.9	1.709	19.9	19.9	0.0	0.9	0.6
42	107.4	1.074	21.8	20.7	1.1	58.6	0.586	18.9	19.4	-0.5	29.3	0.293	20.4	20.2	0.1	170.9	1.709	19.9	19.8	0.1	0.9	0.6
43	107.4	1.074	21.6	20.4	1.2	53.7	0.537	18.9	19.4	-0.5	24.4	0.244	20.4	20.2	0.1	166.0	1.660	19.9	19.9	0.0	0.9	0.6
44	102.5	1.025	21.6	20.5	1.1	53.7	0.537	18.9	19.4	-0.5	24.4	0.244	20.4	20.1	0.2	166.0	1.660	19.8	19.9	-0.1	0.9	0.6
45	102.5	1.025	21.5	20.5	1.0	48.8	0.488	18.9	19.4	-0.5	19.5	0.195	20.4	20.2	0.1	166.0	1.660	19.8	19.8	0.0	0.8	0.6
46	97.7	0.977	21.6	20.6	1.1	48.8	0.488	18.9	19.4	-0.5	19.5	0.195	20.4	20.1	0.2	161.1	1.611	19.8	19.8	0.0	0.8	0.6

Table A.3-7 continued...

47	97.7	0.977	21.5	20.4	1.1	43.9	0.439	18.8	19.3	-0.5	19.5	0.195	20.2	20.0	0.2	161.1	1.611	19.8	19.7	0.1	**0.8**	0.6
48	92.8	0.928	21.5	20.5	1.0	43.9	0.439	18.9	19.3	-0.4	14.6	0.146	20.2	20.2	0.0	161.1	1.611	19.7	19.6	0.1	**0.8**	0.6
49	92.8	0.928	21.6	20.7	1.0	43.9	0.439	18.9	19.4	-0.5	14.6	0.146	20.4	20.2	0.1	161.1	1.611	20.0	20.0	0.0	**0.8**	0.6
50	92.8	0.928	21.6	20.5	1.1	39.1	0.391	18.8	19.4	-0.6	14.6	0.146	20.1	20.0	0.1	156.3	1.563	19.8	19.6	0.2	**0.8**	0.6
51	87.9	0.879	21.5	20.7	0.8	34.2	0.342	18.7	19.4	-0.7	14.6	0.146	20.2	20.2	0.0	156.3	1.563	19.7	19.4	0.2	**0.7**	0.6
52	87.9	0.879	21.6	20.6	1.1	34.2	0.342	18.8	19.4	-0.6	14.6	0.146	20.4	20.1	0.2	151.4	1.514	20.0	19.7	0.2	**0.7**	0.6
53	83.0	0.830	21.5	20.4	1.1	34.2	0.342	18.8	19.3	-0.5	14.6	0.146	20.0	20.1	-0.1	151.4	1.514	19.7	19.3	0.4	**0.7**	0.6
54	83.0	0.830	21.6	20.6	1.1	29.3	0.293	18.7	19.3	-0.6	9.8	0.098	20.2	20.1	0.1	151.4	1.514	19.8	19.6	0.2	**0.7**	0.6
55	83.0	0.830	21.6	20.6	1.1	29.3	0.293	18.8	19.4	-0.6	9.8	0.098	20.2	20.1	0.1	151.4	1.514	19.8	19.4	0.4	**0.7**	0.6
56	78.1	0.781	21.8	20.6	1.2	29.3	0.293	18.8	19.5	-0.7	9.8	0.098	20.2	20.1	0.1	151.4	1.514	19.7	19.3	0.4	**0.7**	0.6
57	78.1	0.781	21.6	20.6	1.1	29.3	0.293	18.8	19.4	-0.6	9.8	0.098	20.1	20.2	-0.1	146.5	1.465	19.8	19.6	0.2	**0.7**	0.6
58	73.2	0.732	21.5	20.4	1.1	24.4	0.244	18.8	19.4	-0.6	9.8	0.098	20.2	20.1	0.1	146.5	1.465	19.7	19.3	0.4	**0.6**	0.6
59	73.2	0.732	21.6	20.6	1.1	24.4	0.244	18.8	19.4	-0.6	9.8	0.098	20.2	20.2	0.0	146.5	1.465	20.0	19.7	0.2	**0.6**	0.6
60	73.2	0.732	21.6	20.6	1.1	24.4	0.244	18.8	19.4	-0.6	9.8	0.098	20.2	20.2	0.0	146.5	1.465	19.7	19.4	0.2	**0.6**	0.6
61	68.4	0.684	21.6	20.4	1.2	24.4	0.244	18.8	19.4	-0.6	9.8	0.098	20.2	20.2	0.0	141.6	1.416	19.6	19.6	0.0	**0.6**	0.6
62	68.4	0.684	21.6	20.6	1.1	19.5	0.195	18.7	19.4	-0.7	4.9	0.049	20.2	20.1	0.1	141.6	1.416	19.7	19.6	0.1	**0.6**	0.6
63	68.4	0.684	21.3	20.4	1.0	19.5	0.195	18.5	19.3	-0.7						141.6	1.416	19.7	19.7	0.0	**0.6**	0.6
64	63.5	0.635	21.5	20.4	1.1	19.5	0.195	18.7	19.4	-0.7						141.6	1.416	19.8	19.8	0.0	**0.6**	0.6
65	63.5	0.635	21.6	20.6	1.1	19.5	0.195	18.5	19.4	-0.9						136.7	1.367	19.7	19.7	0.0	**0.5**	0.6
66	63.5	0.635	21.8	20.6	1.2	19.5	0.195	18.5	19.5	-1.0						136.7	1.367	19.6	19.7	-0.1	**0.5**	0.6
67	58.6	0.586	21.6	20.6	1.1	14.6	0.146	18.4	19.4	-1.0						136.7	1.367	20.0	20.0	0.0	**0.5**	0.6
68	58.6	0.586	21.6	20.6	1.1	14.6	0.146	18.7	19.4	-0.7						136.7	1.367	19.7	19.8	-0.1	**0.5**	0.6
69	58.6	0.586	21.5	20.6	1.0	14.6	0.146	18.7	19.3	-0.6						131.8	1.318	19.6	19.9	-0.4	**0.5**	0.6
70	53.7	0.537	21.6	20.6	1.1	14.6	0.146	18.7	19.4	-0.7						131.8	1.318	19.7	19.9	-0.2	**0.5**	0.6
71	53.7	0.537	21.6	20.6	1.1	14.6	0.146	18.7	19.4	-0.7						131.8	1.318	19.7	19.8	-0.1	**0.5**	0.6
72	53.7	0.537	21.6	20.6	1.1	14.6	0.146	18.7	19.4	-0.7						131.8	1.318	19.9	20.1	-0.2	**0.5**	0.6
73	53.7	0.537	21.5	20.6	1.0	14.6	0.146	18.8	19.3	-0.5						127.0	1.270	19.7	19.8	-0.1	**0.5**	0.6
74	48.8	0.488	21.6	20.6	1.1	14.6	0.146	18.5	19.4	-0.9						127.0	1.270	15.6	19.7	-4.2	**0.5**	0.6
75	48.8	0.488	21.6	20.6	1.1	9.8	0.098	18.7	19.4	-0.7						127.0	1.270	19.6	19.7	-0.1	**0.5**	0.6
76	48.8	0.488	21.6	20.6	1.1	9.8	0.098	18.7	19.6	-0.9						127.0	1.270	19.6	19.6	0.0	**0.5**	0.6
77	48.8	0.488	21.6	20.6	1.1	9.8	0.098	18.7	19.4	-0.7						127.0	1.270	19.4	19.6	-0.1	**0.5**	0.6
78	43.9	0.439	21.6	20.6	1.1	9.8	0.098	18.5	19.4	-0.9						122.1	1.221	19.7	19.7	0.0	**0.4**	0.6
79	43.9	0.439	21.6	20.6	1.1	9.8	0.098	18.5	19.4	-0.9						122.1	1.221	19.6	19.4	0.1	**0.4**	0.6
80	43.9	0.439	21.5	20.4	1.1	9.8	0.098	18.8	19.6	-0.7						122.1	1.221	19.4	19.4	0.0	**0.4**	0.6
81	43.9	0.439	21.6	20.6	1.1	9.8	0.098	18.8	19.4	-0.6						122.1	1.221	19.7	19.4	0.2	**0.4**	0.6
82	39.1	0.391	21.6	20.6	1.1	9.8	0.098	18.8	19.6	-0.7						117.2	1.172	19.4	19.4	0.0	**0.4**	0.5
83	39.1	0.391	21.6	20.6	1.1	9.8	0.098	18.7	19.3	-0.6						117.2	1.172	19.7	19.7	0.0	**0.4**	0.5
84	39.1	0.391	21.6	20.6	1.1	9.8	0.098	18.7	19.4	-0.7						117.2	1.172	19.7	19.4	0.2	**0.4**	0.5
85	39.1	0.391	21.6	20.6	1.1	9.8	0.098	18.7	19.4	-0.7						117.2	1.172	19.4	19.4	0.0	**0.4**	0.5
86	39.1	0.391	21.5	20.6	1.0	9.8	0.098	18.7	19.4	-0.7						112.3	1.123	19.9	19.9	0.0	**0.4**	0.5
87	34.2	0.342	21.6	20.6	1.1	9.8	0.098	18.8	19.4	-0.6						112.3	1.123	19.6	19.4	0.1	**0.4**	0.5
88	34.2	0.342	21.6	20.6	1.1	4.9	0.049	18.8	19.6	-0.7						112.3	1.123	19.6	19.7	-0.1	**0.4**	0.5
89	34.2	0.342	21.5	20.4	1.1	4.9	0.049	18.8	19.4	-0.6						112.3	1.123	19.6	19.8	-0.2	**0.4**	0.5
90	34.2	0.342	21.6	20.6	1.1	4.9	0.049	18.7	19.4	-0.7						112.3	1.123	19.4	19.7	-0.2	**0.4**	0.5
91	29.3	0.293	21.6	20.6	1.1	4.9	0.049	18.8	19.6	-0.7						112.3	1.123	19.7	20.1	-0.4	**0.4**	0.5
92	29.3	0.293	21.6	20.6	1.1	4.9	0.049	18.8	19.4	-0.6						112.3	1.123	19.6	19.8	-0.2	**0.4**	0.5
93	29.3	0.293	21.5	20.4	1.1	4.9	0.049	18.7	19.3	-0.6						107.4	1.074	19.4	19.7	-0.2	**0.4**	0.5
94	29.3	0.293	21.6	20.7	1.0	4.9	0.049	18.8	19.6	-0.7						107.4	1.074	19.6	20.1	-0.5	**0.4**	0.5
95	29.3	0.293	21.5	20.5	1.0	4.9	0.049	18.8	19.4	-0.6						107.4	1.074	19.7	19.9	-0.2	**0.4**	0.5
96	24.4	0.244	21.5	20.5	1.0	4.9	0.049	18.7	19.4	-0.7						107.4	1.074	19.4	19.8	-0.4	**0.3**	0.5
97	24.4	0.244	21.5	20.5	1.0	4.9	0.049	18.9	19.6	-0.6						102.5	1.025	19.6	19.8	-0.2	**0.3**	0.5
98	24.4	0.244	21.5	20.5	1.0	4.9	0.049	18.7	19.4	-0.7						102.5	1.025	19.3	19.6	-0.2	**0.3**	0.5
99	24.4	0.244	21.5	20.5	1.0	4.9	0.049	18.8	19.6	-0.7						102.5	1.025	19.6	19.9	-0.2	**0.3**	0.5
100	24.4	0.244	21.6	20.7	1.0	4.9	0.049	18.8	19.6	-0.7						102.5	1.025	19.7	20.0	-0.2	**0.3**	0.5
101																102.5	1.025	19.7	19.9	-0.1	**0.3**	0.5

Table A.3-8 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3 (no caulking) when bin was empty and carbon dioxide purging time was 60 min.

Sample No.	E31-60					E32-60					E33-60					E34-60					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(s)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	(mmH2O)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	21.4	20.2	1.2	253.9	2.539	21.1	21.0	0.1	253.9	2.539	20.7	19.6	1.1	253.9	2.539	20.0	19.5	0.5	2.5	0.0
1	249.0	2.490	21.4	20.2	1.2	249.0	2.490	21.1	20.8	0.2	244.1	2.441	20.7	19.6	1.1	249.0	2.490	20.3	19.8	0.5	2.5	0.0
2	244.1	2.441	21.4	20.2	1.2	244.1	2.441	21.1	21.0	0.1	234.4	2.344	20.7	19.6	1.1	249.0	2.490	20.3	19.9	0.4	2.4	0.1
3	244.1	2.441	21.4	20.2	1.2	234.4	2.344	21.1	21.0	0.1	224.6	2.246	20.7	19.6	1.1	244.1	2.441	20.1	19.7	0.5	2.4	0.1
4	239.3	2.393	21.4	20.2	1.2	229.5	2.295	21.1	21.0	0.1	214.8	2.148	20.6	19.6	1.0	244.1	2.441	20.4	20.0	0.4	2.3	0.1
5	234.4	2.344	21.4	20.2	1.2	224.6	2.246	21.1	21.0	0.1	205.1	2.051	20.7	19.6	1.1	239.3	2.393	20.1	20.1	0.0	2.3	0.2
6	229.5	2.295	21.4	20.2	1.2	214.8	2.148	21.1	21.0	0.1	200.2	2.002	20.6	19.6	1.0	239.3	2.393	20.1	20.0	0.1	2.2	0.2
7	224.6	2.246	21.4	20.1	1.3	210.0	2.100	21.0	20.8	0.1	190.4	1.904	20.6	19.6	1.0	234.4	2.344	20.3	20.1	0.1	2.1	0.2
8	219.7	2.197	21.3	20.2	1.1	205.1	2.051	21.1	21.0	0.1	180.7	1.807	20.6	19.6	1.0	234.4	2.344	20.3	20.0	0.2	2.1	0.2
9	219.7	2.197	21.4	20.1	1.3	200.2	2.002	20.8	21.0	-0.1	175.8	1.758	20.4	19.6	0.7	229.5	2.295	20.0	19.9	0.1	2.1	0.2
10	214.8	2.148	21.4	20.2	1.2	190.4	1.904	21.0	21.0	0.0	166.0	1.660	20.5	19.6	0.8	229.5	2.295	20.3	20.0	0.2	2.0	0.3
11	210.0	2.100	21.4	20.2	1.2	185.5	1.855	21.0	21.0	0.0	161.1	1.611	20.5	19.6	0.8	224.6	2.246	20.1	20.0	0.1	2.0	0.3
12	205.1	2.051	21.4	20.2	1.2	180.7	1.807	21.0	21.1	-0.1	151.4	1.514	20.5	19.5	1.0	224.6	2.246	20.1	20.0	0.1	1.9	0.3
13	205.1	2.051	21.4	20.2	1.2	175.8	1.758	21.0	21.0	0.0	146.5	1.465	20.5	19.6	0.8	219.7	2.197	20.1	20.1	0.0	1.9	0.3
14	200.2	2.002	21.4	20.2	1.2	170.9	1.709	21.0	21.0	0.0	141.6	1.416	20.5	19.6	0.8	219.7	2.197	20.0	20.1	-0.1	1.8	0.3
15	195.3	1.953	21.4	20.2	1.2	166.0	1.660	21.0	21.0	0.0	136.7	1.367	20.5	19.6	0.8	214.8	2.148	20.1	20.3	-0.1	1.8	0.3
16	190.4	1.904	21.4	20.2	1.2	161.1	1.611	21.0	21.0	0.0	127.0	1.270	20.4	19.6	0.7	214.8	2.148	20.3	20.4	-0.1	1.7	0.4
17	190.4	1.904	21.3	20.2	1.1	156.3	1.563	21.0	21.0	0.0	122.1	1.221	20.4	19.6	0.7	210.0	2.100	20.1	20.1	0.0	1.7	0.4
18	185.5	1.855	21.4	20.2	1.2	151.4	1.514	21.1	21.3	-0.1	117.2	1.172	20.4	19.6	0.7	210.0	2.100	20.1	20.4	-0.2	1.7	0.4
19	180.7	1.807	21.4	20.1	1.3	146.5	1.465	20.8	21.1	-0.2	112.3	1.123	20.4	19.6	0.7	210.0	2.100	20.1	20.1	0.0	1.6	0.4
20	180.7	1.807	21.3	20.2	1.1	141.6	1.416	21.0	21.0	0.0	107.4	1.074	20.4	19.6	0.7	205.1	2.051	20.0	20.1	-0.1	1.6	0.4
21	175.8	1.758	21.3	20.2	1.1	136.7	1.367	20.8	21.1	-0.2	102.5	1.025	20.2	19.6	0.6	205.1	2.051	20.1	20.1	0.0	1.6	0.4
22	170.9	1.709	21.4	20.2	1.2	131.8	1.318	20.8	21.0	-0.1	97.7	0.977	20.2	19.6	0.6	200.2	2.002	20.3	20.1	0.1	1.5	0.4
23	170.9	1.709	21.3	20.2	1.1	127.0	1.270	21.0	21.1	-0.1	92.8	0.928	20.4	19.6	0.7	200.2	2.002	20.0	20.0	0.0	1.5	0.5
24	166.0	1.660	21.4	20.2	1.2	127.0	1.270	20.8	21.1	-0.2	87.9	0.879	20.2	19.6	0.6	200.2	2.002	20.1	20.0	0.1	1.5	0.5
25	166.0	1.660	21.4	20.2	1.2	122.1	1.221	20.7	21.0	-0.2	83.0	0.830	20.3	19.7	0.6	195.3	1.953	20.1	19.8	0.4	1.4	0.5
26	161.1	1.611	21.3	20.2	1.1	117.2	1.172	20.8	21.0	-0.1	78.1	0.781	20.2	19.6	0.6	195.3	1.953	19.9	19.5	0.4	1.4	0.5
27	156.3	1.563	21.4	20.2	1.2	112.3	1.123	20.7	21.1	-0.4	73.2	0.732	20.2	19.5	0.7	190.4	1.904	20.0	19.7	0.4	1.3	0.5
28	151.4	1.514	21.3	20.2	1.1	107.4	1.074	20.8	21.0	-0.1	68.4	0.684	20.1	19.6	0.5	190.4	1.904	19.9	19.4	0.5	1.3	0.5
29	151.4	1.514	21.4	20.2	1.2	102.5	1.025	20.8	21.0	-0.1	63.5	0.635	20.1	19.6	0.5	190.4	1.904	20.0	19.5	0.5	1.3	0.6
30	146.5	1.465	21.3	20.2	1.1	102.5	1.025	20.6	21.1	-0.5	63.5	0.635	20.2	19.6	0.6	185.5	1.855	20.0	19.7	0.4	1.2	0.5
31	146.5	1.465	21.3	20.2	1.1	97.7	0.977	20.9	21.1	-0.2	58.6	0.586	20.2	19.6	0.6	185.5	1.855	19.9	19.3	0.6	1.2	0.6
32	141.6	1.416	21.3	20.2	1.1	92.8	0.928	20.7	21.0	-0.2	53.7	0.537	20.1	19.6	0.5	185.5	1.855	19.9	19.4	0.5	1.2	0.6
33	136.7	1.367	21.3	20.2	1.1	87.9	0.879	20.7	21.0	-0.2	53.7	0.537	20.1	19.5	0.6	180.7	1.807	20.0	19.4	0.6	1.1	0.6
34	136.7	1.367	21.1	20.2	1.0	87.9	0.879	20.7	21.0	-0.2	48.8	0.488	20.0	19.6	0.4	180.7	1.807	19.9	19.3	0.6	1.1	0.6
35	131.8	1.318	21.3	20.2	1.1	83.0	0.830	20.7	21.1	-0.4	43.9	0.439	20.0	19.5	0.5	175.8	1.758	20.0	19.7	0.4	1.1	0.6
36	131.8	1.318	21.4	20.2	1.2	78.1	0.781	20.6	21.1	-0.5	43.9	0.439	20.0	19.6	0.4	175.8	1.758	20.0	19.5	0.5	1.1	0.6
37	131.8	1.318	21.3	20.1	1.2	78.1	0.781	20.7	21.0	-0.2	39.1	0.391	20.0	19.5	0.5	175.8	1.758	19.9	19.4	0.5	1.1	0.6
38	127.0	1.270	21.3	20.1	1.2	73.2	0.732	20.7	21.0	-0.2	39.1	0.391	20.0	19.6	0.4	170.9	1.709	20.0	19.8	0.2	1.0	0.6
39	127.0	1.270	21.3	20.2	1.1	73.2	0.732	20.7	21.0	-0.2	34.2	0.342	20.0	19.6	0.4	170.9	1.709	20.0	19.7	0.4	1.0	0.6
40	122.1	1.221	21.1	20.2	1.0	68.4	0.684	20.7	21.0	-0.2	34.2	0.342	19.9	19.6	0.2	170.9	1.709	19.8	19.8	0.0	1.0	0.6
41	122.1	1.221	21.3	20.1	1.2	68.4	0.684	20.6	21.0	-0.4	34.2	0.342	20.0	19.6	0.4	166.0	1.660	20.0	20.0	0.0	1.0	0.6
42	117.2	1.172	21.3	20.1	1.2	63.5	0.635	20.6	21.1	-0.5	29.3	0.293	20.0	19.6	0.4	166.0	1.660	19.9	19.9	0.0	0.9	0.6
43	112.3	1.123	21.3	20.1	1.2	58.6	0.586	20.8	21.1	-0.4	29.3	0.293	19.9	19.6	0.2	166.0	1.660	19.9	20.0	-0.1	0.9	0.6
44	112.3	1.123	21.3	20.1	1.2	58.6	0.586	20.5	21.0	-0.5	24.4	0.244	20.0	19.6	0.4	161.1	1.611	20.0	20.0	0.0	0.9	0.6
45	112.3	1.123	21.3	20.1	1.2	53.7	0.537	20.6	21.1	-0.5	24.4	0.244	20.0	19.6	0.4	161.1	1.611	19.8	20.0	-0.2	0.9	0.6
46	107.4	1.074	21.3	20.1	1.2	53.7	0.537	20.6	21.0	-0.4	24.4	0.244	19.9	19.6	0.2	161.1	1.611	19.8	20.0	-0.2	0.9	0.6

Table A.3-8 continued...

47	107.4	1.074	21.3	20.1	1.2	48.8	0.488	20.6	21.0	-0.4	24.4	0.244	20.0	19.6	0.4	156.3	1.563	19.8	19.9	-0.1	**0.8**	0.6
48	107.4	1.074	21.3	20.1	1.2	48.8	0.488	20.5	21.0	-0.5	19.5	0.195	20.1	19.8	0.2	156.3	1.563	19.8	20.0	-0.2	**0.8**	0.6
49	102.5	1.025	21.3	20.2	1.1	48.8	0.488	20.4	20.8	-0.5	19.5	0.195	19.9	19.6	0.2	151.4	1.514	19.9	20.0	-0.1	**0.8**	0.6
50	102.5	1.025	21.3	20.1	1.2	43.9	0.439	20.6	21.0	-0.4	19.5	0.195	19.9	19.6	0.2	151.4	1.514	19.9	19.9	0.0	**0.8**	0.6
51	97.7	0.977	21.3	20.2	1.1	43.9	0.439	20.6	21.1	-0.5	19.5	0.195	19.9	19.8	0.1	151.4	1.514	19.8	19.8	0.0	**0.8**	0.6
52	97.7	0.977	21.1	20.2	1.0	39.1	0.391	20.5	21.0	-0.5	14.6	0.146	20.1	19.8	0.2	151.4	1.514	19.9	19.8	0.1	**0.8**	0.6
53	92.8	0.928	21.3	20.2	1.1	39.1	0.391	20.4	21.0	-0.6	14.6	0.146	19.9	19.6	0.2	151.4	1.514	19.8	19.5	0.2	**0.7**	0.6
54	92.8	0.928	21.3	20.2	1.1	34.2	0.342	20.5	20.8	-0.4	14.6	0.146	19.8	19.6	0.1	146.5	1.465	19.8	19.5	0.2	**0.7**	0.6
55	92.8	0.928	21.3	20.2	1.1	34.2	0.342	20.5	21.0	-0.5	14.6	0.146	19.9	19.8	0.1	146.5	1.465	19.9	19.5	0.4	**0.7**	0.6
56	87.9	0.879	21.3	20.2	1.1	34.2	0.342	20.5	21.0	-0.5	14.6	0.146	19.9	19.8	0.1	146.5	1.465	19.8	19.3	0.5	**0.7**	0.6
57	87.9	0.879	21.3	20.2	1.1	29.3	0.293	20.5	21.0	-0.5	14.6	0.146	19.8	19.6	0.1	146.5	1.465	19.8	19.3	0.5	**0.7**	0.6
58	87.9	0.879	21.3	20.1	1.2	29.3	0.293	20.4	21.0	-0.6	14.6	0.146	19.9	19.8	0.1	141.6	1.416	19.8	19.0	0.7	**0.7**	0.6
59	83.0	0.830	21.3	20.2	1.1	29.3	0.293	20.4	21.0	-0.6	14.6	0.146	19.9	19.8	0.1	141.6	1.416	19.9	19.3	0.6	**0.7**	0.6
60	83.0	0.830	21.3	20.1	1.2	29.3	0.293	20.5	21.0	-0.5	9.8	0.098	19.8	19.8	0.0	141.6	1.416	19.6	18.9	0.7	**0.7**	0.6
61	78.1	0.781	21.3	20.1	1.2	24.4	0.244	20.5	21.1	-0.6						136.7	1.367	19.5	18.9	0.6	**0.6**	0.6
62	78.1	0.781	21.3	20.2	1.1	24.4	0.244	20.4	21.0	-0.6						136.7	1.367	19.6	18.9	0.7	**0.6**	0.6
63	78.1	0.781	21.3	20.1	1.2	24.4	0.244	20.5	21.0	-0.5						136.7	1.367	19.7	18.9	0.7	**0.6**	0.6
64	73.2	0.732	21.3	20.2	1.1	24.4	0.244	20.4	21.0	-0.6						136.7	1.367	19.6	18.9	0.7	**0.6**	0.6
65	73.2	0.732	21.3	20.1	1.2	19.5	0.195	20.4	21.0	-0.6						131.8	1.318	19.8	19.2	0.6	**0.6**	0.6
66	73.2	0.732	21.3	20.2	1.1	19.5	0.195	20.4	21.0	-0.6						131.8	1.318	19.5	18.9	0.6	**0.6**	0.6
67	73.2	0.732	21.1	20.1	1.1	19.5	0.195	20.5	20.8	-0.4						131.8	1.318	19.6	19.1	0.5	**0.6**	0.6
68	68.4	0.684	21.3	20.2	1.1	19.5	0.195	20.5	21.0	-0.5						131.8	1.318	19.6	19.0	0.6	**0.5**	0.6
69	68.4	0.684	21.1	20.2	1.0	14.6	0.146	20.4	21.0	-0.6						131.8	1.318	19.5	19.0	0.5	**0.5**	0.6
70	68.4	0.684	21.1	20.1	1.1	14.6	0.146	20.5	21.0	-0.5						127.0	1.270	19.6	19.2	0.4	**0.5**	0.6
71	68.4	0.684	21.3	20.1	1.2	14.6	0.146	20.4	20.8	-0.5						127.0	1.270	19.6	19.2	0.4	**0.5**	0.6
72	63.5	0.635	21.3	20.2	1.1	14.6	0.146	20.7	21.1	-0.5						127.0	1.270	19.5	19.4	0.1	**0.5**	0.6
73	63.5	0.635	21.1	20.1	1.1	14.6	0.146	20.4	21.0	-0.6						127.0	1.270	19.6	19.4	0.2	**0.5**	0.6
74	63.5	0.635	21.1	20.1	1.1	14.6	0.146	20.4	21.0	-0.6						122.1	1.221	19.5	19.4	0.1	**0.5**	0.6
75	58.6	0.586	21.1	20.2	1.0	14.6	0.146	20.4	21.0	-0.6						122.1	1.221	19.5	19.5	0.0	**0.5**	0.5
76	58.6	0.586	21.1	20.1	1.1	14.6	0.146	20.4	21.0	-0.6						122.1	1.221	19.5	19.5	0.0	**0.5**	0.5
77	58.6	0.586	21.1	20.2	1.0	9.8	0.098	20.5	21.1	-0.6						122.1	1.221	19.4	19.5	-0.1	**0.5**	0.6
78	53.7	0.537	21.3	20.2	1.1	9.8	0.098	20.4	21.0	-0.6						117.2	1.172	19.5	19.7	-0.2	**0.5**	0.5
79	53.7	0.537	21.1	20.1	1.1	9.8	0.098	20.4	21.0	-0.6						117.2	1.172	19.8	19.8	0.0	**0.5**	0.5
80	53.7	0.537	21.3	20.1	1.2	9.8	0.098	20.4	20.8	-0.5						117.2	1.172	19.4	19.5	-0.1	**0.5**	0.5
81	53.7	0.537	21.3	20.1	1.2	9.8	0.098	20.4	21.0	-0.6						117.2	1.172	19.6	19.6	0.0	**0.5**	0.5
82	53.7	0.537	21.1	20.2	1.0	9.8	0.098	20.4	20.8	-0.5						117.2	1.172	19.4	19.4	0.0	**0.5**	0.5
83	48.8	0.488	21.1	20.2	1.0	9.8	0.098	20.4	21.0	-0.6						112.3	1.123	19.5	19.5	0.0	**0.4**	0.5
84	48.8	0.488	21.1	20.2	1.0	9.8	0.098	20.2	21.0	-0.7						112.3	1.123	19.6	19.5	0.1	**0.4**	0.5
85	48.8	0.488	21.3	20.2	1.1	9.8	0.098	20.4	21.0	-0.6						112.3	1.123	19.5	19.2	0.2	**0.4**	0.5
86	48.8	0.488	21.1	20.1	1.1	9.8	0.098	20.5	21.1	-0.6						112.3	1.123	19.5	19.2	0.2	**0.4**	0.5
87	48.8	0.488	21.3	20.2	1.1	9.8	0.098	20.4	21.0	-0.6						107.4	1.074	19.4	19.0	0.4	**0.4**	0.5
88	43.9	0.439	21.3	20.2	1.1	9.8	0.098	20.4	21.1	-0.7						107.4	1.074	19.4	18.9	0.5	**0.4**	0.5
89	43.9	0.439	21.3	20.2	1.1	9.8	0.098	20.4	21.0	-0.6						107.4	1.074	19.5	19.2	0.4	**0.4**	0.5
90	43.9	0.439	21.1	20.2	1.0	9.8	0.098	20.4	21.0	-0.6						107.4	1.074	19.6	19.0	0.6	**0.4**	0.5
91	43.9	0.439	21.3	20.1	1.2	9.8	0.098	20.4	21.0	-0.6						107.4	1.074	19.4	19.0	0.4	**0.4**	0.5
92	43.9	0.439	21.1	20.2	1.0	9.8	0.098	20.4	21.0	-0.6						107.4	1.074	19.7	19.3	0.4	**0.4**	0.5
93	39.1	0.391	21.1	20.2	1.0	9.8	0.098	20.4	21.1	-0.7						102.5	1.025	19.4	18.9	0.5	**0.4**	0.5
94	39.1	0.391	21.3	20.2	1.1	4.9	0.049	20.4	21.1	-0.7						102.5	1.025	19.4	19.0	0.4	**0.4**	0.5
95	39.1	0.391	21.1	20.2	1.0	9.8	0.098	20.4	21.0	-0.6						102.5	1.025	19.4	19.0	0.4	**0.4**	0.5
96	39.1	0.391	21.1	20.2	1.0	9.8	0.098	20.2	21.0	-0.7						102.5	1.025	19.4	19.0	0.4	**0.4**	0.5
97	34.2	0.342	21.3	20.2	1.1	4.9	0.049	20.4	21.0	-0.6						102.5	1.025	19.4	19.2	0.1	**0.4**	0.5
98	34.2	0.342	21.1	20.2	1.0	4.9	0.049	20.2	21.0	-0.7						97.7	0.977	19.4	19.1	0.2	**0.3**	0.4
99	34.2	0.342	21.1	20.2	1.0	4.9	0.049	20.2	21.0	-0.7						97.7	0.977	19.4	19.1	0.2	**0.3**	0.4
100	24.4	0.244	21.1	20.2	1.0	4.9	0.049	20.2	21.0	-0.7						97.7	0.977	19.4	19.1	0.2	**0.3**	0.5

Table A.3-9 Measured gauge pressure in the bin and temperatures inside and outside of the bin for four replicates of sample 3' (no caulking with additional protective coating) when bin was empty and carbon dioxide purging time was 60 min.

Sample No	E31-pc					E32-pc					E33-pc					E34-pc					Pg	
Time	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout	Pg	Pg	Tin	Tout	Tin-Tout		
(s)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	(mmH2O)	(kPa)	(°C)	(°C)	(°C)	Mean	SD
0	253.9	2.539	21.1	20.5	0.6	253.9	2.539	19.7	20.7	-1.0	253.9	2.539	22.8	21.9	1.0	253.9	2.539	20.3	19.5	0.9	2.5	0.0
1	249.0	2.490	21.1	20.5	0.6	244.1	2.441	19.3	20.6	-1.3	224.6	2.246	22.8	21.9	1.0	205.1	2.051	20.0	19.5	0.5	2.3	0.2
2	249.0	2.490	21.1	20.5	0.6	234.4	2.344	19.0	20.5	-1.5	210.0	2.100	22.6	21.7	0.8	170.9	1.709	19.7	19.5	0.2	2.2	0.3
3	244.1	2.441	21.1	20.5	0.6	229.5	2.295	19.0	20.6	-1.6	200.2	2.002	22.6	21.7	0.8	141.6	1.416	19.4	19.4	0.0	2.0	0.5
4	239.3	2.393	21.1	20.5	0.6	229.5	2.295	18.7	20.4	-1.7	190.4	1.904	22.6	21.7	0.8	117.2	1.172	19.6	19.5	0.1	1.9	0.6
5	234.4	2.344	21.1	20.5	0.6	224.6	2.246	18.7	20.4	-1.7	185.5	1.855	22.3	21.7	0.6	97.7	0.977	19.4	19.4	0.0	1.9	0.6
6	234.4	2.344	21.1	20.5	0.6	224.6	2.246	18.9	20.6	-1.7	175.8	1.758	22.4	21.7	0.7	83.0	0.830	19.4	19.5	-0.1	1.8	0.7
7	229.5	2.295	21.1	20.5	0.6	219.7	2.197	18.9	20.4	-1.6	170.9	1.709	22.3	21.7	0.6	68.4	0.684	19.2	19.6	-0.4	1.7	0.7
8	229.5	2.295	21.1	20.5	0.6	219.7	2.197	18.7	20.4	-1.7	166.0	1.660	22.3	21.7	0.6	58.6	0.586	19.5	19.6	-0.1	1.7	0.8
9	224.6	2.246	21.1	20.5	0.6	214.8	2.148	18.9	20.4	-1.6	156.3	1.563	22.4	21.7	0.7	48.8	0.488	19.2	19.5	-0.2	1.6	0.8
10	219.7	2.197	20.8	20.3	0.5	214.8	2.148	18.7	20.3	-1.6	151.4	1.514	22.4	21.7	0.7	39.1	0.391	19.4	19.6	-0.2	1.6	0.8
11	219.7	2.197	21.1	20.5	0.6	210.0	2.100	18.7	20.1	-1.5	146.5	1.465	22.4	21.7	0.7	34.2	0.342	19.4	19.6	-0.2	1.5	0.9
12	214.8	2.148	20.9	20.5	0.5	210.0	2.100	18.7	20.4	-1.7	141.6	1.416	22.4	21.7	0.7	29.3	0.293	19.2	19.6	-0.4	1.5	0.9
13	214.8	2.148	21.1	20.5	0.6	205.1	2.051	18.5	20.1	-1.6	136.7	1.367	22.4	21.7	0.7	24.4	0.244	19.2	19.3	-0.1	1.5	0.9
14	210.0	2.100	20.9	20.5	0.5	205.1	2.051	18.6	20.1	-1.5	131.8	1.318	22.3	21.8	0.5	19.5	0.195	19.2	19.5	-0.2	1.4	0.9
15	210.0	2.100	20.9	20.5	0.5	205.1	2.051	18.6	20.2	-1.6	127.0	1.270	22.3	21.7	0.6	19.5	0.195	19.2	19.1	0.1	1.4	0.9
16	205.1	2.051	20.9	20.5	0.5	200.2	2.002	18.5	20.1	-1.6	122.1	1.221	22.4	21.7	0.7	14.6	0.146	19.3	19.3	0.0	1.4	0.9
17	205.1	2.051	21.1	20.5	0.6	200.2	2.002	18.6	20.1	-1.5	117.2	1.172	22.3	21.7	0.6	14.6	0.146	19.2	19.1	0.1	1.3	0.9
18	200.2	2.002	20.9	20.5	0.5	195.3	1.953	18.6	20.2	-1.6	112.3	1.123	22.3	21.7	0.6	14.6	0.146	19.2	19.1	0.1	1.3	0.9
19	200.2	2.002	20.9	20.5	0.5	195.3	1.953	18.8	20.3	-1.6	107.4	1.074	22.3	21.7	0.6	14.6	0.146	19.4	19.2	0.1	1.3	0.9
20	195.3	1.953	20.9	20.5	0.5	195.3	1.953	18.6	20.1	-1.5	102.5	1.025	22.3	21.6	0.7	9.8	0.098	19.4	19.2	0.1	1.3	0.9
21	190.4	1.904	20.9	20.5	0.5	190.4	1.904	18.6	20.1	-1.5	97.7	0.977	22.4	21.6	0.8						1.2	0.9
22	190.4	1.904	20.9	20.5	0.5	190.4	1.904	18.6	20.1	-1.5	97.7	0.977	22.4	20.7	1.7						1.2	0.9
23	190.4	1.904	21.1	20.5	0.6	185.5	1.855	18.5	19.9	-1.5	92.8	0.928	22.3	21.4	0.8						1.2	0.9
24	185.5	1.855	20.9	20.5	0.5	185.5	1.855	18.6	20.1	-1.5	92.8	0.928	22.3	21.4	0.8						1.2	0.9
25	185.5	1.855	20.9	20.5	0.5	185.5	1.855	18.5	20.1	-1.6	87.9	0.879	22.3	21.4	0.8						1.1	0.9
26	180.7	1.807	20.9	20.5	0.5	180.7	1.807	18.6	19.8	-1.2	87.9	0.879	22.3	21.4	0.8						1.1	0.9
27	180.7	1.807	20.9	20.5	0.5	180.7	1.807	18.5	19.8	-1.2	83.0	0.830	22.3	21.6	0.7						1.1	0.9
28	175.8	1.758	20.9	20.3	0.6	180.7	1.807	18.4	19.8	-1.3	83.0	0.830	22.3	21.6	0.7						1.1	0.9
29	175.8	1.758	20.9	20.5	0.5	175.8	1.758	18.4	19.9	-1.5	78.1	0.781	22.3	21.6	0.7						1.1	0.9
30	170.9	1.709	20.9	20.5	0.5	175.8	1.758	18.4	19.8	-1.3	78.1	0.781	22.3	21.6	0.7						1.1	0.8
31	170.9	1.709	20.9	20.5	0.5	175.8	1.758	18.4	19.8	-1.3	78.1	0.781	22.3	21.6	0.7						1.1	0.8
32	170.9	1.709	20.9	20.5	0.5	170.9	1.709	18.4	19.8	-1.3	73.2	0.732	22.3	21.6	0.7						1.0	0.8
33	166.0	1.660	20.9	20.5	0.5	170.9	1.709	18.4	19.9	-1.5	73.2	0.732	22.3	21.6	0.7						1.0	0.8
34	166.0	1.660	20.9	20.5	0.5	170.9	1.709	18.4	19.9	-1.5	68.4	0.684	22.3	21.6	0.7						1.0	0.8
35	166.0	1.660	20.9	20.3	0.6	166.0	1.660	18.4	19.9	-1.5	68.4	0.684	22.0	21.6	0.4						1.0	0.8
36	161.1	1.611	20.9	20.5	0.5	166.0	1.660	18.4	19.9	-1.5	63.5	0.635	22.0	21.6	0.4						1.0	0.8
37	161.1	1.611	20.9	20.3	0.6	166.0	1.660	18.5	19.9	-1.3	63.5	0.635	22.0	21.6	0.4						1.0	0.8
38	156.3	1.563	20.9	20.5	0.5	161.1	1.611	18.5	19.9	-1.3	58.6	0.586	22.1	21.6	0.6						0.9	0.8
39	156.3	1.563	20.9	20.5	0.5	161.1	1.611	18.5	19.9	-1.3	58.6	0.586	22.1	21.6	0.6						0.9	0.8
40	151.4	1.514	20.8	20.3	0.5	161.1	1.611	18.4	19.9	-1.5	53.7	0.537	22.1	21.6	0.6						0.9	0.8
41	151.4	1.514	20.8	20.5	0.4	156.3	1.563	18.5	19.9	-1.3	53.7	0.537	22.1	21.6	0.6						0.9	0.8
42	151.4	1.514	20.8	20.5	0.4	156.3	1.563	18.2	20.0	-1.7	48.8	0.488	22.1	21.6	0.6						0.9	0.8
43	146.5	1.465	20.9	20.5	0.5	156.3	1.563	18.5	19.9	-1.3	48.8	0.488	22.1	21.6	0.6						0.9	0.8
44	146.5	1.465	20.9	20.5	0.5	151.4	1.514	18.4	20.0	-1.6	43.9	0.439	21.9	21.6	0.3						0.9	0.8
45	146.5	1.465	20.8	20.5	0.4	151.4	1.514	18.4	19.9	-1.5	43.9	0.439	21.9	21.6	0.3						0.9	0.8
46	141.6	1.416	20.5	20.2	0.4	151.4	1.514	18.5	19.9	-1.3	43.9	0.439	21.9	21.6	0.3						0.8	0.7

Table A.3-9 continued...

47	141.6	1.416	20.8	20.5	0.4	151.4	1.514	18.5	19.9	-1.3	43.9	0.439	21.9	21.6	0.3
48	141.6	1.416	20.8	20.5	0.4	151.4	1.514	18.5	19.9	-1.3	39.1	0.391	22.1	21.6	0.6
49	136.7	1.367	20.8	20.3	0.5	146.5	1.465	18.5	19.8	-1.2	39.1	0.391	22.1	21.6	0.6
50	136.7	1.367	20.8	20.3	0.5	146.5	1.465	18.4	19.9	-1.5	39.1	0.391	22.1	21.6	0.6
51	136.7	1.367	20.8	20.3	0.5	146.5	1.465	18.5	19.8	-1.2	39.1	0.391	22.1	21.6	0.6
52	131.8	1.318	20.8	20.3	0.5	141.6	1.416	18.4	19.7	-1.3	39.1	0.391	22.1	21.6	0.6
53	131.8	1.318	20.8	20.5	0.4	141.6	1.416	18.4	19.7	-1.3	34.2	0.342	22.0	21.6	0.4
54	131.8	1.318	20.9	20.5	0.5	141.6	1.416	18.5	19.9	-1.3	34.2	0.342	22.0	21.6	0.4
55	127.0	1.270	20.8	20.5	0.4	141.6	1.416	18.2	19.6	-1.3	34.2	0.342	22.0	21.6	0.4
56	127.0	1.270	20.7	20.5	0.2	136.7	1.367	18.4	19.7	-1.3	34.2	0.342	22.0	21.6	0.4
57	127.0	1.270	20.8	20.5	0.4	136.7	1.367	18.2	19.7	-1.5	34.2	0.342	22.0	21.6	0.4
58	122.1	1.221	20.8	20.3	0.5	136.7	1.367	18.4	19.7	-1.3	29.3	0.293	22.1	21.6	0.6
59	122.1	1.221	20.8	20.5	0.4	136.7	1.367	18.2	19.5	-1.3	29.3	0.293	22.1	21.6	0.6
60	122.1	1.221	20.8	20.5	0.4	131.8	1.318	18.2	19.5	-1.3	29.3	0.293	22.1	21.6	0.6
61	117.2	1.172	20.8	20.5	0.4	131.8	1.318	18.1	19.5	-1.5	29.3	0.293	22.1	21.6	0.6
62	117.2	1.172	20.8	20.5	0.4	131.8	1.318	18.2	19.7	-1.5	29.3	0.293	22.1	21.6	0.6
63	117.2	1.172	20.7	20.5	0.2	127.0	1.270	18.1	19.4	-1.3	24.4	0.244	22.1	21.6	0.6
64	112.3	1.123	20.7	20.5	0.2	127.0	1.270	18.2	19.5	-1.3	24.4	0.244	22.1	21.6	0.6
65	112.3	1.123	20.7	20.5	0.2	127.0	1.270	18.1	19.4	-1.3	24.4	0.244	22.1	21.6	0.6
66	112.3	1.123	20.4	20.3	0.1	127.0	1.270	18.2	19.5	-1.3	24.4	0.244	22.1	21.6	0.6
67	112.3	1.123	20.7	20.5	0.2	122.1	1.221	18.2	19.5	-1.3	19.5	0.195	22.1	21.6	0.6
68	112.3	1.123	20.7	20.5	0.2	122.1	1.221	18.1	19.4	-1.3	19.5	0.195	22.1	21.6	0.6
69	107.4	1.074	20.7	20.5	0.2	122.1	1.221	18.2	19.5	-1.3	19.5	0.195	22.1	21.6	0.6
70	107.4	1.074	20.7	20.5	0.2	117.2	1.172	18.1	19.7	-1.6	19.5	0.195	22.0	21.6	0.4
71	107.4	1.074	20.6	20.5	0.1	117.2	1.172	18.4	19.8	-1.5	19.5	0.195	22.1	21.6	0.6
72	102.5	1.025	20.7	20.5	0.2	117.2	1.172	18.2	19.7	-1.5	14.6	0.146	22.0	21.6	0.4
73	102.5	1.025	20.6	20.5	0.1	117.2	1.172	18.1	19.5	-1.5	14.6	0.146	22.1	21.6	0.6
74	102.5	1.025	20.6	20.5	0.1	117.2	1.172	17.9	19.5	-1.6	14.6	0.146	22.0	21.6	0.4
75	102.5	1.025	20.6	20.5	0.1	117.2	1.172	18.1	19.7	-1.6	14.6	0.146	22.1	21.6	0.6
76	97.7	0.977	20.5	20.5	0.0	117.2	1.172	18.2	19.8	-1.6	14.6	0.146	22.0	21.6	0.4
77	97.7	0.977	20.5	20.5	0.0	117.2	1.172	18.4	20.1	-1.7	14.6	0.146	22.0	21.6	0.4
78	97.7	0.977	20.6	20.5	0.1	112.3	1.123	18.4	20.0	-1.6	14.6	0.146	22.1	21.6	0.6
79	97.7	0.977	20.5	20.3	0.1	112.3	1.123	18.3	20.1	-1.8	9.8	0.098	21.8	21.6	0.2
80	92.8	0.928	20.5	20.5	0.0	112.3	1.123	18.3	20.0	-1.7	9.8	0.098	22.0	21.6	0.4
81	92.8	0.928	20.5	20.5	0.0	112.3	1.123	18.3	19.9	-1.6	9.8	0.098	21.8	21.6	0.2
82	92.8	0.928	20.3	20.5	-0.1	112.3	1.123	18.3	20.0	-1.7	9.8	0.098	22.0	21.6	0.4
83	92.8	0.928	20.5	20.5	0.0	112.3	1.123	18.3	20.0	-1.7	9.8	0.098	21.8	21.6	0.2
84	92.8	0.928	20.3	20.5	-0.1	107.4	1.074	18.5	20.2	-1.7	9.8	0.098	22.0	21.6	0.4
85	87.9	0.879	20.5	20.5	0.0	107.4	1.074	18.3	20.1	-1.7	4.9	0.049	22.2	21.6	0.6
86	87.9	0.879	20.2	20.5	-0.2	107.4	1.074	18.2	19.9	-1.7	4.9	0.049	22.0	21.6	0.5
87	87.9	0.879	20.3	20.5	-0.1	107.4	1.074	18.5	20.1	-1.6	4.9	0.049	22.2	21.6	0.6
88	87.9	0.879	20.2	20.5	-0.2	107.4	1.074	18.2	20.3	-2.1	4.9	0.049	22.0	21.6	0.5
89	87.9	0.879	20.3	20.5	-0.1	107.4	1.074	18.3	20.2	-1.8					
90	83.0	0.830	20.2	20.5	-0.2	107.4	1.074	18.3	20.1	-1.7					
91	83.0	0.830	20.3	20.5	-0.1	107.4	1.074	18.5	20.2	-1.7					
92	83.0	0.830	20.2	20.5	-0.2	107.4	1.074	18.5	20.2	-1.7					
93	83.0	0.830	20.3	20.3	0.0	107.4	1.074	18.5	20.2	-1.7					
94	78.1	0.781	20.2	20.5	-0.2	107.4	1.074	18.5	20.2	-1.7					
95	78.1	0.781	20.2	20.5	-0.2	102.5	1.025	18.5	20.2	-1.7					
96	78.1	0.781	20.2	20.5	-0.2	102.5	1.025	18.4	20.2	-1.8					
97	78.1	0.781	20.2	20.5	-0.2	102.5	1.025	18.5	20.2	-1.7					
98	78.1	0.781	20.1	20.5	-0.4	102.5	1.025	18.5	20.2	-1.7					
99	73.2	0.732	20.1	20.5	-0.4	102.5	1.025	18.4	20.1	-1.7					
100	73.2	0.732	20.1	20.5	-0.4	97.7	0.977	18.4	20.2	-1.8					
101	73.2	0.732	20.1	20.5	-0.4	97.7	0.977	18.4	20.2	-1.8					

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0.4	0.5
0.4	0.5
0.4	0.5

Table A.4 Barometric pressure (kPa) data from the Winnipeg Station for the tests carried out on sample 0 (control-no seam).

Test No.	Date	Beginning of the test	Barometric pressure (kPa) Time elapsed (h) 0	2	4	6	8	10	12	14	16	18	20	22	24
G01-0	1.06.95	10:00 AM	98.06	98.19	98.22	98.29	98.32	98.29	98.32	98.32	98.35	98.42	98.42	98.45	98.49
G01-15	3.06.95	12:00 PM	98.82	98.88	98.85	98.82	98.78	98.78	98.78	98.78	98.82	98.82	98.85	98.82	98.85
G01-30	5.06.95	08:00 AM	98.16	98.09	98.06	97.99	97.89	97.76	97.63	97.43	97.29	97.29	97.29	97.16	97.10
G01-60	6.06.95	10:00 AM	97.03	97.03	97.00	96.96	96.96	96.96	97.10	97.39	97.53	97.92	98.12	98.32	98.52
G02-0	26.06.95	12:00 PM	98.78	98.82	98.75	98.72	98.65	98.62	98.59	98.59	98.59	98.55	98.49	98.52	98.55
G02-15	28.06.95	10:00 AM	98.25	98.25	98.29	98.22	98.19	98.12	98.09	98.06	98.16	98.25	98.32	98.35	98.39
G02-30	29.06.95	03:15 PM	98.49	98.59	98.59	98.62	98.72	98.82	98.95	98.98	99.02	99.05	99.08	99.18	99.25
G02-60	1.07.95	08:30 AM	99.05	99.02	98.98	98.98	98.95	98.92	98.85	98.78	98.68	98.59	98.52	98.49	98.42
G03-0	5.09.95	10:00 AM	99.25	99.25	99.11	99.11	98.98	98.85	98.68	98.55	98.45	98.35	98.32	98.12	98.09
G03-15	7.09.95	12:15 PM	100.24	100.31	100.27	100.14	99.98	99.84	99.74	99.68	99.58	99.51	99.45	99.38	99.35
G03-30	11.09.95	08:00 AM	98.39	98.29	98.22	98.19	98.16	98.06	97.92	97.82	97.79	97.76	97.72	97.72	97.63
G03-60	14.09.95	10:00 AM	99.58	99.55	99.51	99.41	99.21	99.05	98.92	98.8298.82	98.82	98.75	98.62	98.49	98.32
G04-0	25.09.95	09:30 AM	97.82	97.82	97.82	97.86	97.82	97.79	97.72	97.76	97.82	97.89	97.92	97.92	97.96
G04-15	27.09.95	02:45 PM	98.25	98.25	98.22	98.16	98.09	98.06	98.09	98.06	97.96	97.79	97.69	97.63	97.66
G04-30	29.09.95	10:00 AM	97.63	97.66	97.72	97.63	97.66	97.66	97.63	97.56	97.56	97.63	97.79	97.96	98.02
G04-60	1.10.95	10:00 AM	98.32	98.32	98.35	98.39	98.32	98.29	98.32	98.39	98.45	98.49	98.49	98.52	98.49
E01-0	9.06.95	12:15 PM	99.11	99.05	99.02	98.92	98.85	98.75	98.75	98.82	98.92	98.88	98.88	98.85	98.82
E01-15	10.06.95	02:00 PM	98.98	99.02	99.05	99.02	99.02	99.02	99.05	99.11	99.15	99.11	99.15	99.18	99.18
E01-30	12.06.95	09:00 AM	98.88	98.95	98.95	98.92	98.82	98.72	98.59	98.52	98.39	98.35	98.32	98.29	98.22
E01-60	15.06.95	12:15 PM	98.12	98.09	98.12	98.12	98.02	97.99	97.89	97.96	98.06	98.06	98.09	98.12	98.19
E02-0	3.07.95	12:00 PM	97.33	97.33	97.36	97.36	97.39	97.46	97.53	97.53	97.69	97.72	97.72	97.79	97.86
E02-15	5.07.95	08:15 AM	98.12	98.09	98.09	98.02	97.99	97.96	97.99	98.06	98.09	98.12	98.16	98.19	98.16
E02-30	7.07.95	08:30 AM	98.98	98.98	98.98	98.95	98.88	98.82	98.78	98.68	98.68	98.62	98.62	98.59	98.55

E02-60	15.07.95	12:15 PM	98.92	98.88	98.88	98.78	98.68	98.62	98.55	98.55	98.62	98.59	98.55	98.49	98.45
E03-0	16.09.95	08:00 AM	97.76	98.09	98.19	98.42	98.65	98.78	98.85	98.92	98.98	99.08	99.15	99.18	99.18
E03-15	17.09.95	10:30 AM	99.15	99.11	99.08	99.02	98.92	98.82	98.75	98.75	98.75	98.82	98.88	99.02	99.02
E03-30	19.09.95	11:00 AM	99.58	99.61	99.68	99.64	99.55	99.45	99.45	99.45	99.48	99.45	99.45	99.45	99.55
E03-60	20.09.95	02:45 PM	99.64	99.68	99.71	99.68	99.74	99.81	99.98	100.07	100.17	100.21	100.27	100.34	100.37
E04-0	7.10.95	09:30 AM	98.65	98.68	98.72	98.72	98.72	98.62	98.59	98.59	98.62	98.68	98.68	98.68	98.65
E04-15	9.10.95	11:30 AM	98.25	98.25	98.25	98.16	98.06	97.99	97.92	97.96	97.92	97.99	98.06	98.16	98.19
E04-30	10.10.95	01:30 PM	98.22	98.16	98.02	97.82	97.69	97.66	97.59	97.46	97.39	97.39	97.46	97.63	97.72
E04-60	12.10.95	08:00 AM	97.46	97.26	97.13	97.00	96.83	96.83	96.86	96.90	97.06	97.10	97.23	97.33	97.46

Table A.5 Barometric pressure (kPa) data from the Winnipeg Station for the tests carried out on sample 1 (2 row caulking).

			Barometric pressure (kPa)					
Test No.	Date	Beginning	Time elapsed (h)					
		of the test	0	1	2	3	4	5
G11-0	17.11.95	09:00 AM	98.92	98.92	98.92	98.95	98.98	99.02
G11-15	18.11.95	11:45 AM	98.95	98.92	98.85	98.82	98.78	98.75
G11-30	20.11.95	10:00 AM	98.06	98.12	98.16	98.22	98.39	98.45
G11-60	22.11.95	10:30 AM	97.76	97.79	97.92	98.06	98.19	98.35
G12-0	14.02.96	09:00 AM	97.76	97.86	97.96	98.06	98.19	98.25
G12-15	15.02.96	01:00 PM	99.61	99.76	99.84	99.94	100.04	100.01
G12-30	16.02.96	03:15 PM	98.29	98.19	98.09	97.92	97.82	97.76
G12-60	17.02.96	02:30 PM	99.45	99.48	99.48	99.48	99.38	99.28
G13-0	19.03.96	09:00 AM	99.88	100.07	100.17	100.24	100.31	100.37
G13-15	19.03.96	05:00 PM	100.50	100.50	100.50	100.50	100.54	100.54
G13-30	21.03.96	12:30 PM	99.48	99.45	99.41	99.41	99.41	99.41
G13-60	23.03.96	10:00 AM	99.25	99.25	99.25	99.25	99.28	99.28
G14-0	28.05.96	08:30 AM	99.11	99.15	99.18	99.18	99.21	99.21
G14-15	28.05.96	12:00 PM	99.18	99.21	99.21	99.25	99.21	99.18
G14-30	29.05.96	02:00 PM	99.25	99.25	99.21	99.21	99.15	99.11
G14-60	30.05.96	04:00 PM	98.72	98.65	98.55	98.49	98.45	98.42
E11-0	27.11.95	12:00 PM	99.41	99.41	99.41	99.45	99.51	99.51
E11-15	28.11.95	12:30 PM	99.25	99.25	99.25	99.25	99.18	99.18
E11-30	29.11.95	02:30 PM	98.85	98.85	98.75	98.72	98.68	98.68
E11-60	1.12.95	01:00 PM	98.52	98.59	98.68	98.72	98.72	98.72
E11-60-pc	3.12.95	11:30 AM	98.12	98.22	98.39	98.49	98.65	98.65
E12-0	22.02.96	11:00 AM	98.16	98.09	97.99	97.99	97.96	97.96
E12-15	23.02.96	12:00 PM	96.50	96.50	96.50	96.50	96.40	96.40
E12-30	24.02.96	05:15 PM	98.09	98.22	98.32	98.35	98.42	98.42
E12-60	26.02.96	12:15 PM	100.04	100.01	100.07	100.07	100.04	100.04
E12-60-pc	29.02.96	01:00 PM	98.68	98.62	98.55	98.45	98.35	98.35
E13-0	28.03.96	08:00 AM	100.04	99.98	99.94	99.94	99.91	99.94
E13-15	28.03.96	10:00 AM	99.94	99.94	99.91	99.94	99.94	99.94
E13-30	29.03.96	12:00 PM	99.58	99.58	99.48	99.45	99.35	99.28
E13-60	31.03.96	01:00 PM	99.64	99.71	99.78	99.84	99.88	99.88
E13-60-pc	2.04.96	12:30 PM	99.35	99.28	99.28	99.21	99.18	99.11
E14-0	2.06.96	01:00 PM	100.62					
E14-15	3.06.96	09:00 AM	102.11					
E14-30	4.06.96	12:00 PM	101.25					
E14-60	5.06.96	03:00 PM	100.64					
E14-60-pc	6.06.96	05:30 PM	101.67					

Table A.6 Barometric pressure (kPa) data from the Winnipeg Station for the tests carried out on sample 2 (1 row caulking).

Test No.	Date	Beginning of the test	Barometric pressure (kPa) Time elapsed (h) 0	1	2	3	4	5
G21-0	15.01.96	08:00 AM	100.21	100.21	100.14	100.07	100.07	99.91
G21-15	15.01.96	08:45 AM	100.21	100.14	100.07	100.07	99.91	99.81
G21-30	16.01.96	11:30 AM	97.66	97.63	97.59	97.59	97.63	97.63
G21-60	17.01.96	02:00 PM	98.98	99.09	99.25	99.35	99.38	99.38
G22-0	3.03.96	09:30 AM	98.75	98.75	98.82	98.88	98.92	98.92
G22-15	3.03.96	12:30 PM	98.88	98.92	98.92	98.95	99.05	99.02
G22-30	5.03.96	12:30 PM	99.45	99.45	99.48	99.55	99.58	99.64
G22-60	6.03.96	12:30 PM	100.50	100.57	100.60	100.67	100.70	100.70
G23-0	26.04.96	09:00 AM	98.52	98.59	98.59	98.65	98.68	98.72
G23-15	27.04.96	04:00 PM	98.85	98.88	98.92	98.92	98.92	98.92
G23-30	29.04.96	10:30 AM	99.51	99.51	99.51	99.48	99.41	99.38
G23-60	1.05.96	10:00 AM	98.25	98.29	98.32	98.35	98.35	98.35
G24-0	18.05.96	10:00 AM	96.60	96.60	96.67	96.73	96.80	96.86
G24-15	19.05.96	10:30 AM	96.33	96.30	96.30	96.33	96.33	96.60
G24-30	20.05.96	03:00 PM	97.33	97.33	97.33	97.36	97.39	97.36
G24-60	21.05.96	11:00 AM	97.76	97.76	97.76	97.79	97.76	97.76
E21-0	25.01.96	10:00 AM	99.21	99.21	99.21	99.18	99.21	99.25
E21-15	26.01.96	01:45 PM	99.48	99.48	99.51	99.51	99.48	99.51
E21-30	27.01.96	05:15 PM	99.81	99.84	99.84	99.81	99.88	99.88
E21-60	29.01.96	10:30 AM	99.28	99.31	99.35	99.38	99.45	99.51
E21-60-pc	31.01.96	10:30 AM	98.85	98.88	98.98	99.05	99.11	99.11
E22-0	11.03.96	11:00 AM	98.52	98.52	98.52	98.52	98.59	98.59
E22-15	11.03.96	01:00 PM	98.52	98.52	98.59	98.59	98.59	98.59
E22-30	12.03.96	05:00 PM	97.89	97.82	97.72	97.66	97.66	97.66
E22-60	14.03.96	08:00 AM	99.08	99.15	99.08	99.08	98.98	98.98
E22-60-pc	15.03.96	10:00 AM	98.39	98.39	98.49	98.49	98.52	98.52
E23-0	6.05.96	10:30 AM	99.48	99.51	99.55	99.55	99.55	99.51
E23-15	7.05.96	11:30 AM	99.21	99.21	99.21	99.18	99.18	99.15
E23-30	8.05.96	02:30 PM	98.68	98.68	98.68	98.68	98.65	98.68
E23-60	10.05.96	09:30 AM	100.31	100.31	100.31	100.41	100.37	100.41
E23-60-pc	16.05.96	10:00 AM	98.45	98.45	98.45	98.39	98.35	98.35
E24-0	22.05.96	10:00 AM	98.42	98.42	98.52	98.55	98.55	98.62
E24-15	23.05.96	09:00 AM	99.02	99.05	99.15	99.25	99.35	99.38
E24-30	24.05.96	11:00 AM	100.01	100.07	100.11	100.14	100.14	100.11
E24-60	25.05.96	01:30 PM	99.91	99.84	99.81	99.71	99.64	99.58
E24-60-pc	26.05.96	06:00 PM	99.21	99.15	99.11	99.05	99.02	99.02

Examples for tests G23 and G24:

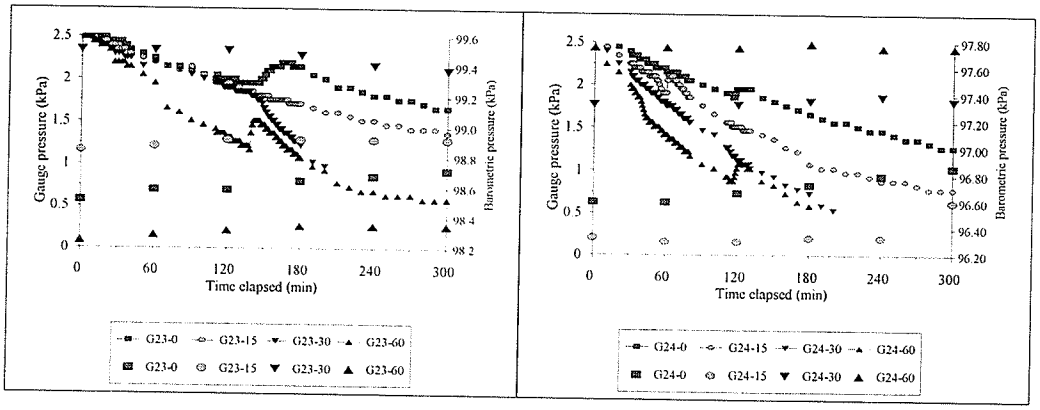


Table A.7 Barometric pressure (kPa) data from the Winnipeg Station for the tests carried out on sample 3 (no caulking).

Test No.	Date	Beginning of the test	Barometric pressure (kPa)
G31-0	27.12.95	08:00 AM	100.07
G31-15	27.12.95	09:45 AM	100.14
G31-30	28.12.95	11:45 AM	98.82
G31-60	29.12.95	03:00 PM	98.68
G32-0	1.02.95	09:30 AM	99.45
G32-15	1.02.96	10:00 AM	99.45
G32-30	2.02.96	12:00 PM	100.17
G32-60	3.02.96	03:00 PM	100.41
G33-0	11.04.96	09:00 AM	98.39
G33-15	11.04.96	06:15 PM	98.88
G33-30	13.04.96	11:15 AM	98.88
G33-60	15.04.96	10:00 AM	98.35
G34-0	8.06.96	10:00 AM	100.60
G34-15	8.06.96	12:00 PM	101.48
G34-30	9.06.96	02:00 PM	101.08
G34-60	10.06.96	04:30 PM	99.80
E31-0	4.01.96	10:00 AM	99.71
E31-15	4.01.96	01:00 PM	100.04
E31-30	5.01.96	02:30 PM	100.84
E31-60	6.01.96	04:30 PM	100.97
E31-60-pc	9.01.96	10:15 AM	98.52
E32-0	8.02.96	11:00 AM	97.36
E32-15	8.02.96	05:00 PM	97.72
E32-30	10.02.96	08:00 AM	96.60
E32-60	11.02.96	10:30 AM	99.21
E32-60-pc	12.02.96	01:15 PM	99.81
E33-0	20.04.96	10:00 AM	97.46
E33-15	20.04.96	11:15 AM	97.46
E33-30	21.04.96	06:00 PM	98.22
E33-60	23.04.96	10:00 AM	98.78
E33-60-pc	24.04.96	12:00 PM	98.42
E34-0	11.06.96	10:00 AM	100.52
E34-15	12.06.96	08:00 AM	100.77
E34-30	13.06.96	10:00 AM	101.26
E34-60	14.06.96	01:00 PM	101.70
E34-60-pc	16.06.96	12:00 PM	101.32

Appendix B.

Experimental Data for the Effects of Temperature and Barometric Pressure Fluctuations on the Gauge Pressure Decay.

Table B.1. Comparison of the 4 replicates of the pressure decay tests conducted under the same conditions i.e. sample 1 (2 row caulking), 4th replicate of the sample, no carbon dioxide added, and bin filled with wheat (11.8% m.c.).

Date	28.05.96					28.05.96					31.05.96					31.05.96						
Time	09:00 AM					02:00 PM					11:00 AM					04:00 PM						
Sample	G14-0/1					G14-0/2					G14-0/3					G14-0/4						
Time	Pg	Pg	Pat	Tin	Tout	Pg	Pg	Pat	Tin	Tout	Pg	Pg	Pat	Tin	Tout	Pg		Pat	Tin	Tout	Pg	
(min)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	Mean	SD
0	253.9	2.539	99.11	19.9	19.4	253.9	2.539	99.21	19.2	19.9	258.8	2.588	98.06	19.8	20.1	253.9	2.539	97.99	19.4	19.8	255.1	2.4
1	249.0	2.490		20.0	19.8	253.9	2.539		19.5	20.1	253.9	2.539		19.9	19.9	253.9	2.539		19.5	19.5	252.7	2.4
2	249.0	2.490		19.9	19.4	253.9	2.539		19.5	20.0	253.9	2.539		19.3	19.6	253.9	2.539		19.6	19.6	252.7	2.4
3	244.1	2.441		19.9	19.3	249.0	2.490		19.4	19.7	249.0	2.490		19.7	19.8	249.0	2.490		19.3	19.6	247.8	2.4
4	244.1	2.441		20.0	19.2	249.0	2.490		19.3	19.7	249.0	2.490		19.5	19.8	249.0	2.490		19.4	19.5	247.8	2.4
5	244.1	2.441		20.0	19.1	244.1	2.441		19.7	20.0	244.1	2.441		19.7	20.2	244.1	2.441		19.5	19.6	244.1	0.0
6	239.3	2.393		19.9	19.2	244.1	2.441		19.5	20.0	244.1	2.441		19.7	20.2	244.1	2.441		19.5	19.6	242.9	2.4
7	239.3	2.393		19.8	19.6	239.3	2.393		19.4	19.8	239.3	2.393		19.5	19.9	239.3	2.393		19.5	19.8	239.3	0.0
8	234.4	2.344		19.9	19.8	239.3	2.393		19.0	19.5	239.3	2.393		19.5	19.6	239.3	2.393		19.6	19.8	238.0	2.4
9	234.4	2.344		20.0	19.6	234.4	2.344		19.4	19.5	234.4	2.344		19.8	19.7	234.4	2.344		19.3	19.8	234.4	0.0
10	229.5	2.295		19.9	19.3	234.4	2.344		19.5	20.1	234.4	2.344		19.6	19.7	234.4	2.344		19.3	19.8	233.2	2.4
11	229.5	2.295		19.9	19.1	229.5	2.295		19.3	20.1	229.5	2.295		19.6	19.7	229.5	2.295		19.5	19.8	229.5	0.0
12	224.6	2.246		19.9	19.2	229.5	2.295		19.4	20.0	229.5	2.295		19.6	19.8	229.5	2.295		19.8	19.9	228.3	2.4
13	224.6	2.246		19.9	19.7	224.6	2.246		19.5	19.6	229.5	2.295		19.7	19.9	224.6	2.246		19.6	19.9	225.8	2.4
14	219.7	2.197		19.9	19.7	224.6	2.246		19.6	19.8	224.6	2.246		19.6	19.9	224.6	2.246		19.4	19.9	223.4	2.4
15	219.7	2.197		20.0	19.7	219.7	2.197		19.6	19.9	224.6	2.246		19.4	19.9	219.7	2.197		19.4	19.8	220.9	2.4
16	219.7	2.197		19.9	19.5	219.7	2.197		19.4	20.1	224.6	2.246		19.4	19.8	219.7	2.197		19.5	19.8	220.9	2.4
17	214.8	2.148		20.1	19.2	214.8	2.148		19.4	20.0	219.7	2.197		19.6	19.7	219.7	2.197		19.5	19.8	217.3	2.8
18	214.8	2.148		20.0	19.2	214.8	2.148		19.3	19.8	219.7	2.197		19.6	19.6	214.8	2.148		19.5	19.8	216.1	2.4
19	210.0	2.100		20.0	19.5	214.8	2.148		19.4	19.6	214.8	2.148		19.7	19.6	214.8	2.148		19.4	19.8	213.6	2.4
20	210.0	2.100		20.0	19.7	210.0	2.100		19.3	19.8	214.8	2.148		19.6	19.6	210.0	2.100		19.7	19.9	211.2	2.4
21	205.1	2.051		19.9	19.7	210.0	2.100		19.5	19.9	210.0	2.100		19.4	19.7	210.0	2.100		19.7	19.9	208.7	2.4
22	205.1	2.051		19.7	19.7	205.1	2.051		19.5	20.0	210.0	2.100		19.3	19.7	205.1	2.051		19.4	19.9	206.3	2.4
23	200.2	2.002		19.6	19.4	205.1	2.051		19.1	19.6	210.0	2.100		19.4	19.8	205.1	2.051		19.4	19.8	205.1	4.0
24	200.2	2.002		19.9	19.1	205.1	2.051		19.3	19.5	205.1	2.051		19.4	20.1	205.1	2.051		19.3	19.6	203.9	2.4
25	195.3	1.953		19.9	19.2	200.2	2.002		19.5	19.6	205.1	2.051		19.6	19.8	200.2	2.002		19.4	19.6	200.2	4.0
26	195.3	1.953		19.8	19.3	200.2	2.002		19.5	20.0	200.2	2.002		19.4	19.7	200.2	2.002		19.3	19.6	199.0	2.4
27	195.3	1.953		19.9	19.5	200.2	2.002		19.3	19.9	200.2	2.002		19.7	19.6	195.3	1.953		19.3	19.6	197.8	2.8
28	190.4	1.904		19.8	19.9	195.3	1.953		19.5	19.6	200.2	2.002		19.6	19.6	195.3	1.953		19.7	19.8	195.3	4.0
29	190.4	1.904		19.8	19.8	195.3	1.953		19.1	19.5	195.3	1.953		19.3	19.6	195.3	1.953		19.7	19.7	194.1	2.4
30	185.5	1.855	99.11	19.7	19.7	195.3	1.953	99.21	19.5	19.6	195.3	1.953	98.06	19.4	19.6	195.3	1.953	97.99	19.6	19.7	192.9	4.9
31	190.4	1.904		20.2	19.8	190.4	1.904		19.4	19.9	195.3	1.953		19.4	19.7	190.4	1.904		19.3	19.7	191.7	2.4
32	195.3	1.953		19.9	19.1	190.4	1.904		19.4	19.9	190.4	1.904		19.4	19.8	190.4	1.904		19.6	19.6	191.7	2.4
33	195.3	1.953		19.9	19.5	190.4	1.904		19.4	19.5	190.4	1.904		19.6	19.9	185.5	1.855		19.3	19.4	190.4	4.0
34	195.3	1.953		19.5	19.5	185.5	1.855		19.1	19.5	185.5	1.855		19.6	19.9	185.5	1.855		19.7	19.4	188.0	4.9

Table B.1 continued...

35	190.4	1.904		19.9	19.4	185.5	1.855		19.4	19.8	185.5	1.855		19.3	19.8	185.5	1.855		19.7	19.6	186.8	2.4
36	185.5	1.855		19.9	19.2	185.5	1.855		19.4	19.9	185.5	1.855		19.3	19.7	180.7	1.807		19.6	19.6	184.3	2.4
37	185.5	1.855		19.7	18.9	180.7	1.807		19.3	19.9	180.7	1.807		19.7	19.6	180.7	1.807		19.3	19.4	181.9	2.4
38	185.5	1.855		19.9	19.0	180.7	1.807		19.4	19.5	180.7	1.807		19.3	19.4	175.8	1.758		19.1	19.3	180.7	4.0
39	180.7	1.807		19.9	19.2	180.7	1.807		19.1	19.5	180.7	1.807		19.6	19.4	175.8	1.758		19.4	19.6	179.4	2.4
40	180.7	1.807		19.8	19.4	175.8	1.758		19.5	19.6	175.8	1.758		19.7	19.7	175.8	1.758		19.3	19.6	177.0	2.4
41	175.8	1.758		19.9	19.7	175.8	1.758		19.3	19.8	175.8	1.758		19.5	19.7	170.9	1.709		19.4	19.6	174.6	2.4
42	175.8	1.758		19.9	19.4	175.8	1.758		19.5	19.9	175.8	1.758		19.6	20.0	170.9	1.709		19.7	19.6	174.6	2.4
43	170.9	1.709		20.0	19.3	170.9	1.709		19.3	19.5	170.9	1.709		19.5	20.0	170.9	1.709		19.6	19.6	170.9	0.0
44	170.9	1.709		19.8	19.0	170.9	1.709		19.3	19.4	170.9	1.709		19.4	19.8	166.0	1.660		19.3	19.6	169.7	2.4
45	170.9	1.709		19.9	19.0	170.9	1.709		19.3	19.5	166.0	1.660		19.6	19.7	166.0	1.660		19.6	19.6	168.5	2.8
46	170.9	1.709		19.7	19.2	166.0	1.660		19.6	20.1	166.0	1.660		19.4	19.6	161.1	1.611		19.3	19.6	166.0	4.0
47	166.0	1.660		19.7	19.5	166.0	1.660		19.4	19.8	166.0	1.660		19.5	19.6	161.1	1.611		19.6	19.6	164.8	2.4
48	166.0	1.660		19.9	19.7	166.0	1.660		19.3	19.4	166.0	1.660		19.7	19.6	161.1	1.611		19.3	19.6	164.8	2.4
49	161.1	1.611		19.8	19.7	161.1	1.611		19.3	19.4	161.1	1.611		19.5	19.7	156.3	1.563		19.4	19.6	159.9	2.4
50	161.1	1.611		19.7	19.4	161.1	1.611		19.3	19.5	161.1	1.611		19.3	19.7	156.3	1.563		19.7	19.7	159.9	2.4
51	161.1	1.611		19.7	19.3	161.1	1.611		19.1	19.6	161.1	1.611		19.6	19.8	156.3	1.563		19.3	19.6	159.9	2.4
52	156.3	1.563		19.9	19.2	156.3	1.563		19.4	19.8	156.3	1.563		19.7	20.0	151.4	1.514		19.6	19.4	155.0	2.4
53	156.3	1.563		19.5	19.0	156.3	1.563		19.1	19.6	156.3	1.563		19.5	20.0	151.4	1.514		19.7	19.4	155.0	2.4
54	151.4	1.514		20.0	19.3	156.3	1.563		19.3	19.6	151.4	1.514		19.6	19.9	151.4	1.514		19.4	19.4	152.6	2.4
55	151.4	1.514		19.5	19.4	151.4	1.514		19.4	19.7	151.4	1.514		19.6	19.9	151.4	1.514		19.3	19.4	151.4	0.0
56	151.4	1.514		19.9	19.7	151.4	1.514		19.4	19.9	151.4	1.514		19.7	19.9	146.5	1.465		19.6	19.4	150.1	2.4
57	151.4	1.514		20.0	19.8	151.4	1.514		19.3	19.9	151.4	1.514		19.7	19.6	146.5	1.465		19.1	19.3	150.1	2.4
58	146.5	1.465		19.9	19.7	151.4	1.514		19.1	19.5	151.4	1.514		19.4	19.5	146.5	1.465		19.4	19.4	148.9	2.8
59	146.5	1.465		19.7	19.3	146.5	1.465		19.1	19.4	146.5	1.465		19.5	19.7	146.5	1.465		19.7	19.4	146.5	0.0
60	146.5	1.465	99.15	20.1	19.5	146.5	1.465	99.25	19.1	19.6	146.5	1.465	98.06	19.6	19.7	141.6	1.416	98.02	19.4	19.4	145.3	2.4
61	146.5	1.465		19.8	19.2	146.5	1.465		19.6	20.1	146.5	1.465		19.7	20.0	141.6	1.416		19.7	19.4	145.3	2.4
62	141.6	1.416		19.7	19.2	146.5	1.465		19.4	19.8	141.6	1.416		19.4	20.0	141.6	1.416		19.3	19.4	142.8	2.4
63	141.6	1.416		20.0	19.3	141.6	1.416		19.1	19.4	141.6	1.416		19.5	20.0	136.7	1.367		19.3	19.4	140.4	2.4
64	136.7	1.367		19.6	19.5	141.6	1.416		19.3	19.3	141.6	1.416		19.3	19.8	136.7	1.367		19.3	19.4	139.2	2.8
65	136.7	1.367		19.8	19.7	141.6	1.416		19.3	19.5	141.6	1.416		19.6	19.7	136.7	1.367		19.6	19.6	139.2	2.8
66	136.7	1.367		20.1	19.8	136.7	1.367		19.4	19.9	136.7	1.367		19.7	19.7	136.7	1.367		19.4	19.6	136.7	0.0
67	136.7	1.367		19.5	19.5	136.7	1.367		19.4	19.8	136.7	1.367		19.4	19.4	131.8	1.318		19.4	19.6	135.5	2.4
68	131.8	1.318		20.0	19.5	136.7	1.367		19.1	19.5	136.7	1.367		19.3	19.4	131.8	1.318		19.4	19.4	134.3	2.8
69	131.8	1.318		19.9	19.4	136.7	1.367		19.6	19.4	136.7	1.367		19.4	19.4	131.8	1.318		19.6	19.4	134.3	2.8
70	127.0	1.270		19.8	19.4	131.8	1.318		19.4	19.7	136.7	1.367		19.3	19.4	127.0	1.270		19.6	19.4	130.6	4.7
71	127.0	1.270		20.0	19.4	131.8	1.318		19.4	19.9	131.8	1.318		19.5	19.7	127.0	1.270		19.3	19.4	129.4	2.8
72	127.0	1.270		20.0	19.4	131.8	1.318		19.4	19.6	131.8	1.318		19.5	20.0	127.0	1.270		19.4	19.6	129.4	2.8
73	127.0	1.270		20.0	19.6	131.8	1.318		19.1	19.4	131.8	1.318		19.4	19.7	127.0	1.270		19.3	19.4	129.4	2.8
74	122.1	1.221		20.1	19.8	127.0	1.270		19.4	19.4	127.0	1.270		19.6	19.8	122.1	1.221		19.3	19.4	124.5	2.8
75	122.1	1.221		19.9	19.8	127.0	1.270		19.3	19.6	127.0	1.270		19.4	19.8	122.1	1.221		19.3	19.4	124.5	2.8
76	122.1	1.221		20.0	19.9	127.0	1.270		19.3	19.8	127.0	1.270		19.5	19.9	122.1	1.221		19.4	19.4	124.5	2.8
77	122.1	1.221		20.0	19.6	122.1	1.221		19.1	19.6	127.0	1.270		19.3	19.7	117.2	1.172		19.4	19.4	122.1	4.0

Table B.1 continued...

78	117.2	1.172		20.0	19.5	122.1	1.221		19.1	19.4	122.1	1.221		19.3	19.4	117.2	1.172		19.4	19.4	119.6	2.8
79	117.2	1.172		20.0	19.4	122.1	1.221		19.3	19.4	122.1	1.221		19.3	19.4	117.2	1.172		19.3	19.6	119.6	2.8
80	117.2	1.172		20.0	19.4	122.1	1.221		19.3	19.9	122.1	1.221		19.7	19.6	117.2	1.172		19.6	19.6	119.6	2.8
81	117.2	1.172		19.9	19.4	122.1	1.221		19.4	19.9	122.1	1.221		19.4	19.6	117.2	1.172		19.4	19.6	119.6	2.8
82	112.3	1.123		19.8	19.5	117.2	1.172		19.0	19.5	117.2	1.172		19.5	19.9	112.3	1.123		19.3	19.6	114.7	2.8
83	112.3	1.123		19.8	19.8	117.2	1.172		19.1	19.3	117.2	1.172		19.4	19.7	112.3	1.123		19.6	19.6	114.7	2.8
84	112.3	1.123		20.0	19.9	117.2	1.172		19.4	19.6	117.2	1.172		19.3	19.7	112.3	1.123		19.7	19.7	114.7	2.8
85	112.3	1.123		20.1	19.8	117.2	1.172		19.3	19.7	117.2	1.172		19.3	19.8	112.3	1.123		19.4	19.7	114.7	2.8
86	107.4	1.074		19.8	19.6	117.2	1.172		19.3	19.8	117.2	1.172		19.2	19.8	107.4	1.074		19.4	19.8	112.3	5.6
87	107.4	1.074		19.8	19.3	117.2	1.172		19.3	19.8	117.2	1.172		19.7	19.9	107.4	1.074		19.5	19.5	112.3	5.6
88	107.4	1.074		20.0	19.4	112.3	1.123		19.4	19.6	112.3	1.123		19.4	19.7	107.4	1.074		19.6	19.6	109.9	2.8
89	107.4	1.074		19.9	19.3	112.3	1.123		19.3	19.4	112.3	1.123		19.4	19.6	107.4	1.074		19.3	19.6	109.9	2.8
90	107.4	1.074	99.15	19.8	19.3	112.3	1.123	99.25	19.1	19.8	112.3	1.123	98.06	19.4	19.6	107.4	1.074	98.02	19.4	19.5	109.9	2.8
91	102.5	1.025		19.9	19.4	112.3	1.123		19.3	19.9	107.4	1.074		19.5	19.6	102.5	1.025		19.5	19.6	106.2	4.7
92	102.5	1.025		19.8	19.6	107.4	1.074		19.2	19.8	107.4	1.074		19.2	19.6	102.5	1.025		19.5	19.6	105.0	2.8
93	102.5	1.025		20.0	19.8	107.4	1.074		19.4	19.4	107.4	1.074		19.4	19.7	102.5	1.025		19.5	19.8	105.0	2.8
94	102.5	1.025		19.8	19.7	107.4	1.074		19.3	19.6	107.4	1.074		19.5	20.0	102.5	1.025		19.6	19.8	105.0	2.8
95	102.5	1.025		19.6	19.5	107.4	1.074		19.3	19.8	107.4	1.074		19.7	20.0	102.5	1.025		19.3	19.8	105.0	2.8
96	97.7	0.977		20.0	19.6	102.5	1.025		19.4	19.8	102.5	1.025		19.3	19.8	97.7	0.977		19.3	19.8	100.1	2.8
97	97.7	0.977		20.0	19.5	102.5	1.025		19.2	19.7	102.5	1.025		19.4	19.7	97.7	0.977		19.5	19.8	100.1	2.8
98	97.7	0.977		20.0	19.4	102.5	1.025		19.3	19.6	102.5	1.025		19.7	19.7	97.7	0.977		19.8	19.9	100.1	2.8
99	97.7	0.977		19.8	19.4	102.5	1.025		19.4	19.7	102.5	1.025		19.6	19.6	97.7	0.977		19.6	19.9	100.1	2.8
100	97.7	0.977		19.9	19.4	102.5	1.025		19.0	19.8	102.5	1.025		19.4	19.5	97.7	0.977		19.4	19.9	100.1	2.8
101	97.7	0.977		20.1	19.5	102.5	1.025		19.6	19.9	97.7	0.977		19.5	19.6	97.7	0.977		19.4	19.8	98.9	2.4
102	92.8	0.928		19.8	19.4	102.5	1.025		19.1	19.4	97.7	0.977		19.2	19.4	92.8	0.928		19.5	19.8	96.4	4.7
103	92.8	0.928		20.0	19.6	97.7	0.977		19.6	19.6	97.7	0.977		19.4	19.6	92.8	0.928		19.5	19.8	95.2	2.8
104	92.8	0.928		19.8	19.8	97.7	0.977		19.1	19.5	97.7	0.977		19.6	19.7	92.8	0.928		19.5	19.8	95.2	2.8
105	92.8	0.928		20.0	19.8	97.7	0.977		19.6	19.9	97.7	0.977		19.5	19.9	92.8	0.928		19.4	19.8	95.2	2.8
106	92.8	0.928		20.0	19.6	97.7	0.977		19.3	19.8	97.7	0.977		19.5	20.0	92.8	0.928		19.7	19.9	95.2	2.8
107	87.9	0.879		19.5	19.5	97.7	0.977		19.3	19.6	92.8	0.928		19.2	19.8	92.8	0.928		19.7	19.9	92.8	4.0
108	87.9	0.879		19.9	19.4	92.8	0.928		19.3	19.3	92.8	0.928		19.5	19.9	92.8	0.928		19.4	19.9	91.6	2.4
109	87.9	0.879		20.0	19.4	92.8	0.928		19.4	19.7	92.8	0.928		19.6	19.9	87.9	0.879		19.4	19.8	90.3	2.8
110	87.9	0.879		19.9	19.4	92.8	0.928		19.2	19.9	92.8	0.928		19.4	19.9	87.9	0.879		19.3	19.6	90.3	2.8
111	87.9	0.879		20.0	19.4	92.8	0.928		19.4	19.9	92.8	0.928		19.2	19.6	87.9	0.879		19.4	19.6	90.3	2.8
112	83.0	0.830		19.8	19.5	92.8	0.928		19.2	19.7	92.8	0.928		19.3	19.6	87.9	0.879		19.3	19.6	89.1	4.7
113	83.0	0.830		19.9	19.6	87.9	0.879		19.2	19.4	92.8	0.928		19.6	19.6	87.9	0.879		19.3	19.6	87.9	4.0
114	83.0	0.830		19.8	19.8	87.9	0.879		19.4	19.7	87.9	0.879		19.4	19.4	83.0	0.830		19.7	19.8	85.4	2.8
115	83.0	0.830		19.8	19.8	87.9	0.879		19.6	19.9	87.9	0.879		19.2	19.4	83.0	0.830		19.7	19.7	85.4	2.8
116	83.0	0.830		19.8	19.8	87.9	0.879		19.3	19.9	87.9	0.879		19.4	19.4	83.0	0.830		19.6	19.7	85.4	2.8
117	83.0	0.830		19.8	19.6	87.9	0.879		19.1	19.6	87.9	0.879		19.6	19.6	83.0	0.830		19.3	19.7	85.4	2.8
118	78.1	0.781		20.1	19.6	87.9	0.879		19.0	19.4	87.9	0.879		19.4	19.6	83.0	0.830		19.6	19.6	84.2	4.7
119	78.1	0.781		19.9	19.5	83.0	0.830		19.3	19.4	83.0	0.830		19.6	19.6	83.0	0.830		19.3	19.4	81.8	2.4
120	78.1	0.781	99.18	19.9	19.4	83.0	0.830	99.21	19.1	19.8	83.0	0.830	98.02	19.2	19.6	78.1	0.781	97.96	19.7	19.4	80.6	2.8

Table B.1 continued...

121	78.1	0.781		19.6	19.3	83.0	0.830		19.4	19.8	83.0	0.830		19.3	19.7	78.1	0.781		19.7	19.6	80.6	2.8
122	78.1	0.781		20.0	19.3	83.0	0.830		19.0	19.6	83.0	0.830		19.4	19.8	78.1	0.781		19.6	19.6	80.6	2.8
123	78.1	0.781		20.0	19.4	83.0	0.830		19.1	19.4	83.0	0.830		19.7	20.0	78.1	0.781		19.3	19.4	80.6	2.8
124	73.2	0.732		19.6	19.4	83.0	0.830		19.1	19.4	83.0	0.830		19.6	20.0	78.1	0.781		19.1	19.3	79.3	4.7
125	73.2	0.732		19.9	19.5	78.1	0.781		19.6	19.8	78.1	0.781		19.5	20.0	73.2	0.732		19.4	19.6	75.7	2.8
126	73.2	0.732		20.0	19.8	78.1	0.781		19.3	20.1	78.1	0.781		19.4	20.0	73.2	0.732		19.3	19.6	75.7	2.8
127	73.2	0.732		19.6	19.6	78.1	0.781		19.2	19.7	78.1	0.781		19.6	19.9	73.2	0.732		19.4	19.6	75.7	2.8
128	73.2	0.732		19.8	19.6	78.1	0.781		19.1	19.4	78.1	0.781		19.3	19.6	73.2	0.732		19.7	19.6	75.7	2.8
129	73.2	0.732		20.0	19.8	78.1	0.781		19.3	19.4	78.1	0.781		19.7	19.6	73.2	0.732		19.6	19.6	75.7	2.8
130	73.2	0.732		20.0	19.5	78.1	0.781		19.3	19.7	73.2	0.732		19.3	19.4	73.2	0.732		19.3	19.6	74.5	2.4
131	73.2	0.732		19.9	19.5	78.1	0.781		19.3	20.1	73.2	0.732		19.6	19.6	73.2	0.732		19.6	19.6	74.5	2.4
132	68.4	0.684		19.8	19.3	73.2	0.732		19.3	19.8	73.2	0.732		19.6	19.6	73.2	0.732		19.3	19.6	72.0	2.4
133	68.4	0.684		19.8	19.2	73.2	0.732		19.3	19.4	73.2	0.732		19.7	19.5	73.2	0.732		19.6	19.6	72.0	2.4
134	68.4	0.684		19.9	19.4	73.2	0.732		19.3	19.4	73.2	0.732		19.3	19.4	68.4	0.684		19.3	19.6	70.8	2.8
135	68.4	0.684		20.0	19.3	73.2	0.732		19.4	19.6	73.2	0.732		19.4	19.6	68.4	0.684		19.4	19.6	70.8	2.8
136	68.4	0.684		19.9	19.3	73.2	0.732		19.4	19.6	73.2	0.732		19.4	19.6	68.4	0.684		19.7	19.7	70.8	2.8
137	68.4	0.684		19.6	19.4	73.2	0.732		19.4	19.8	73.2	0.732		19.4	19.5	68.4	0.684		19.3	19.6	70.8	2.8
138	68.4	0.684		19.9	19.4	73.2	0.732		19.1	19.5	73.2	0.732		19.5	19.7	68.4	0.684		19.6	19.4	70.8	2.8
139	63.5	0.635		19.8	19.6	73.2	0.732		19.4	19.6	68.4	0.684		19.4	19.9	68.4	0.684		19.7	19.4	68.4	4.0
140	63.5	0.635		19.6	19.5	73.2	0.732		19.3	19.4	68.4	0.684		19.3	19.7	68.4	0.684		19.4	19.4	68.4	4.0
141	63.5	0.635		20.0	19.6	68.4	0.684		19.4	19.7	68.4	0.684		19.3	19.8	68.4	0.684		19.3	19.4	67.1	2.4
142	63.5	0.635		20.0	19.6	68.4	0.684		19.3	19.8	68.4	0.684		19.6	20.0	68.4	0.684		19.6	19.4	67.1	2.4
143	63.5	0.635		19.6	19.6	68.4	0.684		19.1	19.6	68.4	0.684		19.6	19.9	63.5	0.635		19.1	19.3	65.9	2.8
144	63.5	0.635		19.9	19.6	68.4	0.684		19.1	19.4	68.4	0.684		19.6	19.8	63.5	0.635		19.4	19.4	65.9	2.8
145	63.5	0.635		19.9	19.6	68.4	0.684		19.4	19.4	68.4	0.684		19.6	19.9	63.5	0.635		19.7	19.4	65.9	2.8
146	63.5	0.635		19.9	19.5	68.4	0.684		19.6	19.7	68.4	0.684		19.4	19.7	63.5	0.635		19.4	19.4	65.9	2.8
147	63.5	0.635		19.9	19.5	68.4	0.684		19.6	19.8	68.4	0.684		19.5	19.7	63.5	0.635		19.7	19.4	65.9	2.8
148	58.6	0.586		20.0	19.3	68.4	0.684		19.3	19.9	63.5	0.635		19.2	19.6	63.5	0.635		19.3	19.4	63.5	4.0
149	58.6	0.586		20.1	19.4	68.4	0.684		19.1	19.5	63.5	0.635		19.7	19.7	63.5	0.635		19.3	19.4	63.5	4.0
150	58.6	0.586	99.18	20.0	19.3	68.4	0.684	99.21	19.4	19.6	63.5	0.635	98.02	19.5	19.6	58.6	0.586	97.96	19.3	19.4	62.3	4.7
151	58.6	0.586		19.6	19.3	63.5	0.635		19.3	19.6	63.5	0.635		19.5	19.7	58.6	0.586		19.6	19.6	61.0	2.8
152	58.6	0.586		20.0	19.4	63.5	0.635		19.2	19.9	63.5	0.635		19.6	19.6	58.6	0.586		19.4	19.6	61.0	2.8
153	58.6	0.586		20.0	19.4	63.5	0.635		19.4	19.9	63.5	0.635		19.5	19.6	58.6	0.586		19.4	19.6	61.0	2.8
154	58.6	0.586		19.9	19.4	63.5	0.635		19.0	19.5	63.5	0.635		19.5	19.5	58.6	0.586		19.4	19.4	61.0	2.8
155	58.6	0.586		19.9	19.5	63.5	0.635		19.2	19.4	58.6	0.586		19.6	19.6	58.6	0.586		19.6	19.4	59.8	2.4
156	58.6	0.586		19.8	19.5	63.5	0.635		19.4	19.7	58.6	0.586		19.6	19.5	58.6	0.586		19.6	19.4	59.8	2.4
157	53.7	0.537		19.9	19.6	58.6	0.586		19.3	19.8	58.6	0.586		19.2	19.3	58.6	0.586		19.3	19.4	57.4	2.4
158	53.7	0.537		20.0	19.5	58.6	0.586		19.1	19.8	58.6	0.586		19.3	19.3	58.6	0.586		19.4	19.6	57.4	2.4
159	53.7	0.537		19.9	19.5	58.6	0.586		19.1	19.6	58.6	0.586		19.6	19.5	58.6	0.586		19.3	19.4	57.4	2.4
160	53.7	0.537		20.0	19.6	58.6	0.586		19.2	19.6	58.6	0.586		19.7	19.5	53.7	0.537		19.3	19.4	56.2	2.8
161	53.7	0.537		20.0	19.8	58.6	0.586		19.3	19.3	58.6	0.586		19.2	19.4	53.7	0.537		19.3	19.4	56.2	2.8
162	53.7	0.537		20.0	19.8	58.6	0.586		19.4	19.7	58.6	0.586		19.6	19.6	53.7	0.537		19.4	19.4	56.2	2.8

Table B.2. Comparison of the 6 replicates of the pressure decay tests conducted under the same conditions i.e. sample 2 (1 row caulking), 5th replicate of the sample, no carbon dioxide added, and bin empty.

Date	28.06.96						2.07.96						3.07.96							
Time	11:00 AM						09:30 AM						08:50 AM							
Sample	E25-1						E25-2						E25-3							
Time (min)	Pg (mm H2O)	Pg (kPa)	Pat (kPa)	Tin (*C)	Tout (*C)	Tin-Tuot,C (*C)	Pg (mm H2O)	Pg (kPa)	Pat (kPa)	Tin (*C)	Tout (*C)	Tin-Tuot,C (*C)	Pg (mm H2O)	Pg (kPa)	Pat (kPa)	Tin (*C)	Tout (*C)	Tin-Tuot,C (*C)	Pg Mean	Pg SD
0	253.9	2.539	97.73	29.9	29.8	0.1	253.9	2.539	99.09	30.7	30.2	0.5	253.9	2.539	98.78	30.5	29.7	0.7	253.9	0.0
1	249.0	2.490		29.6	29.7	-0.1	249.0	2.490		30.1	29.6	0.5	234.4	2.344		30.0	29.5	0.6	244.1	8.5
2	249.0	2.490		29.6	29.7	-0.1	249.0	2.490		30.1	30.0	0.1	229.5	2.295		29.7	29.6	0.1	242.5	11.3
3	244.1	2.441		29.5	29.7	-0.2	244.1	2.441		29.6	29.7	-0.1	224.6	2.246		29.7	29.7	0.0	237.6	11.3
4	244.1	2.441		29.6	29.6	0.0	244.1	2.441		29.8	30.0	-0.2	224.6	2.246		29.7	29.7	0.0	237.6	11.3
5	244.1	2.441		29.7	29.7	0.0	244.1	2.441		29.6	29.9	-0.4	224.6	2.246		29.6	29.8	-0.2	237.6	11.3
6	244.1	2.441		29.4	29.2	0.2	244.1	2.441		29.6	30.0	-0.4	219.7	2.197		29.7	29.9	-0.2	236.0	14.1
7	239.3	2.393		29.6	29.3	0.2	239.3	2.393		29.6	29.8	-0.1	219.7	2.197		29.5	29.9	-0.5	232.7	11.3
8	239.3	2.393		29.6	29.5	0.1	239.3	2.393		29.5	29.6	-0.1	219.7	2.197		29.5	29.9	-0.5	232.7	11.3
9	239.3	2.393		29.4	29.2	0.2	239.3	2.393		29.8	29.6	0.1	219.7	2.197		29.6	30.0	-0.4	232.7	11.3
10	239.3	2.393		29.5	29.3	0.1	239.3	2.393		29.6	29.5	0.1	219.7	2.197		29.5	29.9	-0.4	232.7	11.3
11	239.3	2.393		29.3	29.2	0.1	239.3	2.393		29.6	29.4	0.2	214.8	2.148		29.5	29.6	-0.1	231.1	14.1
12	239.3	2.393		29.5	29.3	0.1	239.3	2.393		29.4	29.3	0.1	214.8	2.148		29.5	29.6	-0.1	231.1	14.1
13	234.4	2.344		29.3	29.3	0.0	234.4	2.344		29.4	29.4	0.0	214.8	2.148		29.7	29.6	0.1	227.9	11.3
14	234.4	2.344		29.6	29.3	0.2	234.4	2.344		29.4	29.3	0.1	214.8	2.148		29.7	29.5	0.2	227.9	11.3
15	234.4	2.344	97.73	29.3	29.3	0.0	234.4	2.344	99.05	29.5	29.4	0.1	214.8	2.148	98.78	29.6	29.5	0.1	227.9	11.3
16	234.4	2.344		29.6	29.3	0.2	234.4	2.344		29.6	29.4	0.2	214.8	2.148		29.5	29.3	0.1	227.9	11.3
17	234.4	2.344		29.6	29.3	0.2	234.4	2.344		29.5	29.5	0.0	210.0	2.100		29.6	29.5	0.1	226.2	14.1
18	229.5	2.295		29.2	29.0	0.1	229.5	2.295		29.4	29.5	-0.1	210.0	2.100		29.6	29.3	0.2	223.0	11.3
19	229.5	2.295		29.5	29.5	0.0	229.5	2.295		29.4	29.8	-0.4	210.0	2.100		29.5	29.4	0.1	223.0	11.3
20	229.5	2.295		29.2	29.3	-0.1	229.5	2.295		29.4	29.6	-0.2	210.0	2.100		29.5	29.3	0.1	223.0	11.3
21	229.5	2.295		29.5	29.7	-0.2	229.5	2.295		29.4	29.6	-0.2	210.0	2.100		29.6	29.5	0.1	223.0	11.3
22	229.5	2.295		29.3	29.7	-0.4	229.5	2.295		29.6	29.9	-0.4	205.1	2.051		29.5	29.6	-0.1	221.4	14.1
23	229.5	2.295		29.4	29.6	-0.2	229.5	2.295		29.6	29.8	-0.2	205.1	2.051		29.5	29.6	-0.1	221.4	14.1
24	224.6	2.246		29.3	29.7	-0.4	224.6	2.246		29.2	29.5	-0.4	205.1	2.051		29.7	29.7	0.0	218.1	11.3
25	224.6	2.246		29.6	29.7	-0.1	224.6	2.246		29.4	29.5	-0.1	205.1	2.051		29.5	29.9	-0.4	218.1	11.3
26	224.6	2.246		29.5	29.7	-0.2	224.6	2.246		29.4	29.4	0.0	205.1	2.051		29.5	29.9	-0.4	218.1	11.3
27	224.6	2.246		29.5	29.6	-0.1	224.6	2.246		29.5	29.7	-0.2	200.2	2.002		29.6	30.1	-0.5	216.5	14.1
28	224.6	2.246		29.7	29.7	0.0	224.6	2.246		29.6	29.5	0.1	200.2	2.002		29.5	29.9	-0.4	216.5	14.1
29	219.7	2.197		29.5	29.6	-0.1	219.7	2.197		29.5	29.5	0.0	200.2	2.002		29.5	29.9	-0.4	213.2	11.3
30	219.7	2.197	97.73	29.3	29.5	-0.1	219.7	2.197	99.09	29.2	29.3	-0.1	200.2	2.002	98.78	29.7	29.7	0.0	213.2	11.3
31	219.7	2.197		29.3	29.2	0.1	219.7	2.197		29.2	29.0	0.1	200.2	2.002		29.3	29.3	0.0	213.2	11.3
32	219.7	2.197		29.3	29.3	0.0	219.7	2.197		29.3	29.3	0.0	200.2	2.002		29.5	29.6	-0.1	213.2	11.3
33	219.7	2.197		29.6	29.4	0.2	214.8	2.148		29.4	29.0	0.4	200.2	2.002		29.6	29.6	0.0	211.6	10.2
34	219.7	2.197		29.5	29.3	0.1	214.8	2.148		29.3	29.2	0.1	195.3	1.953		29.5	29.5	0.0	210.0	12.9
35	214.8	2.148		29.5	29.4	0.1	214.8	2.148		29.6	29.3	0.2	195.3	1.953		29.6	29.6	0.0	208.3	11.3

Table B.2 continued...

36	214.8	2.148		29.5	29.3	0.1	214.8	2.148		29.3	29.3	0.0	195.3	1.953		29.7	29.4	0.4	208.3	11.3
37	214.8	2.148		29.4	29.5	-0.1	210.0	2.100		29.5	29.3	0.1	195.3	1.953		29.6	29.4	0.2	206.7	10.2
38	214.8	2.148		29.3	29.3	0.0	210.0	2.100		29.3	29.3	0.0	195.3	1.953		29.5	29.3	0.2	206.7	10.2
39	214.8	2.148		29.5	29.6	-0.1	210.0	2.100		29.3	29.3	0.0	190.4	1.904		29.7	29.5	0.2	205.1	12.9
40	214.8	2.148		29.6	29.7	-0.1	210.0	2.100		29.5	29.3	0.1	195.3	1.953		29.4	29.5	-0.1	206.7	10.2
41	210.0	2.100		29.5	29.7	-0.2	210.0	2.100		29.5	29.5	0.0	190.4	1.904		29.5	29.5	0.0	203.5	11.3
42	210.0	2.100		29.6	29.9	-0.2	205.1	2.051		29.7	29.4	0.4	190.4	1.904		29.5	29.4	0.1	201.8	10.2
43	210.0	2.100		29.7	30.0	-0.2	205.1	2.051		29.6	29.7	-0.1	190.4	1.904		29.5	29.6	-0.1	201.8	10.2
44	210.0	2.100		29.3	29.8	-0.5	205.1	2.051		29.6	29.4	0.2	190.4	1.904		29.6	29.6	0.0	201.8	10.2
45	210.0	2.100	97.73	29.6	29.9	-0.2	205.1	2.051	99.09	29.5	29.6	-0.1	190.4	1.904	98.82	29.4	29.5	-0.1	201.8	10.2
46	205.1	2.051		29.3	29.5	-0.1	205.1	2.051		29.5	29.7	-0.2	185.5	1.855		29.6	29.6	0.0	198.6	11.3
47	205.1	2.051		29.6	29.3	0.2	200.2	2.002		29.6	29.5	0.1	185.5	1.855		29.4	29.4	0.0	196.9	10.2
48	205.1	2.051		29.6	29.4	0.2	200.2	2.002		29.4	29.5	-0.1	185.5	1.855		29.5	29.4	0.1	196.9	10.2
49	205.1	2.051		29.3	29.2	0.1	200.2	2.002		29.6	29.4	0.2	185.5	1.855		29.5	29.4	0.1	196.9	10.2
50	205.1	2.051		29.4	29.3	0.1	200.2	2.002		29.5	29.5	0.0	185.5	1.855		29.5	29.6	-0.1	196.9	10.2
51	205.1	2.051		29.6	29.4	0.2	200.2	2.002		29.4	29.5	-0.1	185.5	1.855		29.6	29.6	0.0	196.9	10.2
52	200.2	2.002		29.2	29.2	0.0	200.2	2.002		29.6	29.4	0.2	180.7	1.807		29.4	29.6	-0.2	193.7	11.3
53	200.2	2.002		29.4	29.5	-0.1	195.3	1.953		29.5	29.4	0.1	180.7	1.807		29.5	29.5	0.0	192.1	10.2
54	200.2	2.002		29.5	29.3	0.1	195.3	1.953		29.4	29.3	0.1	180.7	1.807		29.6	29.6	0.0	192.1	10.2
55	200.2	2.002		29.5	29.7	-0.2	195.3	1.953		29.4	29.3	0.1	180.7	1.807		29.4	29.6	-0.2	192.1	10.2
56	200.2	2.002		29.3	29.6	-0.2	195.3	1.953		29.4	29.3	0.1	180.7	1.807		29.5	29.6	-0.1	192.1	10.2
57	200.2	2.002		29.6	29.9	-0.2	195.3	1.953		29.5	29.3	0.2	180.7	1.807		29.6	29.6	0.0	192.1	10.2
58	200.2	2.002		29.2	29.7	-0.5	195.3	1.953		29.4	29.3	0.1	175.8	1.758		29.4	29.5	-0.1	190.4	12.9
59	195.3	1.953		29.5	29.7	-0.2	195.3	1.953		29.4	29.3	0.1	175.8	1.758		29.4	29.5	-0.1	188.8	11.3
60	195.3	1.953	97.76	29.6	29.7	-0.1	195.3	1.953	99.09	29.5	29.3	0.2	175.8	1.758	98.82	29.5	29.6	-0.1	188.8	11.3
61	195.3	1.953		29.6	29.5	0.1	190.4	1.904		29.4	29.3	0.1	175.8	1.758		29.5	29.7	-0.2	187.2	10.2
62	195.3	1.953		29.3	29.2	0.1	190.4	1.904		29.4	29.3	0.1	175.8	1.758		29.6	29.8	-0.2	187.2	10.2
63	195.3	1.953		29.6	29.3	0.4	190.4	1.904		29.4	29.4	0.0	175.8	1.758		29.5	29.5	0.0	187.2	10.2
64	190.4	1.904		29.5	29.4	0.1	190.4	1.904		29.4	29.4	0.0	175.8	1.758		29.5	29.5	0.0	185.5	8.5
65	190.4	1.904		29.6	29.5	0.1	190.4	1.904		29.4	29.4	0.0	175.8	1.758		29.6	29.6	0.0	185.5	8.5
66	190.4	1.904		29.2	29.2	0.0	190.4	1.904		29.4	29.5	-0.1	170.9	1.709		29.5	29.4	0.1	183.9	11.3
67	190.4	1.904		29.2	29.5	-0.2	185.5	1.855		29.5	29.4	0.1	170.9	1.709		29.6	29.4	0.2	182.3	10.2
68	190.4	1.904		29.3	29.7	-0.4	185.5	1.855		29.4	29.5	-0.1	170.9	1.709		29.5	29.4	0.1	182.3	10.2
69	190.4	1.904		29.4	29.7	-0.4	185.5	1.855		29.4	29.4	0.0	170.9	1.709		29.4	29.4	0.0	182.3	10.2
70	190.4	1.904		29.4	29.6	-0.2	185.5	1.855		29.5	29.5	0.0	170.9	1.709		29.6	29.6	0.0	182.3	10.2
71	185.5	1.855		29.6	29.5	0.1	185.5	1.855		29.5	29.5	0.0	166.0	1.660		29.7	29.6	0.1	179.0	11.3
72	185.5	1.855		29.4	29.3	0.1	185.5	1.855		29.5	29.5	0.0	170.9	1.709		29.5	29.4	0.1	180.7	8.5
73	185.5	1.855		29.5	29.3	0.2	185.5	1.855		29.4	29.5	-0.1	166.0	1.660		29.6	29.4	0.1	179.0	11.3
74	185.5	1.855		29.6	29.3	0.4	180.7	1.807		29.5	29.6	-0.1	166.0	1.660		29.4	29.3	0.1	177.4	10.2
75	185.5	1.855	97.70	29.5	29.4	0.1	180.7	1.807	99.09	29.6	29.7	-0.1	166.0	1.660	98.82	29.4	29.3	0.1	177.4	10.2
76	180.7	1.807		29.2	29.3	-0.1	180.7	1.807		29.5	29.9	-0.4	166.0	1.660		29.5	29.4	0.1	175.8	8.5
77	185.5	1.855		29.5	29.7	-0.2	180.7	1.807		29.3	29.6	-0.4	166.0	1.660		29.5	29.5	0.0	177.4	10.2
78	180.7	1.807		29.2	29.7	-0.5	180.7	1.807		29.4	29.7	-0.4	166.0	1.660		29.5	29.5	0.0	175.8	8.5

Table B.2 continued...

79	180.7	1.807		29.5	29.9	-0.4	180.7	1.807		29.5	29.6	-0.1	161.1	1.611		29.4	29.5	-0.1	174.2	11.3
80	180.7	1.807		29.5	29.7	-0.2	175.8	1.758		29.7	29.8	-0.1	161.1	1.611		29.7	29.8	-0.1	172.5	10.2
81	180.7	1.807		29.4	29.6	-0.2	175.8	1.758		29.4	29.5	-0.1	161.1	1.611		29.4	29.5	-0.1	172.5	10.2
82	180.7	1.807		29.5	29.5	0.0	175.8	1.758		29.4	29.6	-0.1	161.1	1.611		29.5	29.7	-0.2	172.5	10.2
83	180.7	1.807		29.5	29.4	0.1	175.8	1.758		29.4	29.3	0.1	161.1	1.611		29.5	29.7	-0.2	172.5	10.2
84	180.7	1.807		29.6	29.3	0.4	175.8	1.758		29.5	29.3	0.2	161.1	1.611		29.5	29.9	-0.4	172.5	10.2
85	175.8	1.758		29.6	29.4	0.2	180.7	1.807		29.4	29.1	0.2	161.1	1.611		29.6	29.7	-0.1	172.5	10.2
86	175.8	1.758		29.3	29.5	-0.1	175.8	1.758		29.4	29.3	0.1	161.1	1.611		29.5	29.7	-0.2	170.9	8.5
87	175.8	1.758		29.6	29.7	-0.1	175.8	1.758		29.5	29.3	0.2	156.3	1.563		29.6	29.6	0.0	169.3	11.3
88	175.8	1.758		29.4	29.9	-0.5	170.9	1.709		29.4	29.3	0.1	156.3	1.563		29.5	29.7	-0.2	167.6	10.2
89	175.8	1.758		29.4	29.7	-0.4	170.9	1.709		29.4	29.4	0.0	156.3	1.563		29.6	29.7	-0.1	167.6	10.2
90	175.8	1.758	97.70	29.4	29.5	-0.1	170.9	1.709	99.09	29.4	29.5	-0.1	156.3	1.563	98.85	29.4	29.4	0.0	167.6	10.2
91	175.8	1.758		29.5	29.3	0.2	170.9	1.709		29.4	29.6	-0.2	156.3	1.563		29.4	29.4	0.0	167.6	10.2
92	175.8	1.758		29.2	29.1	0.1	170.9	1.709		29.4	29.7	-0.4	156.3	1.563		29.4	29.3	0.1	167.6	10.2
93	170.9	1.709		29.4	29.3	0.1	170.9	1.709		29.3	29.6	-0.4	156.3	1.563		29.6	29.4	0.2	166.0	8.5
94	170.9	1.709		29.6	29.5	0.1	166.0	1.660		29.4	29.7	-0.4	156.3	1.563		29.6	29.4	0.2	164.4	7.5
95	170.9	1.709		29.4	29.7	-0.4	166.0	1.660		29.7	29.8	-0.1	151.4	1.514		29.4	29.3	0.1	162.8	10.2
96	170.9	1.709		29.6	29.6	0.0	166.0	1.660		29.7	29.6	0.1	151.4	1.514		29.5	29.3	0.2	162.8	10.2
97	170.9	1.709		29.5	29.7	-0.2	166.0	1.660		29.5	29.4	0.1	151.4	1.514		29.4	29.3	0.1	162.8	10.2
98	170.9	1.709		29.5	29.5	0.0	166.0	1.660		29.5	29.3	0.2	151.4	1.514		29.6	29.4	0.1	162.8	10.2
99	166.0	1.660		29.4	29.3	0.1	166.0	1.660		29.5	29.1	0.4	151.4	1.514		29.5	29.4	0.1	161.1	8.5
100	166.0	1.660		29.6	29.4	0.2	166.0	1.660		29.3	29.1	0.1	151.4	1.514		29.6	29.5	0.1	161.1	8.5
101	166.0	1.660		29.4	29.6	-0.2	161.1	1.611		29.4	29.4	0.0	151.4	1.514		29.5	29.6	-0.1	159.5	7.5
102	166.0	1.660		29.5	29.7	-0.2	161.1	1.611		29.5	29.5	0.0	151.4	1.514		29.4	29.7	-0.4	159.5	7.5
103	166.0	1.660		29.6	29.9	-0.2	161.1	1.611		29.3	29.6	-0.4	151.4	1.514		29.5	29.9	-0.4	159.5	7.5
104	166.0	1.660		29.4	29.6	-0.2	161.1	1.611		29.4	29.8	-0.4	146.5	1.465		29.4	29.7	-0.4	157.9	10.2
105	166.0	1.660	97.70	29.6	29.5	0.1	161.1	1.611	99.09	29.5	29.7	-0.2	146.5	1.465	98.85	29.6	29.6	0.0	157.9	10.2
106	161.1	1.611		29.6	29.3	0.4	161.1	1.611		29.4	29.6	-0.2	146.5	1.465		29.4	29.5	-0.1	156.3	8.5
107	161.1	1.611		29.4	29.3	0.1	161.1	1.611		29.4	29.6	-0.1	146.5	1.465		29.5	29.5	0.0	156.3	8.5
108	161.1	1.611		29.5	29.5	0.0	161.1	1.611		29.7	29.3	0.4	146.5	1.465		29.3	29.4	-0.1	156.3	8.5
109	161.1	1.611		29.6	29.7	-0.1	156.3	1.563		29.3	29.3	0.0	146.5	1.465		29.4	29.4	0.0	154.6	7.5
110	161.1	1.611		29.6	29.9	-0.2	156.3	1.563		29.6	29.4	0.1	146.5	1.465		29.3	29.1	0.1	154.6	7.5
111	161.1	1.611		29.6	29.7	-0.1	156.3	1.563		29.6	29.3	0.2	141.6	1.416		29.7	29.6	0.1	153.0	10.2
112	161.1	1.611		29.3	29.1	0.2	156.3	1.563		29.3	29.3	0.0	141.6	1.416		29.4	29.4	0.0	153.0	10.2
113	161.1	1.611		29.4	29.3	0.1	156.3	1.563		29.6	29.6	0.0	141.6	1.416		29.4	29.3	0.1	153.0	10.2
114	156.3	1.563		29.5	29.0	0.5	156.3	1.563		29.4	29.4	0.0	141.6	1.416		29.4	29.4	0.0	151.4	8.5
115	156.3	1.563		29.5	29.5	0.0	151.4	1.514		29.4	29.5	-0.1	141.6	1.416		29.6	29.6	0.0	149.7	7.5
116	156.3	1.563		29.6	29.6	0.0	151.4	1.514		29.4	29.7	-0.4	141.6	1.416		29.7	29.8	-0.1	149.7	7.5
117	156.3	1.563		29.5	29.9	-0.4	151.4	1.514		29.4	29.6	-0.2	141.6	1.416		29.7	29.9	-0.2	149.7	7.5
118	156.3	1.563		29.5	29.5	0.0	151.4	1.514		29.3	29.5	-0.2	141.6	1.416		29.4	29.6	-0.2	149.7	7.5
119	156.3	1.563		29.5	29.3	0.2	151.4	1.514		29.4	29.3	0.1	141.6	1.416		29.3	29.6	-0.4	149.7	7.5
120	156.3	1.563	97.70	29.3	29.0	0.4	151.4	1.514	99.12	29.7	29.3	0.4	136.7	1.367	98.82	29.7	29.9	-0.2	148.1	10.2
121	156.3	1.563		29.5	29.1	0.4	151.4	1.514		29.5	29.1	0.4	136.7	1.367		29.6	29.5	0.1	148.1	10.2

Table B.2 continued...

122	151.4	1.514		29.6	29.5	0.1	151.4	1.514		29.5	29.1	0.4	136.7	1.367		29.4	29.4	0.0	146.5	8.5
123	151.4	1.514		29.2	29.6	-0.4	151.4	1.514		29.5	29.4	0.1	136.7	1.367		29.5	29.3	0.2	146.5	8.5
124	151.4	1.514		29.6	29.7	-0.1	151.4	1.514		29.3	29.6	-0.4	136.7	1.367		29.4	29.3	0.1	146.5	8.5
125	151.4	1.514		29.6	29.7	-0.1	146.5	1.465		29.3	29.5	-0.2	136.7	1.367		29.5	29.4	0.1	144.9	7.5
126	151.4	1.514		29.2	29.2	0.0	146.5	1.465		29.6	29.9	-0.4	136.7	1.367		29.4	29.4	0.0	144.9	7.5
127	151.4	1.514		29.5	29.3	0.2	146.5	1.465		29.3	29.7	-0.4	136.7	1.367		29.6	29.4	0.2	144.9	7.5
128	151.4	1.514		29.5	29.3	0.2	146.5	1.465		29.6	29.7	-0.1	136.7	1.367		29.5	29.6	-0.1	144.9	7.5
129	151.4	1.514		29.6	29.4	0.2	146.5	1.465		29.3	29.3	0.0	136.7	1.367		29.4	29.7	-0.4	144.9	7.5
130	151.4	1.514		29.5	29.3	0.2	146.5	1.465		29.4	29.3	0.1	131.8	1.318		29.4	29.7	-0.4	143.2	10.2
131	151.4	1.514		29.2	29.3	-0.1	146.5	1.465		29.4	29.3	0.1	131.8	1.318		29.5	29.6	-0.1	143.2	10.2
132	146.5	1.465		29.3	29.7	-0.4	146.5	1.465		29.6	29.3	0.2	131.8	1.318		29.5	29.5	0.0	141.6	8.5
133	146.5	1.465		29.3	29.6	-0.2	141.6	1.416		29.4	29.4	0.0	131.8	1.318		29.4	29.3	0.1	140.0	7.5
134	146.5	1.465		29.2	29.6	-0.4	141.6	1.416		29.4	29.7	-0.2	131.8	1.318		29.6	29.5	0.1	140.0	7.5
135	146.5	1.465	97.70	29.5	29.4	0.1	141.6	1.416	99.12	29.6	29.7	-0.1	131.8	1.318	98.82	29.5	29.7	-0.2	140.0	7.5
136	146.5	1.465		29.3	29.0	0.4	141.6	1.416		29.4	29.7	-0.4	136.7	1.367		29.5	29.7	-0.2	141.6	4.9
137	146.5	1.465		29.2	29.1	0.1	141.6	1.416		29.4	29.7	-0.2	131.8	1.318		29.3	29.6	-0.4	140.0	7.5
138	146.5	1.465		29.2	29.2	0.0	141.6	1.416		29.3	29.4	-0.1	131.8	1.318		29.5	29.5	0.0	140.0	7.5
139	146.5	1.465		29.2	29.2	0.0	141.6	1.416		29.4	29.4	0.0	127.0	1.270		29.6	29.4	0.2	138.3	10.2
140	141.6	1.416		29.5	29.6	-0.1	141.6	1.416		29.7	29.2	0.5	127.0	1.270		29.5	29.4	0.1	136.7	8.5
141	141.6	1.416		29.3	29.5	-0.1	141.6	1.416		29.4	29.3	0.1	127.0	1.270		29.6	29.4	0.2	136.7	8.5
142	141.6	1.416		29.5	29.7	-0.2	141.6	1.416		29.7	29.4	0.2	127.0	1.270		29.5	29.4	0.1	136.7	8.5
143	141.6	1.416		29.0	29.5	-0.5	136.7	1.367		29.5	29.4	0.1	127.0	1.270		29.5	29.6	-0.1	135.1	7.5
144	141.6	1.416		29.5	29.3	0.1	136.7	1.367		29.4	29.6	-0.2	127.0	1.270		29.5	29.9	-0.4	135.1	7.5
145	141.6	1.416		29.5	29.2	0.2	136.7	1.367		29.3	29.7	-0.5	127.0	1.270		29.5	29.6	-0.1	135.1	7.5
146	141.6	1.416		29.3	28.9	0.4	136.7	1.367		29.5	29.6	-0.1	127.0	1.270		29.5	29.4	0.1	135.1	7.5
147	141.6	1.416		29.5	29.1	0.4	136.7	1.367		29.3	29.4	-0.1	122.1	1.221		29.4	29.3	0.1	133.5	10.2
148	141.6	1.416		29.2	29.2	0.0	136.7	1.367		29.5	29.3	0.2	122.1	1.221		29.5	29.4	0.1	133.5	10.2
149	141.6	1.416		29.0	29.3	-0.2	136.7	1.367		29.4	29.3	0.1	122.1	1.221		29.5	29.4	0.1	133.5	10.2
150	136.7	1.367	97.73	29.3	29.5	-0.2	136.7	1.367	99.05	29.4	29.4	0.0	122.1	1.221	98.82	29.6	29.5	0.1	131.8	8.5
151	136.7	1.367		29.5	29.7	-0.2	136.7	1.367		29.4	29.4	0.0	122.1	1.221		29.6	29.7	-0.1	131.8	8.5
152	136.7	1.367		29.5	29.6	-0.1	136.7	1.367		29.3	29.5	-0.2	122.1	1.221		29.4	29.7	-0.4	131.8	8.5
153	136.7	1.367		29.5	29.6	-0.1	131.8	1.318		29.5	29.6	-0.1	122.1	1.221		29.6	29.6	0.0	130.2	7.5
154	136.7	1.367		29.3	29.2	0.1	131.8	1.318		29.6	29.7	-0.1	122.1	1.221		29.7	29.6	0.1	130.2	7.5
155	136.7	1.367		29.5	29.2	0.2	131.8	1.318		29.3	29.4	-0.1	122.1	1.221		29.5	29.3	0.2	130.2	7.5
156	136.7	1.367		29.0	28.9	0.1	131.8	1.318		29.6	29.4	0.1	122.1	1.221		29.4	29.3	0.1	130.2	7.5
157	136.7	1.367		29.3	29.1	0.2	131.8	1.318		29.6	29.3	0.2	117.2	1.172		29.5	29.6	-0.1	128.6	10.2
158	136.7	1.367		29.2	29.0	0.1	131.8	1.318		29.5	29.3	0.2	117.2	1.172		29.5	29.7	-0.2	128.6	10.2
159	136.7	1.367		29.5	29.3	0.1	131.8	1.318		29.4	29.5	-0.1	117.2	1.172		29.5	29.5	0.0	128.6	10.2
160	136.7	1.367		29.3	29.3	0.0	131.8	1.318		29.3	29.6	-0.4	117.2	1.172		29.4	29.4	0.0	128.6	10.2
161	131.8	1.318		29.3	29.7	-0.4	127.0	1.270		29.3	29.6	-0.4	117.2	1.172		29.3	29.5	-0.2	125.3	7.5
162	131.8	1.318		29.2	29.6	-0.4	127.0	1.270		29.6	29.7	-0.1	117.2	1.172		29.4	29.3	0.1	125.3	7.5
163	131.8	1.318		29.3	29.6	-0.2	127.0	1.270		29.6	29.4	0.1	117.2	1.172		29.3	29.1	0.1	125.3	7.5
164	131.8	1.318		29.3	29.6	-0.2	127.0	1.270		29.7	29.3	0.4	117.2	1.172		29.5	29.4	0.1	125.3	7.5

Table B.2 continued...

165	131.8	1.318	97.80	29.0	29.2	-0.1	127.0	1.270	99.09	29.4	29.0	0.4	117.2	1.172	98.75	29.3	29.6	-0.4	125.3	7.5
166	131.8	1.318		29.3	29.0	0.2	127.0	1.270		29.3	29.1	0.1	117.2	1.172		29.5	29.7	-0.2	125.3	7.5
167	131.8	1.318		29.0	28.9	0.1	127.0	1.270		29.4	29.3	0.1	117.2	1.172		29.4	29.5	-0.1	125.3	7.5
168	131.8	1.318		29.0	29.0	0.0	127.0	1.270		29.6	29.7	-0.1	112.3	1.123		29.4	29.3	0.1	123.7	10.2
169	131.8	1.318		29.2	29.3	-0.1	127.0	1.270		29.6	29.8	-0.2	112.3	1.123		29.5	29.1	0.4	123.7	10.2
170	131.8	1.318		29.3	29.4	-0.1	127.0	1.270		29.6	29.8	-0.2	112.3	1.123		29.4	29.1	0.2	123.7	10.2
171	127.0	1.270		29.3	29.5	-0.2	122.1	1.221		29.4	29.8	-0.4	112.3	1.123		29.5	29.4	0.1	120.4	7.5
172	127.0	1.270		29.2	29.6	-0.4	122.1	1.221		29.0	29.4	-0.4	112.3	1.123		29.6	29.6	0.0	120.4	7.5
173	127.0	1.270		29.6	29.6	0.0	122.1	1.221		29.4	29.3	0.1	112.3	1.123		29.3	29.7	-0.5	120.4	7.5
174	127.0	1.270		29.2	29.2	0.0	122.1	1.221		29.3	29.1	0.1	112.3	1.123		29.8	29.8	0.0	120.4	7.5
175	127.0	1.270		29.5	29.2	0.2	122.1	1.221		29.3	29.4	-0.1	112.3	1.123		29.5	29.5	0.0	120.4	7.5
176	127.0	1.270		29.5	29.2	0.2	122.1	1.221		29.3	29.5	-0.2	112.3	1.123		29.5	29.3	0.2	120.4	7.5
177	127.0	1.270		29.2	28.9	0.2	122.1	1.221		29.4	29.8	-0.4	112.3	1.123		29.6	29.4	0.2	120.4	7.5
178	127.0	1.270		29.2	29.0	0.1	122.1	1.221		29.5	29.7	-0.2	112.3	1.123		29.5	29.7	-0.2	120.4	7.5
179	127.0	1.270		29.3	29.2	0.1	122.1	1.221		29.4	29.6	-0.2	107.4	1.074		29.6	29.7	-0.1	118.8	10.2
180	122.1	1.221	97.87	29.2	29.3	-0.1	122.1	1.221	99.09	29.3	29.5	-0.2	107.4	1.074	98.75	29.4	29.6	-0.2	117.2	8.5
181	122.1	1.221		29.0	29.3	-0.2	117.2	1.172		29.7	29.4	0.2	107.4	1.074		29.6	29.4	0.2	115.6	7.5
182	122.1	1.221		29.2	29.5	-0.4	117.2	1.172		29.3	29.1	0.1	107.4	1.074		29.6	29.3	0.4	115.6	7.5
183	122.1	1.221		29.5	29.7	-0.2	117.2	1.172		29.6	29.3	0.2	107.4	1.074		29.5	29.4	0.1	115.6	7.5
184	122.1	1.221		29.3	29.5	-0.1	117.2	1.172		29.3	29.1	0.1	107.4	1.074		29.5	29.6	-0.1	115.6	7.5
185	122.1	1.221		29.3	29.2	0.1	117.2	1.172		29.3	29.1	0.1	107.4	1.074		29.6	29.7	-0.1	115.6	7.5
186	122.1	1.221		29.3	28.9	0.4	117.2	1.172		29.3	29.4	-0.1	107.4	1.074		29.5	29.6	-0.1	115.6	7.5
187	122.1	1.221		29.0	29.2	-0.1	117.2	1.172		29.3	29.6	-0.4	107.4	1.074		29.6	29.5	0.1	115.6	7.5
188	122.1	1.221		29.2	29.2	0.0	117.2	1.172		29.4	29.9	-0.5	107.4	1.074		29.6	29.3	0.4	115.6	7.5
189	122.1	1.221		29.3	29.3	0.0	117.2	1.172		29.7	29.6	0.1	107.4	1.074		29.4	29.5	-0.1	115.6	7.5
190	122.1	1.221		29.3	29.6	-0.2	117.2	1.172		29.7	29.4	0.2	107.4	1.074		29.5	29.7	-0.2	115.6	7.5
191	122.1	1.221		29.2	29.7	-0.5	117.2	1.172		29.4	29.1	0.2	102.5	1.025		29.5	29.7	-0.2	113.9	10.2
192	117.2	1.172		29.3	29.7	-0.4	112.3	1.123		29.4	29.3	0.1	102.5	1.025		29.6	29.5	0.1	110.7	7.5
193	117.2	1.172		29.2	29.6	-0.4	112.3	1.123		29.5	29.3	0.2	102.5	1.025		29.6	29.3	0.4	110.7	7.5
194	117.2	1.172		29.2	29.5	-0.2	112.3	1.123		29.6	29.8	-0.2	102.5	1.025		29.5	29.4	0.1	110.7	7.5
195	117.2	1.172	97.87	29.3	29.3	0.0	112.3	1.123	99.05	29.4	29.8	-0.4	102.5	1.025	98.72	29.4	29.7	-0.4	110.7	7.5
196	117.2	1.172		29.2	29.2	0.0	112.3	1.123		29.5	29.4	0.1	102.5	1.025		29.6	29.9	-0.2	110.7	7.5
197	117.2	1.172		29.1	29.2	-0.1	112.3	1.123		29.5	29.3	0.2	102.5	1.025		29.6	29.5	0.1	110.7	7.5
198	117.2	1.172		29.5	29.2	0.2	112.3	1.123		29.5	29.1	0.4	102.5	1.025		29.6	29.4	0.2	110.7	7.5
199	117.2	1.172		29.3	29.2	0.1	112.3	1.123		29.5	29.1	0.4	102.5	1.025		29.5	29.4	0.1	110.7	7.5
200	117.2	1.172		29.2	29.5	-0.2	112.3	1.123		29.3	29.5	-0.2	102.5	1.025		29.3	29.3	0.0	110.7	7.5
201	112.3	1.123		29.2	29.6	-0.4	112.3	1.123		29.4	29.8	-0.4	102.5	1.025		29.5	29.7	-0.2	109.0	5.6
202	112.3	1.123		29.3	29.7	-0.4	112.3	1.123		29.6	29.8	-0.2	97.7	0.977		29.4	29.7	-0.4	107.4	8.5
203	112.3	1.123		29.5	29.6	-0.1	107.4	1.074		29.6	29.7	-0.1	97.7	0.977		29.5	29.5	0.0	105.8	7.5
204	112.3	1.123		29.6	29.5	0.1	107.4	1.074		29.4	29.1	0.2	97.7	0.977		29.7	29.3	0.5	105.8	7.5
205	112.3	1.123		29.2	29.1	0.1	107.4	1.074		29.4	29.1	0.2	97.7	0.977		29.5	29.5	0.0	105.8	7.5
206	112.3	1.123		29.3	29.2	0.1	107.4	1.074		29.5	29.4	0.1	97.7	0.977		29.5	29.7	-0.2	105.8	7.5
207	112.3	1.123		29.3	29.3	0.0	107.4	1.074		29.5	29.7	-0.2	97.7	0.977		29.5	29.9	-0.4	105.8	7.5

Table B.2 continued...

208	112.3	1.123		29.1	29.3	-0.2	107.4	1.074		29.3	29.7	-0.5	97.7	0.977		29.5	29.5	0.0	105.8	7.5
209	112.3	1.123		29.3	29.7	-0.4	107.4	1.074		29.5	29.5	0.0	97.7	0.977		29.6	29.4	0.2	105.8	7.5
210	112.3	1.123	97.87	29.2	29.6	-0.4	107.4	1.074	99.05	29.4	29.4	0.0	97.7	0.977	98.72	29.6	29.4	0.2	105.8	7.5
211	112.3	1.123		29.5	29.6	-0.1	107.4	1.074		29.5	29.3	0.2	97.7	0.977		29.5	29.6	-0.1	105.8	7.5
212	112.3	1.123		29.6	29.4	0.2	107.4	1.074		29.5	29.1	0.4	97.7	0.977		29.6	29.9	-0.2	105.8	7.5
213	107.4	1.074		29.4	29.4	0.0	107.4	1.074		29.4	29.3	0.1	97.7	0.977		29.5	29.6	-0.1	104.2	5.6
214	107.4	1.074		29.5	29.3	0.2	107.4	1.074		29.6	29.7	-0.1	97.7	0.977		29.5	29.4	0.1	104.2	5.6
215	107.4	1.074		29.4	29.1	0.2	107.4	1.074		29.3	29.6	-0.4	97.7	0.977		29.4	29.1	0.2	104.2	5.6
216	107.4	1.074		29.5	29.3	0.2	102.5	1.025		29.5	29.5	0.0	92.8	0.928		29.6	29.4	0.2	100.9	7.5
217	107.4	1.074		29.2	29.2	0.0	102.5	1.025		29.4	29.7	-0.2	92.8	0.928		29.5	29.7	-0.2	100.9	7.5
218	107.4	1.074		29.3	29.1	0.2	102.5	1.025		29.4	29.3	0.1	92.8	0.928		29.6	29.9	-0.2	100.9	7.5
219	107.4	1.074		29.5	29.2	0.2	102.5	1.025		29.3	29.1	0.1	92.8	0.928		29.4	29.5	-0.1	100.9	7.5
220	107.4	1.074		29.2	29.3	-0.1	102.5	1.025		29.3	29.3	0.0	92.8	0.928		29.6	29.3	0.4	100.9	7.5
221	107.4	1.074		29.6	29.7	-0.1	102.5	1.025		29.5	29.4	0.1	92.8	0.928		29.4	29.3	0.1	100.9	7.5
222	107.4	1.074		29.5	29.6	-0.1	102.5	1.025		29.3	29.5	-0.2	92.8	0.928		29.5	29.4	0.1	100.9	7.5
223	107.4	1.074		29.5	29.7	-0.2	102.5	1.025		29.4	29.8	-0.4	92.8	0.928		29.6	29.7	-0.1	100.9	7.5
224	102.5	1.025		29.2	29.6	-0.4	102.5	1.025		29.3	29.4	-0.1	92.8	0.928		29.7	29.9	-0.2	99.3	5.6
225	102.5	1.025	97.87	29.3	29.5	-0.1	102.5	1.025	99.05	29.3	29.3	0.0	92.8	0.928	98.72	29.4	29.3	0.1	99.3	5.6
226	102.5	1.025		29.5	29.6	-0.1	102.5	1.025		29.5	29.1	0.4	87.9	0.879		29.6	29.3	0.4	97.7	8.5
227	102.5	1.025		29.2	29.2	0.0	97.7	0.977		29.5	29.1	0.4	87.9	0.879		29.4	29.5	-0.1	96.0	7.5
228	102.5	1.025		29.5	29.5	0.0	97.7	0.977		29.3	29.4	-0.1	87.9	0.879		29.4	29.7	-0.4	96.0	7.5
229	102.5	1.025		29.3	29.2	0.1	97.7	0.977		29.4	29.6	-0.2	87.9	0.879		29.4	29.7	-0.4	96.0	7.5
230	102.5	1.025		29.6	29.4	0.2	97.7	0.977		29.4	29.6	-0.2	87.9	0.879		29.4	29.4	0.0	96.0	7.5
231	102.5	1.025		29.3	29.3	0.0	97.7	0.977		29.5	29.7	-0.2	87.9	0.879		29.4	29.3	0.1	96.0	7.5
232	102.5	1.025		29.5	29.3	0.1	97.7	0.977		29.3	29.3	0.0	87.9	0.879		29.4	29.3	0.1	96.0	7.5
233	102.5	1.025		29.5	29.7	-0.2	97.7	0.977		29.7	29.4	0.2	87.9	0.879		29.6	29.6	0.0	96.0	7.5
234	97.7	0.977		29.2	29.6	-0.4	97.7	0.977		29.4	29.3	0.1	87.9	0.879		29.4	29.7	-0.4	94.4	5.6
235	102.5	1.025		29.6	29.7	-0.1	97.7	0.977		29.6	29.4	0.1	87.9	0.879		29.5	29.7	-0.2	96.0	7.5
236	97.7	0.977		29.2	29.6	-0.4	97.7	0.977		29.3	29.5	-0.2	87.9	0.879		29.5	29.4	0.1	94.4	5.6
237	97.7	0.977		29.5	29.7	-0.2	97.7	0.977		29.4	29.7	-0.4	87.9	0.879		29.4	29.4	0.0	94.4	5.6
238	97.7	0.977		29.4	29.7	-0.4	97.7	0.977		29.4	29.4	0.0	87.9	0.879		29.5	29.5	0.0	94.4	5.6
239	97.7	0.977		29.5	29.6	-0.1	97.7	0.977		29.5	29.4	0.1	83.0	0.830		29.7	29.7	0.0	92.8	8.5
240	97.7	0.977	97.87	29.5	29.4	0.1	97.7	0.977	99.05	29.3	29.3	0.0	83.0	0.830	98.72	29.4	29.6	-0.2	92.8	8.5
241	97.7	0.977		29.6	29.3	0.4	92.8	0.928		29.7	29.4	0.2	83.0	0.830		29.6	29.4	0.2	91.1	7.5
242	97.7	0.977		29.6	29.4	0.2	92.8	0.928		29.5	29.5	0.0	83.0	0.830		29.5	29.4	0.1	91.1	7.5
243	97.7	0.977		29.4	29.4	0.0	92.8	0.928		29.4	29.6	-0.2	83.0	0.830		29.5	29.5	0.0	91.1	7.5
244	97.7	0.977		29.4	29.3	0.1	92.8	0.928		29.3	29.6	-0.4	83.0	0.830		29.5	29.6	-0.1	91.1	7.5
245	97.7	0.977		29.4	29.4	0.0	92.8	0.928		29.4	29.5	-0.1	83.0	0.830		29.4	29.6	-0.2	91.1	7.5
246	97.7	0.977		29.2	29.2	0.0	92.8	0.928		29.4	29.4	0.0	83.0	0.830		29.4	29.5	-0.1	91.1	7.5
247	97.7	0.977		29.6	29.4	0.2	92.8	0.928		29.5	29.1	0.4	83.0	0.830		29.5	29.1	0.4	91.1	7.5
248	97.7	0.977		29.4	29.3	0.1	92.8	0.928		29.5	29.4	0.1	83.0	0.830		29.6	29.4	0.2	91.1	7.5
249	97.7	0.977		29.3	29.1	0.2	92.8	0.928		29.4	29.5	-0.1	83.0	0.830		29.4	29.5	-0.1	91.1	7.5
250	92.8	0.928		29.6	29.4	0.2	92.8	0.928		29.3	29.6	-0.4	83.0	0.830		29.6	29.7	-0.1	89.5	5.6

Table B.2. continued... Comparison of the 6 replicates of the pressure decay tests conducted under the same conditions i.e. sample 2 (1 row caulking), 5th replicate of the sample, no carbon added, and bin empty.

Date	4.07.96						5.07.96						9.07.96							
Time	09:30 AM						12:00 AM						08:00 AM							
Sample	E25-4						E25-5						E25-6							
Time	Pg	Pg	Pat	Tin	Tout	Tin-Tuot,C	Pg	Pg	Pat	Tin	Tout	Tin-Tuot,C	Pg	Pg	Pat	Tin	Tout	Tin-Tuot,C	Pg	
(min)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(*C)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(*C)	(mm H2O)	(kPa)	(kPa)	(*C)	(*C)	(*C)	Mean	SD
0	253.9	2.539	98.38	29.6	29.5	0.1	253.9	2.539	98.14	30.3	29.7	0.6	253.9	2.539	99.39	29.9	29.5	0.4	253.9	0.0
1	249.0	2.490		29.6	29.4	0.2	244.1	2.441		30.1	29.6	0.5	239.3	2.393		29.9	29.4	0.5	244.1	4.9
2	249.0	2.490		29.3	29.5	-0.1	239.3	2.393		29.7	29.6	0.1	234.4	2.344		29.6	29.5	0.1	240.9	7.5
3	249.0	2.490		29.3	29.6	-0.2	234.4	2.344		29.9	29.6	0.2	234.4	2.344		29.6	29.7	-0.1	239.3	8.5
4	244.1	2.441		29.2	29.6	-0.4	234.4	2.344		29.8	29.6	0.1	229.5	2.295		29.5	29.9	-0.4	236.0	7.5
5	244.1	2.441		29.5	29.9	-0.4	229.5	2.295		29.9	29.6	0.2	229.5	2.295		29.4	29.7	-0.4	234.4	8.5
6	239.3	2.393		29.5	29.5	0.0	229.5	2.295		29.6	29.6	0.0	229.5	2.295		29.6	29.5	0.1	232.7	5.6
7	239.3	2.393		29.5	29.5	0.0	229.5	2.295		29.5	29.6	-0.1	229.5	2.295		29.5	29.3	0.2	232.7	5.6
8	239.3	2.393		29.4	29.3	0.1	229.5	2.295		29.6	29.6	0.0	224.6	2.246		29.6	29.5	0.1	231.1	7.5
9	239.3	2.393		29.2	29.2	0.0	229.5	2.295		29.5	29.6	-0.1	224.6	2.246		29.5	29.6	-0.1	231.1	7.5
10	239.3	2.393		29.5	29.2	0.2	224.6	2.246		29.4	29.5	-0.1	224.6	2.246		29.5	29.6	-0.1	229.5	8.5
11	239.3	2.393		29.3	29.2	0.1	224.6	2.246		29.6	29.6	0.0	224.6	2.246		29.5	29.9	-0.4	229.5	8.5
12	234.4	2.344		29.2	29.2	0.0	224.6	2.246		29.4	29.6	-0.2	224.6	2.246		29.6	30.0	-0.4	227.9	5.6
13	234.4	2.344		29.3	29.3	0.0	219.7	2.197		29.6	29.6	0.0	219.7	2.197		29.6	29.6	0.0	224.6	8.5
14	234.4	2.344		29.3	29.3	0.0	219.7	2.197		29.5	29.6	-0.1	219.7	2.197		29.6	29.4	0.2	224.6	8.5
15	229.5	2.295	98.38	29.2	29.3	-0.1	219.7	2.197	98.14	29.4	29.8	-0.4	219.7	2.197	99.39	29.5	29.3	0.2	223.0	5.6
16	229.5	2.295		29.5	29.6	-0.1	219.7	2.197		29.5	29.9	-0.4	219.7	2.197		29.6	29.6	0.0	223.0	5.6
17	229.5	2.295		29.2	29.6	-0.4	214.8	2.148		29.8	30.0	-0.2	219.7	2.197		29.6	29.5	0.1	221.4	7.5
18	229.5	2.295		29.5	29.7	-0.2	214.8	2.148		29.6	29.8	-0.1	210.0	2.100		29.5	29.9	-0.4	218.1	10.2
19	229.5	2.295		29.5	29.7	-0.2	214.8	2.148		29.3	29.6	-0.4	214.8	2.148		29.7	30.0	-0.2	219.7	8.5
20	224.6	2.246		29.2	29.6	-0.4	214.8	2.148		29.6	29.7	-0.1	214.8	2.148		29.5	29.9	-0.4	218.1	5.6
21	224.6	2.246		29.2	29.5	-0.2	214.8	2.148		29.4	29.5	-0.1	214.8	2.148		29.5	29.6	-0.1	218.1	5.6
22	224.6	2.246		29.2	29.3	-0.1	214.8	2.148		29.7	29.6	0.1	214.8	2.148		29.6	29.4	0.2	218.1	5.6
23	224.6	2.246		29.3	29.3	0.0	210.0	2.100		29.6	29.7	-0.1	214.8	2.148		29.5	29.4	0.1	216.5	7.5
24	219.7	2.197		29.2	29.0	0.1	210.0	2.100		29.6	29.7	-0.1	210.0	2.100		29.4	29.4	0.0	213.2	5.6
25	219.7	2.197		29.5	29.2	0.2	210.0	2.100		29.7	29.5	0.2	210.0	2.100		29.6	29.6	0.0	213.2	5.6
26	219.7	2.197		29.5	29.3	0.1	210.0	2.100		29.7	29.5	0.2	210.0	2.100		29.5	29.7	-0.2	213.2	5.6
27	219.7	2.197		29.5	29.3	0.1	205.1	2.051		29.6	29.5	0.1	210.0	2.100		29.7	30.0	-0.4	211.6	7.5
28	219.7	2.197		29.5	29.2	0.2	205.1	2.051		29.5	29.3	0.1	205.1	2.051		29.4	29.7	-0.4	210.0	8.5
29	219.7	2.197		29.2	29.3	-0.1	205.1	2.051		29.4	29.2	0.2	205.1	2.051		29.6	29.5	0.1	210.0	8.5
30	214.8	2.148	98.48	29.3	29.7	-0.4	205.1	2.051	98.14	29.4	29.4	0.0	205.1	2.051	99.43	29.5	29.3	0.2	208.3	5.6
31	214.8	2.148		29.7	29.7	0.0	200.2	2.002		29.5	29.5	0.0	205.1	2.051		29.5	29.4	0.1	206.7	7.5
32	214.8	2.148		29.3	29.7	-0.4	200.2	2.002		29.6	29.6	0.0	205.1	2.051		29.4	29.6	-0.2	206.7	7.5
33	214.8	2.148		29.3	29.7	-0.4	200.2	2.002		29.3	29.6	-0.2	205.1	2.051		29.5	29.7	-0.2	206.7	7.5
34	214.8	2.148		28.9	29.5	-0.6	200.2	2.002		29.3	29.7	-0.4	200.2	2.002		29.4	29.9	-0.5	205.1	8.5
35	210.0	2.100		29.5	29.8	-0.4	200.2	2.002		29.5	29.8	-0.4	200.2	2.002		29.6	29.9	-0.2	203.5	5.6

Table B.2 continued...

36	210.0	2.100		29.5	30.0	-0.5	195.3	1.953		29.6	30.0	-0.4	200.2	2.002		29.7	29.7	0.0	201.8	7.5
37	210.0	2.100		29.3	29.6	-0.2	195.3	1.953		29.7	30.0	-0.2	200.2	2.002		29.6	29.4	0.1	201.8	7.5
38	210.0	2.100		29.5	29.5	0.0	195.3	1.953		29.5	29.8	-0.4	195.3	1.953		29.6	29.6	0.0	200.2	8.5
39	205.1	2.051		29.5	29.5	0.0	195.3	1.953		29.5	29.5	0.0	195.3	1.953		29.4	29.5	-0.1	198.6	5.6
40	205.1	2.051		29.3	29.2	0.1	195.3	1.953		29.6	29.6	0.0	195.3	1.953		29.7	29.9	-0.2	198.6	5.6
41	205.1	2.051		29.5	29.4	0.1	195.3	1.953		29.3	29.3	0.0	195.3	1.953		29.6	30.0	-0.4	198.6	5.6
42	205.1	2.051		29.6	29.2	0.4	190.4	1.904		29.6	29.5	0.1	195.3	1.953		29.5	29.7	-0.2	196.9	7.5
43	205.1	2.051		29.3	29.3	0.0	190.4	1.904		29.7	29.5	0.2	195.3	1.953		29.6	29.5	0.1	196.9	7.5
44	200.2	2.002		29.3	29.3	0.0	190.4	1.904		29.7	29.6	0.1	190.4	1.904		29.4	29.4	0.0	193.7	5.6
45	200.2	2.002	98.48	29.5	29.3	0.1	190.4	1.904	98.17	29.3	29.5	-0.1	190.4	1.904	99.43	29.4	29.4	0.0	193.7	5.6
46	200.2	2.002		29.2	29.3	-0.1	185.5	1.855		29.5	29.9	-0.4	190.4	1.904		29.4	29.5	-0.1	192.1	7.5
47	200.2	2.002		29.5	29.5	0.0	185.5	1.855		29.3	29.7	-0.4	190.4	1.904		29.5	29.7	-0.2	192.1	7.5
48	200.2	2.002		29.3	29.5	-0.1	185.5	1.855		29.5	29.7	-0.2	190.4	1.904		29.5	29.9	-0.4	192.1	7.5
49	200.2	2.002		29.5	29.7	-0.2	185.5	1.855		29.5	29.6	-0.1	190.4	1.904		29.6	29.9	-0.2	192.1	7.5
50	195.3	1.953		29.6	29.7	-0.1	185.5	1.855		29.5	29.2	0.2	185.5	1.855		29.4	29.6	-0.2	188.8	5.6
51	195.3	1.953		29.5	29.7	-0.2	185.5	1.855		29.3	29.2	0.1	185.5	1.855		29.6	29.4	0.2	188.8	5.6
52	195.3	1.953		29.4	29.9	-0.5	180.7	1.807		29.5	29.4	0.1	185.5	1.855		29.5	29.5	0.0	187.2	7.5
53	195.3	1.953		29.5	29.9	-0.4	180.7	1.807		29.6	29.4	0.2	185.5	1.855		29.4	29.4	0.0	187.2	7.5
54	190.4	1.904		29.5	29.7	-0.2	180.7	1.807		29.3	29.3	0.0	185.5	1.855		29.4	29.5	-0.1	185.5	4.9
55	190.4	1.904		29.6	29.7	-0.1	180.7	1.807		29.5	29.6	-0.1	180.7	1.807		29.5	29.6	-0.1	183.9	5.6
56	190.4	1.904		29.3	29.6	-0.2	180.7	1.807		29.6	29.9	-0.2	180.7	1.807		29.6	30.0	-0.4	183.9	5.6
57	190.4	1.904		29.5	29.6	-0.1	175.8	1.758		29.5	29.7	-0.2	180.7	1.807		29.4	29.9	-0.5	182.3	7.5
58	190.4	1.904		29.2	29.6	-0.4	175.8	1.758		29.5	30.0	-0.5	180.7	1.807		29.5	29.7	-0.2	182.3	7.5
59	190.4	1.904		29.2	29.2	0.0	175.8	1.758		29.4	29.6	-0.2	180.7	1.807		29.6	29.5	0.1	182.3	7.5
60	185.5	1.855	98.48	29.5	29.5	0.0	175.8	1.758	98.21	29.7	29.5	0.2	180.7	1.807	99.43	29.4	29.5	-0.1	180.7	4.9
61	185.5	1.855		29.3	29.3	0.0	175.8	1.758		29.3	29.3	0.0	180.7	1.807		29.6	29.4	0.2	180.7	4.9
62	185.5	1.855		29.6	29.5	0.1	175.8	1.758		29.3	29.1	0.2	180.7	1.807		29.5	29.5	0.0	180.7	4.9
63	185.5	1.855		29.5	29.3	0.1	170.9	1.709		29.5	29.2	0.2	175.8	1.758		29.4	29.4	0.0	177.4	7.5
64	185.5	1.855		29.5	29.2	0.2	170.9	1.709		29.6	29.3	0.2	175.8	1.758		29.5	29.4	0.1	177.4	7.5
65	180.7	1.807		29.2	29.3	-0.1	170.9	1.709		29.6	29.3	0.2	175.8	1.758		29.5	29.5	0.0	175.8	4.9
66	180.7	1.807		29.3	29.3	0.0	170.9	1.709		29.3	29.6	-0.2	175.8	1.758		29.6	29.9	-0.2	175.8	4.9
67	180.7	1.807		29.5	29.5	0.0	170.9	1.709		29.5	29.7	-0.2	175.8	1.758		29.4	29.9	-0.5	175.8	4.9
68	180.7	1.807		29.0	29.4	-0.4	170.9	1.709		29.4	29.9	-0.5	175.8	1.758		29.6	29.9	-0.2	175.8	4.9
69	180.7	1.807		29.5	29.6	-0.1	166.0	1.660		29.4	29.9	-0.5	170.9	1.709		29.6	29.9	-0.2	172.5	7.5
70	180.7	1.807		29.6	29.7	-0.1	166.0	1.660		29.5	29.7	-0.2	170.9	1.709		29.5	29.9	-0.4	172.5	7.5
71	180.7	1.807		29.6	29.9	-0.2	166.0	1.660		29.6	29.7	-0.1	170.9	1.709		29.5	29.5	0.0	172.5	7.5
72	175.8	1.758		29.2	29.5	-0.4	166.0	1.660		29.7	29.7	0.0	170.9	1.709		29.4	29.5	-0.1	170.9	4.9
73	175.8	1.758		29.5	29.8	-0.4	166.0	1.660		29.5	29.4	0.1	170.9	1.709		29.4	29.4	0.0	170.9	4.9
74	175.8	1.758		29.3	29.6	-0.2	161.1	1.611		29.6	29.4	0.2	166.0	1.660		29.5	29.4	0.1	167.6	7.5
75	175.8	1.758	98.38	29.5	29.5	0.0	161.1	1.611	98.10	29.4	29.5	-0.1	166.0	1.660	99.46	29.6	29.3	0.4	167.6	7.5
76	175.8	1.758		29.3	29.5	-0.1	161.1	1.611		29.4	29.5	-0.1	166.0	1.660		29.6	29.4	0.2	167.6	7.5
77	175.8	1.758		29.5	29.3	0.1	161.1	1.611		29.4	29.5	-0.1	166.0	1.660		29.5	29.4	0.1	167.6	7.5
78	170.9	1.709		29.3	29.3	0.0	161.1	1.611		29.4	29.7	-0.4	166.0	1.660		29.5	29.5	0.0	166.0	4.9

Table B.2 continued...

79	170.9	1.709		29.5	29.3	0.1	156.3	1.563		29.5	29.7	-0.2	166.0	1.660		29.5	29.6	-0.1	164.4	7.5
80	170.9	1.709		29.5	29.3	0.1	156.3	1.563		29.4	29.7	-0.4	161.1	1.611		29.6	29.8	-0.2	162.8	7.5
81	170.9	1.709		29.3	29.2	0.1	156.3	1.563		29.5	29.7	-0.2	161.1	1.611		29.4	29.7	-0.4	162.8	7.5
82	170.9	1.709		29.2	29.2	0.0	156.3	1.563		29.5	29.5	0.0	161.1	1.611		29.4	29.9	-0.5	162.8	7.5
83	166.0	1.660		29.3	29.5	-0.1	156.3	1.563		29.5	29.3	0.2	161.1	1.611		29.6	30.0	-0.4	161.1	4.9
84	166.0	1.660		29.2	29.4	-0.2	156.3	1.563		29.4	29.3	0.1	161.1	1.611		29.4	29.7	-0.4	161.1	4.9
85	166.0	1.660		29.3	29.5	-0.2	156.3	1.563		29.6	29.3	0.4	161.1	1.611		29.4	29.5	-0.1	161.1	4.9
86	166.0	1.660		29.3	29.7	-0.4	151.4	1.514		29.4	29.4	0.0	161.1	1.611		29.4	29.3	0.1	159.5	7.5
87	166.0	1.660		29.5	30.0	-0.5	151.4	1.514		29.6	29.5	0.1	156.3	1.563		29.4	29.3	0.1	157.9	7.5
88	166.0	1.660		29.6	29.9	-0.2	151.4	1.514		29.6	29.6	0.0	156.3	1.563		29.5	29.3	0.2	157.9	7.5
89	166.0	1.660		29.2	29.6	-0.4	151.4	1.514		29.5	29.9	-0.4	156.3	1.563		29.6	29.3	0.4	157.9	7.5
90	161.1	1.611	98.38	29.3	29.5	-0.1	151.4	1.514	98.10	29.4	29.9	-0.5	156.3	1.563	99.43	29.6	29.5	0.1	156.3	4.9
91	161.1	1.611		29.5	29.2	0.2	151.4	1.514		29.4	29.9	-0.5	156.3	1.563		29.6	29.6	0.0	156.3	4.9
92	161.1	1.611		29.3	29.2	0.1	146.5	1.465		29.5	29.7	-0.2	156.3	1.563		29.5	29.7	-0.2	154.6	7.5
93	161.1	1.611		29.5	29.3	0.1	146.5	1.465		29.5	29.6	-0.1	151.4	1.514		29.4	29.9	-0.5	153.0	7.5
94	161.1	1.611		29.3	29.2	0.1	146.5	1.465		29.5	29.6	-0.1	151.4	1.514		29.5	29.7	-0.2	153.0	7.5
95	161.1	1.611		29.3	29.2	0.1	146.5	1.465		29.6	29.6	0.0	151.4	1.514		29.5	29.5	0.0	153.0	7.5
96	156.3	1.563		29.2	29.3	-0.1	146.5	1.465		29.5	29.5	0.0	151.4	1.514		29.6	29.5	0.1	151.4	4.9
97	156.3	1.563		29.2	29.5	-0.2	146.5	1.465		29.6	29.5	0.1	151.4	1.514		29.5	29.3	0.2	151.4	4.9
98	156.3	1.563		29.3	29.7	-0.4	141.6	1.416		29.5	29.4	0.1	151.4	1.514		29.6	29.3	0.4	149.7	7.5
99	156.3	1.563		29.2	29.6	-0.5	141.6	1.416		29.5	29.3	0.2	151.4	1.514		29.5	29.3	0.1	149.7	7.5
100	156.3	1.563		29.6	29.9	-0.2	141.6	1.416		29.6	29.4	0.2	151.4	1.514		29.5	29.9	-0.4	149.7	7.5
101	156.3	1.563		29.6	29.7	-0.1	141.6	1.416		29.5	29.4	0.1	146.5	1.465		29.4	29.9	-0.5	148.1	7.5
102	151.4	1.514		29.2	29.5	-0.2	141.6	1.416		29.5	29.3	0.2	146.5	1.465		29.4	30.0	-0.6	146.5	4.9
103	151.4	1.514		29.5	29.2	0.2	141.6	1.416		29.6	29.5	0.1	146.5	1.465		29.5	29.7	-0.2	146.5	4.9
104	151.4	1.514		29.5	29.3	0.1	141.6	1.416		29.5	29.5	0.0	146.5	1.465		29.5	29.5	0.0	146.5	4.9
105	151.4	1.514	98.41	29.2	29.0	0.1	136.7	1.367	98.17	29.5	29.5	0.0	146.5	1.465	99.46	29.5	29.4	0.1	144.9	7.5
106	151.4	1.514		29.5	29.3	0.1	136.7	1.367		29.5	29.6	-0.1	146.5	1.465		29.4	29.4	0.0	144.9	7.5
107	151.4	1.514		29.2	29.5	-0.2	136.7	1.367		29.6	29.7	-0.1	146.5	1.465		29.3	29.2	0.1	144.9	7.5
108	151.4	1.514		29.0	29.4	-0.4	136.7	1.367		29.6	29.7	-0.1	146.5	1.465		29.4	29.4	0.0	144.9	7.5
109	146.5	1.465		29.0	29.5	-0.5	136.7	1.367		29.5	29.7	-0.2	146.5	1.465		29.6	29.5	0.1	143.2	5.6
110	146.5	1.465		29.5	29.7	-0.2	136.7	1.367		29.5	29.7	-0.2	141.6	1.416		29.5	29.6	-0.1	141.6	4.9
111	146.5	1.465		29.5	29.8	-0.4	136.7	1.367		29.5	29.9	-0.4	141.6	1.416		29.4	29.6	-0.2	141.6	4.9
112	146.5	1.465		29.3	29.7	-0.4	136.7	1.367		29.6	29.7	-0.1	141.6	1.416		29.5	29.9	-0.4	141.6	4.9
113	146.5	1.465		29.5	29.5	0.0	131.8	1.318		29.5	29.7	-0.2	141.6	1.416		29.4	29.7	-0.4	140.0	7.5
114	146.5	1.465		29.3	29.6	-0.2	131.8	1.318		29.4	29.6	-0.2	141.6	1.416		29.4	29.6	-0.2	140.0	7.5
115	146.5	1.465		29.5	29.2	0.2	131.8	1.318		29.5	29.5	0.0	141.6	1.416		29.3	29.5	-0.1	140.0	7.5
116	146.5	1.465		29.5	29.2	0.2	131.8	1.318		29.5	29.6	-0.1	141.6	1.416		29.5	29.3	0.1	140.0	7.5
117	141.6	1.416		29.3	29.2	0.1	131.8	1.318		29.6	29.6	0.0	141.6	1.416		29.5	29.5	0.0	138.3	5.6
118	141.6	1.416		29.5	29.3	0.1	127.0	1.270		29.4	29.5	-0.1	141.6	1.416		29.5	29.4	0.1	136.7	8.5
119	141.6	1.416		29.2	29.5	-0.2	127.0	1.270		29.4	29.5	-0.1	136.7	1.367		29.5	29.5	0.0	135.1	7.5
120	141.6	1.416	98.41	29.2	29.6	-0.4	127.0	1.270	98.17	29.5	29.4	0.1	136.7	1.367	99.46	29.6	29.4	0.2	135.1	7.5
121	141.6	1.416		29.3	29.8	-0.5	127.0	1.270		29.6	29.5	0.1	136.7	1.367		29.6	29.6	0.0	135.1	7.5

Table B.2 continued...

122	141.6	1.416		29.3	29.7	-0.4	127.0	1.270		29.4	29.3	0.1	136.7	1.367		29.6	29.9	-0.2	135.1	7.5
123	141.6	1.416		29.3	29.6	-0.2	127.0	1.270		29.5	29.4	0.1	136.7	1.367		29.4	29.9	-0.5	135.1	7.5
124	136.7	1.367		29.3	29.6	-0.2	127.0	1.270		29.5	29.5	0.0	136.7	1.367		29.6	29.6	0.0	133.5	5.6
125	136.7	1.367		29.3	29.3	0.0	127.0	1.270		29.5	29.5	0.0	136.7	1.367		29.6	29.6	0.0	133.5	5.6
126	136.7	1.367		29.5	29.2	0.2	127.0	1.270		29.6	29.5	0.1	136.7	1.367		29.5	29.4	0.1	133.5	5.6
127	136.7	1.367		29.3	29.2	0.1	122.1	1.221		29.6	29.5	0.1	136.7	1.367		29.5	29.4	0.1	131.8	8.5
128	136.7	1.367		29.3	29.3	0.0	122.1	1.221		29.6	29.6	0.0	131.8	1.318		29.5	29.5	0.0	130.2	7.5
129	136.7	1.367		29.4	29.4	0.0	122.1	1.221		29.5	29.7	-0.2	131.8	1.318		29.5	29.5	0.0	130.2	7.5
130	136.7	1.367		29.6	29.8	-0.2	122.1	1.221		29.6	29.6	0.0	131.8	1.318		29.3	29.6	-0.2	130.2	7.5
131	131.8	1.318		29.3	29.7	-0.4	122.1	1.221		29.6	29.9	-0.2	131.8	1.318		29.5	29.8	-0.4	128.6	5.6
132	136.7	1.367		29.2	29.5	-0.4	122.1	1.221		29.5	29.9	-0.4	131.8	1.318		29.4	29.7	-0.4	130.2	7.5
133	131.8	1.318		29.6	29.6	0.0	117.2	1.172		29.5	29.9	-0.4	131.8	1.318		29.5	29.3	0.1	127.0	8.5
134	131.8	1.318		29.5	29.2	0.2	117.2	1.172		29.5	29.7	-0.2	131.8	1.318		29.5	29.3	0.1	127.0	8.5
135	131.8	1.318	98.48	29.3	29.3	0.0	117.2	1.172	98.10	29.5	29.6	-0.1	131.8	1.318	99.46	29.4	29.4	0.0	127.0	8.5
136	131.8	1.318		29.5	29.2	0.2	117.2	1.172		29.5	29.7	-0.2	127.0	1.270		29.5	29.3	0.2	125.3	7.5
137	131.8	1.318		29.3	29.2	0.1	117.2	1.172		29.5	29.5	0.0	127.0	1.270		29.4	29.5	-0.1	125.3	7.5
138	131.8	1.318		29.2	29.2	0.0	117.2	1.172		29.4	29.4	0.0	127.0	1.270		29.4	29.9	-0.5	125.3	7.5
139	127.0	1.270		29.2	29.2	0.0	117.2	1.172		29.5	29.3	0.2	127.0	1.270		29.5	30.0	-0.5	123.7	5.6
140	127.0	1.270		29.3	29.5	-0.1	117.2	1.172		29.5	29.4	0.1	127.0	1.270		29.2	29.6	-0.4	123.7	5.6
141	127.0	1.270		29.3	29.5	-0.2	112.3	1.123		29.4	29.3	0.1	127.0	1.270		29.5	29.6	-0.1	122.1	8.5
142	127.0	1.270		29.3	29.7	-0.4	112.3	1.123		29.4	29.3	0.1	127.0	1.270		29.6	29.4	0.2	122.1	8.5
143	127.0	1.270		29.3	29.5	-0.1	112.3	1.123		29.6	29.4	0.2	122.1	1.221		29.4	29.5	-0.1	120.4	7.5
144	127.0	1.270		29.5	29.5	0.0	112.3	1.123		29.5	29.3	0.2	122.1	1.221		29.6	29.5	0.1	120.4	7.5
145	127.0	1.270		29.3	29.2	0.1	112.3	1.123		29.5	29.4	0.1	122.1	1.221		29.5	29.7	-0.2	120.4	7.5
146	122.1	1.221		29.3	29.2	0.1	112.3	1.123		29.7	29.7	0.0	122.1	1.221		29.2	29.7	-0.5	118.8	5.6
147	122.1	1.221		29.5	29.3	0.1	112.3	1.123		29.6	29.4	0.2	122.1	1.221		29.5	30.0	-0.5	118.8	5.6
148	122.1	1.221		29.3	29.3	0.0	112.3	1.123		29.5	29.4	0.1	122.1	1.221		29.6	29.7	-0.1	118.8	5.6
149	122.1	1.221		29.2	29.3	-0.1	112.3	1.123		29.4	29.5	-0.1	122.1	1.221		29.6	29.5	0.1	118.8	5.6
150	122.1	1.221	98.48	29.3	29.7	-0.4	107.4	1.074	98.17	29.4	29.7	-0.4	122.1	1.221	99.46	29.3	29.2	0.1	117.2	8.5
151	122.1	1.221		29.5	29.8	-0.4	107.4	1.074		29.5	29.7	-0.2	122.1	1.221		29.5	29.2	0.2	117.2	8.5
152	122.1	1.221		29.6	29.7	-0.1	107.4	1.074		29.5	29.7	-0.2	122.1	1.221		29.6	29.6	0.0	117.2	8.5
153	122.1	1.221		29.0	29.3	-0.2	107.4	1.074		29.4	29.7	-0.4	117.2	1.172		29.5	29.7	-0.2	115.6	7.5
154	122.1	1.221		29.6	29.3	0.2	107.4	1.074		29.6	29.6	0.0	117.2	1.172		29.5	29.9	-0.4	115.6	7.5
155	122.1	1.221		29.0	29.2	-0.1	107.4	1.074		29.4	29.5	-0.1	117.2	1.172		29.3	29.7	-0.4	115.6	7.5
156	117.2	1.172		29.3	29.2	0.1	107.4	1.074		29.6	29.3	0.4	117.2	1.172		29.5	29.8	-0.4	113.9	5.6
157	117.2	1.172		29.5	29.2	0.2	107.4	1.074		29.6	29.4	0.2	117.2	1.172		29.6	29.9	-0.2	113.9	5.6
158	117.2	1.172		29.5	29.3	0.1	107.4	1.074		29.6	29.3	0.4	117.2	1.172		29.6	29.6	0.0	113.9	5.6
159	117.2	1.172		29.3	29.3	0.0	107.4	1.074		29.4	29.3	0.1	117.2	1.172		29.5	29.3	0.1	113.9	5.6
160	117.2	1.172		29.3	29.3	0.0	102.5	1.025		29.6	29.3	0.4	117.2	1.172		29.2	29.2	0.0	112.3	8.5
161	117.2	1.172		29.5	29.7	-0.2	102.5	1.025		29.6	29.4	0.2	112.3	1.123		29.5	29.4	0.1	110.7	7.5
162	117.2	1.172		29.2	29.6	-0.5	102.5	1.025		29.6	29.5	0.1	112.3	1.123		29.4	29.5	-0.1	110.7	7.5
163	112.3	1.123		29.5	29.9	-0.4	102.5	1.025		29.4	29.4	0.0	112.3	1.123		29.3	29.7	-0.4	109.0	5.6
164	112.3	1.123		29.5	29.6	-0.1	102.5	1.025		29.4	29.5	-0.1	112.3	1.123		29.5	29.7	-0.2	109.0	5.6

Table B.2 continued...

165	112.3	1.123	98.31	29.5	29.6	-0.1	102.5	1.025	98.14	29.4	29.5	-0.1	112.3	1.123	99.46	29.3	29.7	-0.4	109.0	5.6
166	112.3	1.123		29.3	29.2	0.1	102.5	1.025		29.5	29.7	-0.2	112.3	1.123		29.5	29.6	-0.1	109.0	5.6
167	112.3	1.123		29.2	29.0	0.1	102.5	1.025		29.5	29.9	-0.4	112.3	1.123		29.5	29.6	-0.1	109.0	5.6
168	112.3	1.123		29.3	29.2	0.1	97.7	0.977		29.4	29.9	-0.5	112.3	1.123		29.5	29.4	0.1	107.4	8.5
169	112.3	1.123		29.2	29.2	0.0	97.7	0.977		29.6	29.7	-0.1	112.3	1.123		29.3	29.2	0.1	107.4	8.5
170	112.3	1.123		29.2	29.3	-0.1	97.7	0.977		29.5	29.7	-0.2	112.3	1.123		29.5	29.5	0.0	107.4	8.5
171	112.3	1.123		29.5	29.7	-0.2	97.7	0.977		29.6	29.6	0.0	107.4	1.074		29.5	29.7	-0.2	105.8	7.5
172	107.4	1.074		29.6	29.8	-0.2	97.7	0.977		29.3	29.6	-0.4	107.4	1.074		29.3	29.7	-0.4	104.2	5.6
173	107.4	1.074		29.5	29.8	-0.4	97.7	0.977		29.4	29.6	-0.2	107.4	1.074		29.5	30.0	-0.5	104.2	5.6
174	107.4	1.074		29.2	29.5	-0.4	97.7	0.977		29.4	29.5	-0.1	107.4	1.074		29.5	30.0	-0.5	104.2	5.6
175	107.4	1.074		29.5	29.6	-0.1	97.7	0.977		29.5	29.6	-0.1	107.4	1.074		29.6	29.6	0.0	104.2	5.6
176	107.4	1.074		29.5	29.3	0.1	97.7	0.977		29.6	29.4	0.2	107.4	1.074		29.5	29.2	0.2	104.2	5.6
177	107.4	1.074		29.3	28.9	0.4	97.7	0.977		29.6	29.4	0.2	107.4	1.074		29.6	29.5	0.1	104.2	5.6
178	107.4	1.074		29.3	29.2	0.1	97.7	0.977		29.6	29.4	0.2	107.4	1.074		29.6	29.6	0.0	104.2	5.6
179	107.4	1.074		29.3	29.2	0.1	92.8	0.928		29.5	29.1	0.4	107.4	1.074		29.5	29.7	-0.2	102.5	8.5
180	102.5	1.025	98.27	29.3	29.6	-0.2	92.8	0.928	98.14	29.5	29.4	0.1	107.4	1.074	99.49	29.5	30.0	-0.5	100.9	7.5
181	102.5	1.025		29.3	29.5	-0.2	92.8	0.928		29.4	29.3	0.1	107.4	1.074		29.3	29.7	-0.4	100.9	7.5
182	102.5	1.025		29.6	29.7	-0.1	92.8	0.928		29.5	29.4	0.1	107.4	1.074		29.2	29.3	-0.1	100.9	7.5
183	102.5	1.025		29.3	29.6	-0.2	92.8	0.928		29.6	29.5	0.1	102.5	1.025		29.3	29.3	0.0	99.3	5.6
184	102.5	1.025		29.3	29.3	0.0	92.8	0.928		29.6	29.6	0.0	102.5	1.025		29.5	29.2	0.2	99.3	5.6
185	102.5	1.025		29.5	29.3	0.1	92.8	0.928		29.6	29.5	0.1	102.5	1.025		29.3	29.2	0.1	99.3	5.6
186	102.5	1.025		29.6	29.3	0.2	92.8	0.928		29.6	29.6	0.0	102.5	1.025		29.3	29.6	-0.2	99.3	5.6
187	102.5	1.025		29.3	29.3	0.0	92.8	0.928		29.4	29.7	-0.4	102.5	1.025		29.5	29.9	-0.4	99.3	5.6
188	102.5	1.025		29.5	29.5	0.0	92.8	0.928		29.5	29.6	-0.1	102.5	1.025		29.5	30.0	-0.5	99.3	5.6
189	102.5	1.025		29.3	29.6	-0.2	87.9	0.879		29.6	29.9	-0.2	102.5	1.025		29.4	29.7	-0.4	97.7	8.5
190	97.7	0.977		29.3	29.7	-0.4	87.9	0.879		29.6	29.9	-0.2	102.5	1.025		29.5	29.3	0.1	96.0	7.5
191	97.7	0.977		29.3	29.6	-0.2	87.9	0.879		29.4	29.7	-0.4	97.7	0.977		29.5	29.5	0.0	94.4	5.6
192	97.7	0.977		29.5	29.7	-0.2	87.9	0.879		29.6	29.9	-0.2	97.7	0.977		29.6	29.5	0.1	94.4	5.6
193	97.7	0.977		29.5	29.7	-0.2	87.9	0.879		29.4	29.6	-0.2	97.7	0.977		29.5	29.6	-0.1	94.4	5.6
194	97.7	0.977		29.5	29.2	0.2	87.9	0.879		29.5	29.7	-0.2	97.7	0.977		29.6	29.7	-0.1	94.4	5.6
195	97.7	0.977	98.27	29.2	29.2	0.0	87.9	0.879	98.14	29.5	29.7	-0.2	97.7	0.977	99.49	29.4	30.0	-0.6	94.4	5.6
196	97.7	0.977		29.5	29.3	0.1	87.9	0.879		29.4	29.6	-0.2	102.5	1.025		29.2	29.7	-0.5	96.0	7.5
197	97.7	0.977		29.3	29.2	0.1	87.9	0.879		29.6	29.7	-0.1	102.5	1.025		29.5	29.5	0.0	96.0	7.5
198	97.7	0.977		29.2	29.2	0.0	83.0	0.830		29.4	29.5	-0.1	97.7	0.977		29.6	29.5	0.1	92.8	8.5
199	97.7	0.977		29.3	29.4	-0.1	83.0	0.830		29.4	29.5	-0.1	97.7	0.977		29.5	29.3	0.2	92.8	8.5
200	97.7	0.977		29.3	29.5	-0.2	83.0	0.830		29.4	29.3	0.1	97.7	0.977		29.6	29.4	0.2	92.8	8.5
201	92.8	0.928		29.3	29.5	-0.2	83.0	0.830		29.3	29.3	0.0	97.7	0.977		29.5	29.7	-0.2	91.1	7.5
202	92.8	0.928		29.3	29.7	-0.4	83.0	0.830		29.5	29.4	0.1	97.7	0.977		29.3	29.7	-0.4	91.1	7.5
203	92.8	0.928		29.5	29.5	0.0	83.0	0.830		29.5	29.3	0.2	92.8	0.928		29.3	29.7	-0.4	89.5	5.6
204	92.8	0.928		29.5	29.3	0.1	83.0	0.830		29.5	29.4	0.1	92.8	0.928		29.3	29.6	-0.2	89.5	5.6
205	92.8	0.928		29.3	29.2	0.1	83.0	0.830		29.5	29.4	0.1	92.8	0.928		29.2	29.2	0.0	89.5	5.6
206	92.8	0.928		29.3	29.0	0.2	83.0	0.830		29.6	29.4	0.2	92.8	0.928		29.4	29.4	0.0	89.5	5.6
207	92.8	0.928		29.3	29.2	0.1	83.0	0.830		29.4	29.4	0.0	92.8	0.928		29.3	29.1	0.2	89.5	5.6

Table B.2 continued...

208	92.8	0.928		29.3	29.0	0.2	83.0	0.830		29.3	29.3	0.0	92.8	0.928		29.7	29.6	0.1	89.5	5.6
209	92.8	0.928		29.4	29.0	0.4	78.1	0.781		29.4	29.4	0.0	92.8	0.928		29.5	29.9	-0.4	87.9	8.5
210	92.8	0.928	98.27	29.4	29.3	0.1	83.0	0.830	98.14	29.5	29.5	0.0	92.8	0.928	99.43	29.5	30.0	-0.5	89.5	5.6
211	87.9	0.879		29.5	29.6	-0.1	78.1	0.781		29.6	29.6	0.0	92.8	0.928		29.3	29.7	-0.4	86.3	7.5
212	87.9	0.879		29.3	29.7	-0.4	78.1	0.781		29.5	29.5	0.0	92.8	0.928		29.3	29.3	0.0	86.3	7.5
213	87.9	0.879		29.5	29.8	-0.4	78.1	0.781		29.4	29.6	-0.2	87.9	0.879		29.4	29.5	-0.1	84.6	5.6
214	87.9	0.879		29.5	29.7	-0.2	78.1	0.781		29.5	29.7	-0.2	87.9	0.879		29.6	29.4	0.2	84.6	5.6
215	87.9	0.879		29.5	29.8	-0.4	78.1	0.781		29.5	29.7	-0.2	87.9	0.879		29.5	29.4	0.1	84.6	5.6
216	87.9	0.879		29.3	29.2	0.1	78.1	0.781		29.5	29.9	-0.4	87.9	0.879		29.5	29.4	0.1	84.6	5.6
217	87.9	0.879		29.2	29.0	0.1	78.1	0.781		29.5	29.6	-0.1	87.9	0.879		29.6	29.7	-0.1	84.6	5.6
218	87.9	0.879		29.3	29.2	0.1	73.2	0.732		29.6	29.6	0.0	87.9	0.879		29.6	30.0	-0.4	83.0	8.5
219	83.0	0.830		29.2	29.2	0.0	73.2	0.732		29.5	29.6	-0.1	87.9	0.879		29.3	29.7	-0.4	81.4	7.5
220	83.0	0.830		29.3	29.5	-0.1	73.2	0.732		29.6	29.5	0.1	87.9	0.879		29.2	29.6	-0.4	81.4	7.5
221	83.0	0.830		29.5	29.7	-0.2	73.2	0.732		29.6	29.5	0.1	87.9	0.879		29.6	29.5	0.1	81.4	7.5
222	83.0	0.830		29.3	29.6	-0.4	73.2	0.732		29.4	29.4	0.0	87.9	0.879		29.6	29.4	0.2	81.4	7.5
223	83.0	0.830		29.6	29.7	-0.1	73.2	0.732		29.5	29.3	0.2	87.9	0.879		29.4	29.3	0.1	81.4	7.5
224	83.0	0.830		29.5	29.6	-0.1	73.2	0.732		29.5	29.4	0.1	87.9	0.879		29.5	29.3	0.2	81.4	7.5
225	83.0	0.830	98.27	29.5	29.6	-0.1	73.2	0.732	98.10	29.6	29.4	0.2	83.0	0.830	99.43	29.5	29.5	0.0	79.8	5.6
226	83.0	0.830		29.5	29.3	0.1	73.2	0.732		29.7	29.4	0.2	83.0	0.830		29.5	29.7	-0.2	79.8	5.6
227	83.0	0.830		29.3	29.2	0.1	73.2	0.732		29.5	29.4	0.1	83.0	0.830		29.2	29.7	-0.5	79.8	5.6
228	83.0	0.830		29.3	29.3	0.0	73.2	0.732		29.5	29.5	0.0	83.0	0.830		29.5	29.6	-0.1	79.8	5.6
229	83.0	0.830		29.3	29.3	0.0	73.2	0.732		29.4	29.7	-0.4	83.0	0.830		29.2	29.2	0.0	79.8	5.6
230	78.1	0.781		29.3	29.2	0.1	73.2	0.732		29.4	29.7	-0.4	83.0	0.830		29.5	29.4	0.1	78.1	4.9
231	78.1	0.781		29.4	29.2	0.2	73.2	0.732		29.5	29.7	-0.2	83.0	0.830		29.6	29.5	0.1	78.1	4.9
232	78.1	0.781		29.3	29.2	0.1	73.2	0.732		29.5	29.5	0.0	83.0	0.830		29.5	29.5	0.0	78.1	4.9
233	78.1	0.781		29.2	29.4	-0.2	73.2	0.732		29.5	29.4	0.1	83.0	0.830		29.6	29.6	0.0	78.1	4.9
234	78.1	0.781		29.4	29.6	-0.2	68.4	0.684		29.5	29.4	0.1	83.0	0.830		29.5	29.7	-0.2	76.5	7.5
235	78.1	0.781		29.3	29.6	-0.4	68.4	0.684		29.4	29.4	0.0	83.0	0.830		29.6	30.0	-0.4	76.5	7.5
236	78.1	0.781		29.3	29.7	-0.4	68.4	0.684		29.6	29.5	0.1	83.0	0.830		29.5	29.7	-0.2	76.5	7.5
237	78.1	0.781		29.5	29.6	-0.1	68.4	0.684		29.4	29.3	0.1	83.0	0.830		29.2	29.3	-0.1	76.5	7.5
238	78.1	0.781		29.3	29.5	-0.1	68.4	0.684		29.5	29.3	0.2	83.0	0.830		29.5	29.2	0.2	76.5	7.5
239	78.1	0.781		29.3	29.2	0.1	68.4	0.684		29.4	29.4	0.0	78.1	0.781		29.4	29.4	0.0	74.9	5.6
240	78.1	0.781	98.24	29.4	29.2	0.2	68.4	0.684	98.10	29.4	29.3	0.1	78.1	0.781	99.39	29.6	29.5	0.1	74.9	5.6
241	73.2	0.732		29.3	29.0	0.2	68.4	0.684		29.4	29.4	0.0	78.1	0.781		29.5	29.7	-0.2	73.2	4.9
242	73.2	0.732		29.3	29.6	-0.2	68.4	0.684		29.6	29.5	0.1	78.1	0.781		29.2	29.8	-0.6	73.2	4.9
243	73.2	0.732		29.4	29.5	-0.1	68.4	0.684		29.6	29.6	0.0	78.1	0.781		29.3	29.8	-0.5	73.2	4.9
244	73.2	0.732		29.2	29.5	-0.4	68.4	0.684		29.6	29.7	-0.1	78.1	0.781		29.5	29.5	0.0	73.2	4.9
245	73.2	0.732		29.0	29.5	-0.5	68.4	0.684		29.4	29.7	-0.4	78.1	0.781		29.3	29.3	0.0	73.2	4.9
246	73.2	0.732		29.2	29.8	-0.6	68.4	0.684		29.6	29.9	-0.2	78.1	0.781		29.2	29.2	0.0	73.2	4.9
247	73.2	0.732		29.3	29.8	-0.5	63.5	0.635		29.4	29.7	-0.4	78.1	0.781		29.6	29.3	0.4	71.6	7.5
248	73.2	0.732		29.5	29.7	-0.2	63.5	0.635		29.4	29.7	-0.4	78.1	0.781		29.5	29.3	0.1	71.6	7.5
249	73.2	0.732		29.2	29.3	-0.1	63.5	0.635		29.6	29.7	-0.1	78.1	0.781		29.6	29.5	0.1	71.6	7.5
250	73.2	0.732		29.3	29.2	0.1	63.5	0.635		29.3	29.6	-0.4	73.2	0.732		29.6	29.7	-0.1	70.0	5.6

Appendix C.

Experimental Data on CO_2 Concentration

Decay after 24 h.

Table C.0-1 Measured carbon dioxide concentrations at six locations in the bin for sample 0 (no seam - control) using bin filled with wheat (11.8% m.c.) and empty bin.

Time (h)	Replicate	CO2 Sampling Locations 1	2	3	4	5	6	Mean	SD
				Wheat filled bin					
				Purging time - 15 min					
0 h	1	21.0	23.8	27.1	30.8	17.2	16.9	**22.8**	5.0
	2	16.7	20.0	27.3	40.6	13.9	14.7	**22.2**	9.4
	3	22.6	22.4	25.7	31.0	25.0	21.0	**24.6**	3.3
	4	14.1	21.3	22.9	22.7	23.4	24.4	**21.5**	3.4
	Mean	**18.6**	**21.9**	**25.8**	**31.3**	**19.9**	**19.3**	**22.8**	**5.3**
1 h	1	21.8	24.7	22.8	29.8	22.4	21.2	**23.8**	2.9
	2	23.8	17.3	25.4	23.2	22.9	21.6	**22.4**	2.5
	3	23.8	26.0	23.9	31.9	21.3	25.3	**25.4**	3.3
	4	21.1	23.9	23.0	26.8	23.1	23.7	**23.6**	1.7
	Mean	**22.6**	**23.0**	**23.8**	**27.9**	**22.4**	**23.0**	**23.8**	**2.6**
3 h	1	21.5	19.1	24.1	27.3	22.4	23.2	**22.9**	2.5
	2	22.6	23.7	21.4	25.1	21.3	23.5	**22.9**	1.3
	3	22.0	26.4	25.1	27.3	24.2	23.9	**24.8**	1.7
	4	24.3	17.8	23.7	22.3	25.2	26.4	**23.3**	2.8
	Mean	**22.6**	**21.8**	**23.6**	**25.5**	**23.3**	**24.3**	**23.5**	**2.1**
6 h	1	23.3	19.1	21.9	27.2	25.0	23.2	**23.3**	2.5
	2	24.0	23.3	23.2	24.7	19.5	22.3	**22.8**	1.7
	3	25.8	24.8	24.4	25.1	22.3	24.8	**24.5**	1.1
	4	20.7	19.5	19.9	27.1	23.4	22.6	**22.2**	2.6
	Mean	**23.5**	**21.7**	**22.4**	**26.0**	**22.6**	**23.2**	**23.2**	**2.0**
24 h	1	24.4	20.5	24.3	22.3	23.2	19.1	**22.3**	1.9
	2	22.9	20.0	24.1	24.2	22.8	20.3	**22.4**	1.7
	3	23.3	25.2	26.8	29.2	18.2	22.1	**24.5**	3.7
	4	24.0	23.6	21.7	18.6	19.2	21.1	**21.4**	2.0
	Mean	**23.7**	**22.3**	**24.2**	**23.6**	**20.9**	**20.7**	**22.6**	**2.3**
				Purging time - 30 min					
0 h	1	36.4	30.4	36.7	30.4	33.1	29.7	**32.8**	2.9
	2	38.0	50.6	49.4	46.7	32.6	34.9	**42.0**	7.1
	3	31.7	31.4	26.7	25.8	33.3	30.6	**29.9**	2.7
	4	45.4	39.2	40.3	52.8	34.9	26.2	**39.8**	8.3
	Mean	**37.9**	**37.9**	**38.3**	**38.9**	**33.5**	**30.4**	**36.1**	**5.2**
1 h	1	34.4	32.8	36.5	33.2	33.4	32.3	**33.8**	1.4
	2	35.6	49.3	48.7	46.5	43.7	42.2	**44.3**	4.6
	3	23.0	32.2	30.7	32.6	29.6	36.1	**30.7**	4.0
	4	40.3	49.0	45.5	31.4	37.2	39.7	**40.5**	5.7
	Mean	**33.3**	**40.8**	**40.4**	**35.9**	**36.0**	**37.6**	**37.3**	**3.9**
3 h	1	35.2	35.9	27.6	29.9	31.0	33.7	**32.2**	3.0
	2	43.5	44.4	43.0	43.9	43.7	41.5	**43.3**	0.9
	3	33.7	28.2	29.5	28.1	29.0	31.2	**30.0**	2.0
	4	43.1	37.3	39.7	37.4	41.5	39.5	**39.8**	2.1
	Mean	**38.9**	**36.5**	**35.0**	**34.8**	**36.3**	**36.5**	**36.3**	**2.0**
6 h	1	34.7	32.4	33.2	30.1	31.8	29.4	**31.9**	1.8
	2	42.3	43.9	44.4	39.5	37.7	43.5	**41.9**	2.5
	3	24.9	33.8	32.2	28.3	27.3	31.8	**29.7**	3.1
	4	37.1	38.1	39.6	41.2	40.3	41.7	**39.7**	1.6
	Mean	**34.8**	**37.1**	**37.4**	**34.8**	**34.3**	**36.6**	**35.8**	**2.2**

Table C.0-1 continued...

	3	24.9	33.8	32.2	28.3	27.3	31.8	**29.7**	3.1
	4	37.1	38.1	39.6	41.2	40.3	41.7	**39.7**	1.6
	Mean	**34.8**	**37.1**	**37.4**	**34.8**	**34.3**	**36.6**	**35.8**	**2.2**
24 h	**1**	28.6	32.9	30.7	34.6	30.5	33.8	**31.9**	2.1
	2	40.0	42.7	41.8	43.1	37.5	40.5	**40.9**	1.9
	3	28.7	27.3	28.5	29.6	26.5	34.5	**29.2**	2.6
	4	37.4	39.2	41.3	43.9	37.2	39.1	**39.7**	2.3
	Mean	**33.7**	**35.5**	**35.6**	**37.8**	**32.9**	**37.0**	**35.4**	**2.2**
				Purging time - 60 min					
0 h	**1**	42.4	53.2	54.1	52.6	49.9	60.3	**52.1**	5.3
	2	56.2	50.3	63.4	68.6	36.0	45.3	**53.3**	10.9
	3	59.4	53.2	49.8	58.0	58.3	57.1	**56.0**	3.4
	4	67.3	71.0	65.7	66.9	56.3	71.0	**66.4**	4.9
	Mean	**56.3**	**56.9**	**58.3**	**61.5**	**50.1**	**58.4**	**56.9**	**6.1**
1 h	**1**	64.3	46.2	42.9	43.5	54.7	59.8	**51.9**	8.2
	2	54.3	53.6	56.6	51.1	51.2	50.9	**53.0**	2.1
	3	52.4	46.3	58.8	57.4	62.6	60.2	**56.3**	5.4
	4	70.2	66.8	67.3	58.3	67.3	69.5	**66.6**	3.9
	Mean	**60.3**	**53.2**	**56.4**	**52.6**	**59.0**	**60.1**	**56.9**	**4.9**
3 h	**1**	48.4	55.8	50.4	58.0	46.7	47.8	**51.2**	4.2
	2	52.3	54.3	56.5	49.3	52.3	47.5	**52.0**	3.0
	3	59.1	57.0	52.8	58.4	49.2	60.9	**56.2**	4.0
	4	66.2	67.7	67.9	73.8	61.5	60.7	**66.3**	4.4
	Mean	**56.5**	**58.7**	**56.9**	**59.9**	**52.4**	**54.2**	**56.4**	**3.9**
6 h	**1**	49.5	48.7	58.3	59.1	51.6	50.9	**53.0**	4.1
	2	49.1	51.1	55.6	54.2	49.2	53.1	**52.1**	2.5
	3	54.1	50.2	51.4	59.1	56.1	61.7	**55.4**	4.1
	4	72.5	69.1	61.2	69.1	56.9	65.3	**65.7**	5.3
	Mean	**56.3**	**54.8**	**56.6**	**60.4**	**53.5**	**57.8**	**56.5**	**4.0**
24 h	**1**	53.3	42.2	52.7	51.8	53.6	48.2	**50.3**	4.0
	2	52.6	53.5	50.7	53.3	51.8	46.8	**51.5**	2.3
	3	50.6	57.6	55.2	61.5	53.4	51.3	**54.9**	3.8
	4	59.4	64.7	69.5	72.8	61.4	59.9	**64.6**	5.0
	Mean	**54.0**	**54.5**	**57.0**	**59.9**	**55.1**	**51.6**	**55.3**	**3.8**
				Bins empty					
				Purging time - 15 min					
0 h	**1**	15.5	18.3	21.6	25.3	11.7	11.4	**17.3**	5.0
	2	11.2	14.5	21.8	35.1	17.4	13.0	**18.8**	8.0
	3	17.1	16.9	20.2	25.5	19.5	15.5	**19.1**	3.3
	4	18.6	15.8	17.4	17.2	17.9	18.9	**17.6**	1.0
	Mean	**15.6**	**16.4**	**20.2**	**25.8**	**16.6**	**14.7**	**18.2**	**4.3**
1 h	**1**	17.8	20.7	18.8	25.8	18.4	17.2	**19.8**	2.9
	2	16.5	13.3	21.4	19.2	18.9	17.6	**17.8**	2.5
	3	18.8	22.0	19.9	27.9	17.3	17.3	**20.5**	3.7
	4	17.1	16.7	18.5	17.6	19.1	19.7	**18.1**	1.1
	Mean	**17.6**	**18.2**	**19.7**	**22.6**	**18.4**	**18.0**	**19.1**	**2.5**
3 h	**1**	17.5	15.1	20.1	23.3	18.4	19.2	**18.9**	2.5
	2	18.6	19.7	17.4	21.1	17.3	19.5	**18.9**	1.3
	3	21.0	16.0	18.0	23.3	20.2	19.9	**19.7**	2.3

Table C.0-1 continued...

	4	20.3	13.8	19.7	18.3	18.2	19.4	**18.3**	2.1
	Mean	**19.3**	**16.2**	**18.8**	**21.5**	**18.5**	**19.5**	**19.0**	**2.1**
6 h	**1**	19.3	15.1	17.9	23.2	21.0	19.2	**19.3**	2.5
	2	20.0	19.3	19.2	20.7	15.5	18.3	**18.8**	1.7
	3	19.8	18.8	18.4	19.1	19.8	18.8	**19.1**	0.5
	4	16.7	15.5	20.9	23.1	17.6	16.9	**18.5**	2.7
	Mean	**19.0**	**17.2**	**19.1**	**21.5**	**18.5**	**18.3**	**18.9**	**1.8**
24 h	**1**	20.4	16.5	20.3	18.3	19.2	15.1	**18.3**	1.9
	2	18.9	16.0	20.1	23.2	18.8	16.3	**18.9**	2.4
	3	19.3	21.2	17.4	24.0	14.2	18.1	**19.0**	3.1
	4	15.0	16.7	17.7	21.6	15.2	17.1	**17.2**	2.2
	Mean	**18.4**	**17.6**	**18.9**	**21.8**	**16.8**	**16.7**	**18.4**	**2.4**
				Purging time - 30 min					
0 h	**1**	30.9	24.9	31.2	24.9	27.6	24.2	**27.3**	2.9
	2	32.5	45.1	43.9	41.2	27.1	29.4	**36.5**	7.1
	3	26.2	25.9	21.2	20.3	27.8	31.1	**25.4**	3.7
	4	39.9	33.7	34.8	47.3	29.4	20.7	**34.3**	8.3
	Mean	**32.4**	**32.4**	**32.8**	**33.4**	**28.0**	**26.4**	**30.9**	**5.5**
1 h	**1**	30.3	28.7	32.4	29.3	29.1	28.1	**29.7**	1.4
	2	31.4	45.2	44.8	42.6	39.3	38.3	**40.3**	4.7
	3	18.9	28.1	26.8	28.7	25.5	32.0	**26.7**	4.0
	4	31.2	47.0	40.5	27.3	26.1	35.6	**34.6**	7.4
	Mean	**28.0**	**37.3**	**36.1**	**32.0**	**30.0**	**33.5**	**32.8**	**4.4**
3 h	**1**	31.2	31.9	23.6	25.9	27.0	29.7	**28.2**	3.0
	2	39.5	40.4	39.0	39.9	39.7	37.5	**39.3**	0.9
	3	29.8	24.3	25.6	24.0	24.9	27.4	**26.0**	1.2
	4	39.0	33.2	35.8	33.6	37.7	33.1	**35.4**	2.3
	Mean	**34.9**	**32.5**	**31.0**	**30.9**	**32.3**	**31.9**	**32.2**	**1.9**
6 h	**1**	30.8	28.5	29.1	26.0	27.9	25.3	**27.9**	1.9
	2	38.2	39.9	40.3	35.4	33.6	39.4	**37.8**	2.5
	3	20.8	29.9	28.1	24.2	23.2	27.9	**25.7**	3.2
	4	33.0	34.3	35.1	36.1	36.8	37.9	**35.5**	1.6
	Mean	**30.7**	**33.2**	**33.2**	**30.4**	**30.4**	**32.6**	**31.7**	**2.3**
24 h	**1**	24.6	28.9	26.8	30.8	26.1	29.9	**27.9**	2.2
	2	36.0	38.7	37.8	39.1	33.5	36.5	**36.9**	1.9
	3	24.7	23.3	24.5	25.7	22.7	30.4	**25.2**	2.5
	4	33.3	34.2	36.4	39.7	29.1	30.1	**33.8**	3.6
	Mean	**29.7**	**31.3**	**31.4**	**33.8**	**27.9**	**31.7**	**31.0**	**2.5**
				Purging time - 60min					
0 h	**1**	36.9	47.7	48.6	47.1	44.4	54.8	**46.6**	5.4
	2	50.5	44.6	58.0	63.1	30.5	39.8	**47.8**	10.9
	3	53.9	47.7	44.3	52.5	54.7	56.7	**51.6**	4.3
	4	61.8	65.5	60.2	61.4	50.8	65.5	**60.9**	4.9
	Mean	**50.8**	**51.4**	**52.8**	**56.0**	**45.1**	**54.2**	**51.7**	**6.4**
1 h	**1**	50.2	42.5	35.2	39.4	50.9	55.8	**45.7**	7.5
	2	50.3	49.6	52.6	47.1	47.2	46.9	**49.0**	2.1
	3	48.5	42.4	54.9	53.5	58.7	56.0	**52.3**	5.4
	4	66.4	62.6	63.2	54.3	63.4	65.6	**62.6**	3.9
	Mean	**53.9**	**49.3**	**51.5**	**48.6**	**55.0**	**56.1**	**52.4**	**4.7**

Table C.0-1 continued...

3 h	**1**	44.4	51.8	46.4	54.0	62.7	63.8	**53.8**	7.4
	2	48.3	50.3	52.6	45.1	48.2	43.6	**48.0**	3.0
	3	55.0	53.1	48.8	54.6	45.1	56.9	**52.3**	4.1
	4	62.3	63.8	63.8	69.7	57.4	56.8	**62.3**	4.3
	Mean	**52.5**	**54.7**	**52.9**	**55.9**	**53.4**	**55.3**	**54.1**	**4.7**
6 h	**1**	45.6	44.9	54.2	55.1	47.8	46.8	**49.0**	4.1
	2	45.1	47.0	51.5	50.2	45.1	49.0	**48.0**	2.4
	3	50.3	46.0	47.8	55.2	52.0	57.9	**51.5**	4.1
	4	68.6	65.0	57.0	64.3	52.8	61.6	**61.6**	5.3
	Mean	**52.4**	**50.7**	**52.6**	**56.2**	**49.4**	**53.8**	**52.5**	**4.0**
24 h	**1**	49.4	38.1	48.6	47.9	49.5	44.5	**46.3**	4.0
	2	48.7	49.6	46.9	49.2	47.9	42.7	**47.5**	2.3
	3	46.4	53.6	51.1	57.4	49.2	47.5	**50.9**	3.7
	4	55.6	57.8	65.7	68.7	57.4	55.9	**54.8**	5.1
	Mean	**50.0**	**49.8**	**53.1**	**55.8**	**51.0**	**47.6**	**49.9**	**3.8**

Table C.0-2 Measured carbon dioxide concentration (%) for sample 0 (no seam - control). Means of the six sampling ports.

	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	**15**	**0**	22.8	22.2	24.6	21.5	**22.8**	1.2
		1	23.8	22.4	25.4	23.6	**23.8**	1.1
		3	22.9	22.9	24.8	23.3	**23.5**	0.8
		6	23.3	22.8	24.5	22.2	**23.2**	0.9
		24	22.3	22.4	24.5	21.4	**22.6**	1.2
	30	**0**	32.8	42.0	29.9	39.8	**36.1**	5.0
		1	33.8	44.3	30.7	40.5	**37.3**	5.4
		3	32.2	43.3	30.0	39.8	**36.3**	5.4
		6	31.9	41.9	29.7	39.7	**35.8**	5.1
		24	31.9	40.9	29.2	39.7	**35.4**	5.0
	60	**0**	52.1	53.3	56.0	66.4	**56.9**	5.6
		1	51.9	53.0	56.3	66.6	**56.9**	5.8
		3	51.2	52.0	56.2	66.3	**56.4**	6.0
		6	53.0	52.1	55.4	65.7	**56.5**	5.4
		24	50.3	51.5	54.9	64.6	**55.3**	5.6
Empty	**15**	**0**	17.3	18.8	19.1	17.6	**18.2**	0.8
		1	19.8	17.8	20.5	18.1	**19.1**	1.1
		3	18.9	18.9	19.7	18.3	**19.0**	0.5
		6	19.3	18.8	19.1	18.5	**18.9**	0.3
		24	18.3	18.9	19.0	17.2	**18.4**	0.7
	30	**0**	27.3	36.5	25.4	34.3	**30.9**	4.6
		1	29.7	40.3	26.7	34.6	**32.8**	5.2
		3	28.2	39.3	26.0	35.4	**32.2**	5.4
		6	27.9	37.8	25.7	35.5	**31.7**	5.1
		24	27.9	36.9	25.2	33.8	**31.0**	4.6
	60	**0**	46.6	47.8	51.6	60.9	**51.7**	5.6
		1	44.8	49.0	52.3	62.6	**52.2**	6.6
		3	53.8	48.0	52.3	62.3	**54.1**	5.2
		6	49.0	48.0	51.5	61.6	**52.5**	5.4
		24	46.3	47.5	50.9	60.2	**51.2**	5.4

Table C.0-3 The retention coefficient (%) for sample 0 (no seam - control).
Amount of carbon dioxide after 24 h as a percentage of the initial concentration.

	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	**15**	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	104.3	100.8	103.0	109.9	**104.5**	3.4
		3	100.6	103.3	100.8	108.5	**103.3**	3.2
		6	102.1	102.9	99.7	103.4	**102.0**	1.4
		24	97.8	100.8	99.7	99.5	**99.5**	1.1
	30	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	103.0	105.5	102.6	101.8	**103.2**	1.4
		3	98.3	103.1	100.1	99.9	**100.3**	1.7
		6	97.4	99.6	99.3	99.7	**99.0**	0.9
		24	97.2	97.4	97.5	99.7	**97.9**	1.0
	60	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	99.6	99.3	100.6	100.3	**100.0**	0.5
		3	98.3	97.6	100.5	99.9	**99.1**	1.2
		6	101.8	97.7	99.0	99.0	**99.4**	1.5
		24	96.6	96.5	98.2	97.4	**97.2**	0.7
Empty	**15**	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	114.4	94.6	107.4	102.8	**104.8**	7.2
		3	109.4	100.5	103.2	103.7	**104.2**	3.2
		6	111.5	100.0	100.0	104.6	**104.0**	4.7
		24	105.8	100.3	99.6	97.7	**100.8**	3.0
	30	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	108.7	110.2	104.9	100.9	**106.2**	3.6
		3	103.4	107.7	102.3	103.2	**104.1**	2.1
		6	102.4	103.5	101.0	103.6	**102.6**	1.0
		24	102.1	101.1	99.2	98.5	**100.2**	1.4
	60	**0**	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	96.1	102.5	101.4	102.8	**100.7**	2.7
		3	115.6	100.6	101.2	102.4	**104.9**	6.2
		6	105.3	100.5	99.8	101.1	**101.7**	2.1
		24	99.5	99.5	98.5	98.9	**99.1**	0.4

Table C.1-1 Measured carbon dioxide concentrations at six locations in the bin for sample 1 (2 row caulking) using bin filled with wheat (11.8% m.c.) and empty bin.

Time (h)	Replicate	CO2 Sampling Locations 1	2	3	4	5	6	Mean	SD
				Wheat filled bin					
				Purging time - 15 min					
0 h	1	14.6	17.0	20.7	30.2	13.8	15.4	18.6	5.7
	2	17.5	14.6	24.7	21.2	17.9	19.9	19.3	3.2
	3	27.5	36.2	37.6	36.6	20.8	28.4	31.2	6.1
	4	18.6	25.8	27.4	27.2	17.9	18.9	22.6	4.2
	Mean	19.5	23.4	27.6	28.8	17.6	20.6	22.9	4.8
1 h	1	13.9	20.0	25.9	26.7	14.0	12.5	18.9	5.8
	2	20.2	20.6	19.8	23.5	17.5	18.3	20.0	1.9
	3	26.4	35.8	30.5	30.0	22.8	29.9	29.3	4.0
	4	15.6	15.6	28.4	38.0	12.1	16.5	21.0	9.1
	Mean	19.0	23.0	26.1	29.5	16.6	19.3	22.3	5.2
3 h	1	11.2	19.8	12.8	21.9	25.3	19.0	18.3	4.9
	2	18.6	19.7	17.4	21.1	17.3	19.5	18.9	1.3
	3	36.2	36.2	36.2	37.6	31.6	26.8	34.1	3.8
	4	24.2	20.1	20.3	23.4	22.9	21.3	22.0	1.6
	Mean	22.6	24.0	21.7	26.0	24.3	21.7	23.4	2.9
6 h	1	16.3	16.7	19.6	19.2	18.1	15.7	17.6	1.5
	2	20.0	19.3	19.2	20.7	15.5	18.3	18.8	1.7
	3	28.5	36.0	27.5	28.3	28.9	25.0	29.0	3.4
	4	21.2	21.5	26.1	27.6	24.3	25.8	24.4	2.4
	Mean	21.5	23.4	23.1	24.0	21.7	21.2	22.5	2.2
24 h	1	17.0	17.5	16.5	18.8	19.4	19.5	18.1	1.2
	2	18.9	16.0	20.1	20.2	18.8	16.3	18.4	1.7
	3	31.7	33.3	28.2	30.6	27.9	30.9	30.3	2.1
	4	20.9	22.5	20.6	23.7	22.2	20.5	21.7	1.2
	Mean	22.1	22.3	21.3	23.3	22.1	21.8	22.1	1.5
				Purging time - 30 min					
0 h	1	28.3	45.5	43.9	45.2	33.5	33.1	38.2	6.9
	2	52.5	75.1	83.9	81.2	57.1	69.4	69.8	11.7
	3	56.2	55.9	51.2	50.3	57.8	51.1	53.8	2.9
	4	59.9	53.7	54.8	67.3	39.4	40.7	52.6	9.9
	Mean	49.2	57.5	58.4	61.0	46.9	48.6	53.6	7.8
1 h	1	37.3	38.8	36.2	48.8	40.3	38.9	40.1	4.1
	2	61.4	75.2	74.8	72.6	59.3	58.3	66.9	7.4
	3	48.9	58.1	56.8	48.7	55.5	52.0	53.3	3.7
	4	51.2	67.0	50.3	47.3	46.1	55.6	52.9	7.0
	Mean	49.7	59.8	54.5	54.4	50.3	51.2	53.3	5.5
3 h	1	40.4	46.0	46.9	41.9	41.3	43.5	43.3	2.4
	2	69.5	70.4	71.0	69.9	69.7	61.5	68.7	3.2
	3	55.6	54.3	53.6	54.0	54.9	54.3	54.4	0.7
	4	59.0	53.2	57.8	63.6	57.7	61.1	58.7	3.2
	Mean	56.1	56.0	57.3	57.3	55.9	55.1	56.3	2.4
6 h	1	38.1	33.7	40.5	37.3	34.8	41.8	37.7	2.9
	2	68.2	69.9	70.3	65.4	63.6	69.4	67.8	2.5
	3	50.8	59.9	58.1	54.2	53.2	47.9	54.0	4.1
	4	63.0	64.3	50.1	48.1	56.8	57.9	56.7	6.0
	Mean	55.1	56.9	54.7	51.3	52.1	54.2	54.1	3.9
24 h	1	34.6	37.4	38.1	41.5	35.5	40.0	37.9	2.4
	2	66.0	68.7	67.8	61.1	60.5	56.5	63.4	4.4
	3	44.7	53.3	54.5	55.7	45.7	50.4	50.7	4.2
	4	48.3	46.3	45.5	45.7	59.5	52.1	49.6	5.0
	Mean	48.4	51.4	51.5	51.0	50.3	49.7	50.4	4.0
				Purging time - 60 min					
0 h	1	36.9	47.7	48.6	47.1	64.4	54.8	49.9	8.4
	2	72.8	86.7	79.2	77.7	76.4	82.1	79.2	4.4

Table C.1-1 continued...

				Purging time - 60 min					
0 h	**1**	36.9	47.7	48.6	47.1	64.4	54.8	49.9	8.4
	2	72.8	86.7	79.2	77.7	76.4	82.1	79.2	4.4
	3	63.9	57.7	54.3	62.5	64.7	66.7	61.6	4.3
	4	71.8	75.5	70.2	71.4	60.8	75.5	70.9	4.9
	Mean	61.4	66.9	63.1	64.7	66.6	69.8	65.4	5.5
1 h	**1**	40.2	41.6	35.2	39.4	60.9	35.8	42.2	8.7
	2	57.3	65.4	74.5	71.1	76.6	82.3	71.2	8.1
	3	58.5	52.4	64.9	63.5	68.7	66.0	62.3	5.4
	4	66.4	62.6	73.2	64.3	63.4	65.6	65.9	3.5
	Mean	55.6	55.5	61.9	59.6	67.4	62.4	60.4	6.4
3 h	**1**	44.4	51.8	46.4	54.0	62.7	63.8	53.8	7.4
	2	76.2	86.2	88.8	87.1	77.6	77.7	82.3	5.2
	3	65.0	63.1	58.8	64.6	55.1	66.9	62.3	4.1
	4	62.3	73.8	63.8	69.7	57.4	66.8	65.6	5.3
	Mean	62.0	68.7	64.4	68.9	63.2	68.8	66.0	5.5
6 h	**1**	45.6	44.9	54.2	55.1	47.8	46.8	49.0	4.1
	2	75.1	77.0	71.5	85.2	76.3	69.0	75.7	5.1
	3	60.3	56.0	57.8	65.2	62.0	57.9	59.9	3.1
	4	68.6	65.0	57.0	64.3	52.8	61.6	61.6	5.3
	Mean	62.4	60.7	60.1	67.4	59.7	58.8	61.5	4.4
24 h	**1**	49.4	38.1	48.6	47.9	49.5	44.5	46.3	4.0
	2	78.7	79.6	69.6	69.2	67.9	72.7	73.0	4.6
	3	56.4	63.6	61.1	57.1	64.2	57.0	59.9	3.2
	4	52.5	52.5	65.7	68.7	57.4	60.1	59.5	6.1
	Mean	59.2	58.5	61.3	60.7	59.8	58.6	59.7	4.5
				Bin empty					
				Purging time - 15 min					
0 h	**1**	6.1	6.9	7.2	7.6	7.2	7.4	7.1	0.5
	2	12.8	14.3	18.6	19.8	16.4	15.3	16.2	2.4
	3	6.5	6.5	8.8	9.5	7.6	7.4	7.7	1.1
	4	23.8	21.6	21.5	16.2	16.4	16.1	19.3	3.1
	Mean	12.3	12.3	14.0	13.3	11.9	11.5	12.6	1.8
1 h	**1**	7.7	7.6	8.2	7.4	7.2	7.8	7.6	0.3
	2	15.8	19.3	18.3	19.2	16.6	15.8	17.5	1.5
	3	10.4	7.1	8.0	8.6	10.1	9.8	9.0	1.2
	4	24.2	20.6	21.0	16.7	17.5	16.3	19.4	2.8
	Mean	14.5	13.7	13.9	13.0	12.9	12.4	13.4	1.5
3 h	**1**	6.3	8.9	8.1	9.5	6.1	6.1	7.5	1.4
	2	17.2	17.7	17.4	17.9	15.3	17.6	17.2	0.9
	3	6.4	8.1	9.9	10.1	9.2	8.0	8.6	1.3
	4	19.8	20.6	20.2	18.9	18.2	18.1	19.3	1.0
	Mean	12.4	13.8	13.9	14.1	12.2	12.4	13.1	1.1
6 h	**1**	6.9	7.5	7.9	8.6	6.8	6.5	7.4	0.7
	2	15.8	19.3	18.3	19.2	16.6	15.8	17.5	1.5
	3	9.4	9.7	6.5	8.0	9.2	8.5	8.6	1.1
	4	22.5	16.5	17.3	18.9	17.5	19.7	18.7	2.0
	Mean	13.6	13.3	12.5	13.7	12.5	12.6	13.0	1.3
24 h	**1**	7.5	6.6	7.9	8.0	6.1	6.3	7.1	0.8
	2	15.4	16.2	16.0	16.8	16.6	15.8	16.1	0.5
	3	7.6	8.4	8.8	8.4	7.5	8.1	8.1	0.4
	4	19.3	19.1	18.9	18.3	18.7	18.2	18.7	0.4
	Mean	12.5	12.6	12.9	12.9	12.2	12.1	12.5	0.5
				Purging time - 30 min					
0 h	**1**	31.5	43.3	43.5	40.1	34.3	36.8	38.3	4.5
	2	38.4	42.3	46.4	55.7	36.4	31.8	41.8	7.7
	3	25.6	25.2	33.2	26.2	29.8	29.6	28.3	2.8
	4	33.4	33.6	37.8	42.0	26.8	24.9	33.1	5.9
	Mean	32.2	36.1	40.2	41.0	31.8	30.8	35.4	5.2

Table C.1-1 continued...

1 h	**1**	38.9	39.5	39.2	40.0	41.3	45.0	40.6	2.1
	2	45.7	46.6	43.3	45.3	40.7	42.7	44.1	2.0
	3	30.6	34.7	31.1	32.0	29.7	32.1	31.7	1.6
	4	34.3	43.6	38.7	36.0	33.0	35.8	36.9	3.5
	Mean	37.4	41.1	38.1	38.3	36.1	38.9	38.3	2.3
3 h	**1**	32.2	34.7	40.7	40.4	38.7	37.3	37.3	3.1
	2	45.4	49.6	46.1	46.0	47.5	46.1	46.8	1.4
	3	25.2	28.6	28.2	28.2	29.8	29.6	28.3	0.7
	4	34.2	42.6	37.7	36.1	32.5	34.3	36.2	3.3
	Mean	34.3	38.9	38.2	37.7	37.1	36.8	37.2	2.1
6 h	**1**	29.2	38.4	41.4	32.1	40.1	40.8	37.0	4.6
	2	41.6	48.5	49.3	45.6	42.6	42.1	45.0	3.1
	3	23.4	30.3	30.6	30.4	24.7	23.8	27.2	3.3
	4	30.6	42.6	40.2	37.6	29.6	24.7	34.2	6.4
	Mean	31.2	39.9	40.4	36.5	34.3	32.8	35.8	4.3
24 h	**1**	32.7	32.7	39.1	41.6	32.3	31.6	35.0	3.9
	2	45.3	44.4	45.7	41.4	39.3	38.2	42.4	2.9
	3	20.6	32.0	31.1	31.3	21.7	22.1	26.4	5.0
	4	29.4	34.3	36.3	35.8	33.8	28.6	33.0	3.0
	Mean	32.0	35.8	38.0	37.5	31.7	30.1	34.2	3.7
				Purging time - 60min					
0 h	**1**	59.7	66.2	57.7	59.2	73.4	61.4	62.9	5.4
	2	71.6	71.2	78.4	73.8	67.6	76.0	73.1	3.5
	3	54.6	56.8	54.4	47.8	49.9	49.0	52.1	3.3
	4	58.3	57.7	57.7	55.7	52.3	56.0	56.3	2.0
	Mean	61.1	63.0	62.1	59.1	60.8	60.6	61.1	3.6
1 h	**1**	64.0	70.0	72.5	67.8	55.9	58.0	64.7	6.7
	2	74.2	79.3	78.4	74.2	70.1	75.0	75.2	3.0
	3	55.6	56.3	54.2	49.4	49.5	53.6	53.1	2.8
	4	63.4	65.6	65.2	63.8	62.1	62.6	63.8	1.3
	Mean	64.3	67.8	67.6	63.8	59.4	62.3	64.2	3.4
3 h	**1**	63.1	64.0	62.8	67.4	76.7	62.5	66.1	5.0
	2	77.7	72.1	76.3	75.4	73.3	77.7	75.4	2.1
	3	56.3	53.3	49.1	52.7	57.4	56.7	54.2	2.9
	4	67.8	61.6	65.1	64.8	66.6	65.9	65.3	1.9
	Mean	66.2	62.8	63.3	65.0	68.5	65.7	65.3	3.0
6 h	**1**	61.5	59.2	64.3	60.5	64.0	63.2	62.1	1.9
	2	75.9	75.3	74.3	73.1	74.1	73.5	74.4	1.0
	3	45.1	43.0	45.6	47.5	47.9	59.6	48.1	5.4
	4	61.2	61.7	64.8	57.6	57.7	62.3	60.9	2.5
	Mean	61.0	59.8	62.2	59.7	60.9	64.6	61.4	2.7
24 h	**1**	59.0	52.5	53.4	55.5	55.3	54.6	55.1	2.1
	2	71.7	74.0	63.4	69.6	67.1	66.2	68.7	3.5
	3	41.7	49.7	45.5	54.0	48.3	44.8	47.3	3.9
	4	58.1	53.4	54.7	57.1	49.9	55.7	54.8	2.7
	Mean	57.6	57.4	54.3	59.0	55.2	55.3	56.5	3.0

Table C. 1-2 Measured carbon dioxide concentrations at six locations for sample 1' (2 row caulking and seam covered with additional protective coating) for purging time 60 min and empty bin.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0 h	1	54.2	47.4	52.9	51.5	53.8	43.8	50.6	3.8
	2	61.7	70.38	63.01	59.59	64.8	66.33	64.3	3.5
	3	52.3	44.2	42.1	44.1	47.8	52.7	47.2	4.1
	4	58.1	51.8	57.1	43.6	57.6	53.3	53.6	5.0
	Mean	**56.6**	**53.4**	**53.8**	**49.7**	**56.0**	**54.0**	**53.9**	**4.1**
1 h	1	54.6	51.0	47.3	47.2	51.6	53.9	51.0	2.9
	2	65.6	69.1	64.7	63.1	68.6	65.6	66.1	2.1
	3	49.6	49.0	46.1	47.4	40.7	58.3	48.5	5.2
	4	51.8	44.4	43.8	47.1	59.1	59.9	51.0	6.5
	Mean	**55.4**	**53.4**	**50.5**	**51.2**	**55.0**	**59.4**	**54.1**	**4.2**
3 h	1	54.3	51.1	48.6	48.2	53.6	58.1	52.3	3.4
	2	62.0	70.1	63.0	61.5	65.8	66.3	64.8	3.0
	3	46.1	46.7	49.4	50.9	52.9	49.3	49.2	2.3
	4	41.6	60.5	62.5	68.1	46.4	43.2	53.7	10.3
	Mean	**51.0**	**57.1**	**55.9**	**57.2**	**54.7**	**54.2**	**55.0**	**4.8**
6 h	1	51.0	47.9	48.2	53.3	51.5	47.8	50.0	2.1
	2	62.9	61.6	63.0	63.3	64.4	64.8	63.3	1.1
	3	50.8	45.6	46.9	50.3	48.9	47.4	48.3	1.8
	4	41.0	60.5	50.0	59.1	43.3	47.4	50.2	7.4
	Mean	**51.4**	**53.9**	**52.0**	**56.5**	**52.0**	**51.9**	**53.0**	**3.1**
24 h	1	50.7	47.6	47.2	48.2	49.0	47.7	48.4	1.2
	2	55.6	65.1	64.7	63.1	58.6	55.6	60.4	4.0
	3	46.8	45.9	46.2	48.1	47.6	44.9	46.6	1.1
	4	56.8	53.6	46.5	37.1	47.0	59.2	50.0	7.4
	Mean	**52.5**	**53.0**	**51.2**	**49.1**	**50.5**	**51.8**	**51.4**	**3.4**

Table C.1-3 Measured carbon dioxide concentration (%) for sample 1 (2 row caulking). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	15	0	18.6	19.3	31.2	22.6	**22.9**	5.0
		1	18.9	20.0	29.3	21.0	**22.3**	4.1
		3	18.3	18.9	34.1	22.0	**23.4**	6.4
		6	17.6	18.8	29.0	24.4	**22.5**	4.6
		24	18.1	18.4	30.3	21.7	**22.1**	4.9
	30	0	38.2	69.8	53.8	52.6	**53.6**	11.2
		1	40.1	66.9	53.3	52.9	**53.3**	9.5
		3	43.3	68.7	54.4	58.7	**56.3**	9.1
		6	37.7	67.8	54.0	56.7	**54.1**	10.8
		24	37.9	63.4	50.7	49.6	**50.4**	9.1
	60	0	49.9	79.2	61.6	70.9	**65.4**	10.9
		1	42.2	71.2	62.3	65.9	**60.4**	11.0
		3	53.8	82.3	62.3	65.6	**66.0**	10.3
		6	49.0	75.7	59.9	61.6	**61.5**	9.5
		24	46.3	73.0	59.9	59.5	**59.7**	9.4
Empty	15	0	7.1	16.2	7.7	19.3	**12.6**	5.3
		1	7.6	17.5	9.0	19.4	**13.4**	5.1
		3	7.5	17.2	8.6	19.3	**13.1**	5.2
		6	7.4	17.5	8.6	18.7	**13.0**	5.1
		24	7.1	16.1	8.1	18.7	**12.5**	5.0
	30	0	38.3	41.8	28.3	33.1	**35.4**	5.1
		1	40.6	44.1	31.7	36.9	**38.3**	4.6
		3	37.3	46.8	28.3	36.2	**37.2**	6.6
		6	37.0	45.0	27.2	34.2	**35.8**	6.4
		24	35.0	42.4	26.4	33.0	**34.2**	5.7
	60	0	62.9	73.1	52.1	56.3	**61.1**	7.9
		1	64.8	75.2	53.1	63.8	**64.2**	7.8
		3	66.1	75.4	54.2	65.3	**65.3**	7.5
		6	62.1	74.4	48.1	60.9	**61.4**	9.3
		24	55.1	68.7	47.3	54.8	**56.5**	7.7

Table C.1-4 Measured carbon dioxide concentration for sample 1' (2 row caulking with additional protective coating). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Empty	60	0	50.6	64.3	47.2	53.6	**53.9**	6.4
		1	51.0	66.1	48.5	51.0	**54.1**	7.0
		3	52.3	64.8	49.2	53.7	**55.0**	5.9
		6	50.0	63.3	48.3	50.2	**53.0**	6.0
		24	48.4	60.4	46.6	50.0	**51.4**	5.4

Table C.1-5. The retention coefficient (%) for sample 1 (2 row caulking).
Amount of carbon dioxide after 24 h as a percentage of the initial concentration

Bin filling	Purging time (min)	Time (h)	Replicate				Mean	SD
			1	2	3	4		
Grain	15	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	101.3	103.5	93.8	92.9	97.9	4.6
		3	98.5	98.2	109.4	97.4	100.9	4.9
		6	94.5	97.7	93.1	107.9	98.3	5.8
		24	97.3	95.4	97.3	96.1	96.5	0.8
	30	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	104.7	95.8	99.2	100.5	100.1	3.2
		3	113.3	98.3	101.3	111.6	106.1	6.4
		6	98.6	97.1	100.5	107.7	101.0	4.1
		24	99.0	90.8	94.3	94.2	94.6	2.9
	60	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	84.5	90.0	101.2	93.0	92.2	6.0
		3	107.9	104.0	101.1	92.6	101.4	5.6
		6	98.3	95.6	97.1	86.8	94.5	4.5
		24	92.8	92.2	97.2	83.9	91.5	4.8
Empty	15	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	108.4	108.1	116.6	100.6	108.4	5.6
		3	106.3	106.1	111.7	100.2	106.0	4.1
		6	104.5	108.1	110.8	97.2	105.2	5.1
		24	100.3	99.7	105.6	97.2	100.7	3.0
	30	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	106.2	105.3	112.1	111.5	108.8	3.0
		3	97.6	111.8	100.0	109.5	104.7	6.1
		6	96.7	107.4	96.2	103.5	100.9	4.7
		24	91.5	101.3	93.5	99.8	96.5	4.1
	60	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	103.0	102.9	101.9	113.3	105.3	4.7
		3	105.0	103.2	104.1	116.0	107.1	5.2
		6	98.7	101.8	92.4	108.2	100.3	5.7
		24	87.5	94.0	90.9	97.4	92.4	3.7

Table C.1-6 The retention coefficient (%) for sample 1'
(2 row caulking with additional protective coating).
Amount of carbon dioxide after 24 h as a percentage of the initial concentration

Bin filling	Purging time (min)	Time (h)	Replicate				Mean	SD
			1	2	3	4		
Empty	60	0	100.0	100.0	100.0	100.0	100.0	0.0
		1	100.7	102.8	102.8	95.2	100.4	3.1
		3	103.5	100.8	104.3	100.2	102.2	1.7
		6	98.8	98.5	102.4	93.7	98.3	3.1
		24	95.7	94.0	98.7	93.3	95.4	2.1

Table C.2-1 Measured carbon dioxide concentrations at six locations in the bin for sample 2 (1 row caulking) using bin filled with wheat (11.8% m.c.) and empty bin.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
				Wheat filled bin					
				Purging time - 15 min					
0	1	10.7	16.1	14.9	16.2	10.0	10.7	**13.1**	2.7
	2	27.1	32.1	36.0	44.1	21.7	28.3	**31.5**	7.1
	3	29.6	22.3	38.6	44.0	27.2	26.0	**31.3**	7.6
	4	35.3	33.2	33.2	34.7	25.7	32.1	**32.4**	3.1
	Mean	**25.7**	**25.9**	**30.7**	**34.8**	**21.2**	**24.3**	**27.1**	**4.4**
1	1	11.6	14.7	15.5	16.4	10.6	12.0	**13.5**	2.2
	2	30.3	32.3	31.5	35.1	31.2	30.1	**31.8**	1.6
	3	29.6	30.8	33.2	34.9	24.3	33.3	**31.0**	3.5
	4	35.6	35.3	35.9	34.9	28.3	34.8	**34.1**	2.6
	Mean	**26.8**	**28.3**	**29.0**	**30.3**	**23.6**	**27.5**	**27.6**	**2.1**
3	1	11.1	13.1	19.6	15.7	11.3	10.9	**13.6**	3.1
	2	36.7	33.2	36.3	35.0	33.3	33.8	**34.7**	1.4
	3	29.9	30.7	33.6	34.8	26.7	32.3	**31.3**	2.6
	4	29.6	32.5	32.2	26.6	29.5	34.9	**30.9**	2.7
	Mean	**26.8**	**27.4**	**30.4**	**28.0**	**25.2**	**28.0**	**27.6**	**1.6**
6	1	14.8	13.9	13.5	14.3	13.0	11.2	**13.4**	1.1
	2	33.2	30.5	34.8	35.4	28.0	30.3	**32.0**	2.6
	3	30.1	30.7	31.2	31.6	29.2	31.3	**30.7**	0.8
	4	30.8	36.3	36.7	27.2	30.1	37.2	**33.1**	3.8
	Mean	**27.2**	**27.8**	**29.1**	**27.1**	**25.1**	**27.5**	**27.3**	**1.2**
24	1	10.7	13.0	14.2	14.3	12.3	10.2	**12.5**	1.6
	2	32.0	26.1	36.7	35.1	24.1	24.9	**29.8**	5.0
	3	30.4	30.6	31.4	31.4	31.5	30.3	**30.9**	0.5
	4	32.8	38.9	35.3	31.5	28.6	25.0	**32.0**	4.5
	Mean	**26.4**	**27.2**	**29.4**	**28.1**	**24.1**	**22.6**	**26.3**	**2.3**
				Purging time - 30 min					
0	1	54.8	68.0	62.1	67.3	53.3	57.3	**60.5**	5.7
	2	74.5	73.9	85.2	86.8	65.4	68.1	**75.7**	8.0
	3	46.9	67.3	64.2	66.9	49.8	48.4	**57.2**	9.0
	4	66.9	74.3	68.6	65.2	59.3	57.2	**65.3**	5.7
	Mean	**60.8**	**70.9**	**70.0**	**71.5**	**57.0**	**57.7**	**64.7**	**6.3**
1	1	55.1	66.5	67.1	66.1	51.3	60.8	**61.2**	6.1
	2	79.3	82.1	86.4	75.8	69.1	63.1	**76.0**	7.8
	3	58.9	63.7	60.6	66.8	56.5	58.9	**60.9**	3.4
	4	65.7	70.2	67.3	66.0	66.4	61.1	**66.1**	2.7
	Mean	**64.8**	**70.6**	**70.4**	**68.7**	**60.8**	**61.0**	**66.0**	**4.1**
3	1	62.0	67.1	64.2	65.2	61.7	61.6	**63.6**	2.1
	2	76.0	71.5	75.6	79.9	71.4	76.7	**75.2**	3.0
	3	56.5	62.7	63.4	64.9	52.3	50.8	**58.4**	5.6
	4	64.8	67.0	63.5	72.4	65.0	57.0	**65.0**	4.6
	Mean	**64.8**	**67.1**	**66.7**	**70.6**	**62.6**	**61.5**	**65.6**	**3.0**
6	1	55.0	57.8	65.1	55.2	62.5	66.0	**60.3**	4.5
	2	69.3	73.2	76.3	75.9	69.1	73.1	**72.8**	2.8
	3	57.8	55.0	55.5	59.4	56.1	57.0	**56.8**	1.5
	4	59.4	65.5	71.8	76.7	61.1	53.8	**64.7**	7.7
	Mean	**60.4**	**62.9**	**67.2**	**66.8**	**62.2**	**62.5**	**63.7**	**2.5**
24	1	57.3	57.3	55.5	59.1	55.3	56.5	**56.8**	1.3
	2	69.6	69.2	69.9	70.3	71.8	72.6	**70.6**	1.2
	3	56.2	56.8	54.3	59.3	53.0	58.0	**56.3**	2.2
	4	61.1	65.1	66.4	71.3	55.3	59.6	**63.1**	5.1
	Mean	**61.1**	**62.1**	**61.5**	**65.0**	**58.8**	**61.7**	**61.7**	**1.8**
				Purging time - 60 min					
0	1	70.8	80.2	71.7	81.7	72.1	69.9	**74.4**	4.7
	2	83.7	74.5	75.8	84.1	74.4	80.5	**78.8**	4.1

Table C.2-1 continued...

	3	78.6	77.9	80.3	90.9	66.3	64.5	**76.4**	8.9
	4	76.2	64.5	72.0	74.7	76.3	69.9	**72.2**	4.2
	Mean	**77.3**	**74.3**	**75.0**	**82.8**	**72.3**	**71.2**	**75.5**	**3.8**
1	**1**	82.1	78.3	78.7	78.0	75.6	71.8	**77.4**	3.1
	2	83.2	85.1	72.5	69.8	78.9	89.1	**79.8**	6.9
	3	68.4	68.1	81.5	80.5	72.4	76.3	**74.5**	5.3
	4	72.0	74.6	75.4	78.3	71.5	64.1	**72.6**	4.4
	Mean	**76.4**	**76.5**	**77.0**	**76.6**	**74.6**	**75.3**	**76.1**	**0.8**
3	**1**	70.1	70.5	70.0	77.8	73.3	67.6	**71.6**	3.3
	2	90.9	59.8	78.3	83.8	71.1	80.7	**77.5**	9.9
	3	85.0	82.8	82.9	81.3	78.5	75.8	**81.1**	3.1
	4	70.2	84.7	73.5	80.6	76.8	63.4	**74.9**	6.9
	Mean	**79.1**	**74.4**	**76.2**	**80.9**	**75.0**	**71.9**	**76.2**	**3.0**
6	**1**	75.8	72.0	67.6	74.8	60.8	60.7	**68.6**	6.2
	2	77.3	70.3	89.2	83.0	66.8	64.2	**75.1**	8.9
	3	86.5	90.2	81.0	82.0	77.7	80.4	**82.9**	4.2
	4	72.9	77.2	79.1	73.3	73.5	70.3	**74.4**	2.9
	Mean	**78.1**	**77.4**	**79.2**	**78.3**	**69.7**	**68.9**	**75.3**	**4.3**
24	**1**	69.6	63.6	75.5	71.5	64.9	60.4	**67.6**	5.1
	2	72.0	70.5	70.8	81.0	67.1	72.9	**72.4**	4.3
	3	65.7	81.9	73.9	77.5	66.5	65.9	**71.9**	6.3
	4	69.0	72.7	68.6	76.3	67.4	60.5	**69.1**	4.8
	Mean	**69.1**	**72.2**	**72.2**	**76.6**	**66.5**	**64.9**	**70.2**	**3.9**
				Bin empty					
				Purging time - 15 min					
0	**1**	17.6	16.1	18.6	16.5	16.6	14.6	**16.7**	1.2
	2	13.9	12.9	20.7	17.1	17.2	13.8	**15.9**	2.7
	3	19.1	19.3	18.8	18.3	16.5	17.6	**18.3**	1.0
	4	19.7	21.9	23.8	23.5	19.1	17.5	**20.9**	2.3
	Mean	**17.6**	**17.5**	**20.5**	**18.9**	**17.4**	**15.9**	**17.9**	**1.4**
1	**1**	15.0	16.1	17.1	19.9	18.9	19.3	**17.7**	1.8
	2	20.1	19.8	16.9	14.5	19.0	17.9	**18.0**	1.9
	3	23.9	19.2	18.2	18.1	21.3	26.8	**21.2**	3.2
	4	25.6	24.2	22.8	21.9	22.4	19.4	**22.7**	1.9
	Mean	**21.2**	**19.8**	**18.7**	**18.6**	**20.4**	**20.8**	**19.9**	**1.0**
3	**1**	19.0	18.7	16.6	21.5	19.6	19.6	**19.2**	1.4
	2	18.2	19.5	18.9	17.1	17.7	16.1	**17.9**	1.1
	3	19.6	19.4	19.5	21.9	18.5	19.5	**19.7**	1.0
	4	18.0	26.8	21.8	24.5	19.7	21.4	**22.0**	2.9
	Mean	**18.7**	**21.1**	**19.2**	**21.2**	**18.9**	**19.2**	**19.7**	**1.0**
6	**1**	14.9	16.4	17.2	15.5	19.0	14.3	**16.2**	1.6
	2	17.4	15.9	14.5	16.9	16.9	17.1	**16.4**	1.0
	3	19.6	18.6	19.2	19.1	19.9	18.6	**19.2**	0.5
	4	20.1	19.3	24.1	23.7	20.6	20.8	**21.4**	1.8
	Mean	**18.0**	**17.5**	**18.8**	**18.8**	**19.1**	**17.7**	**18.3**	**0.6**
24	**1**	15.6	17.2	15.3	15.7	15.7	17.2	**16.1**	0.8
	2	15.7	16.5	17.4	19.0	13.9	10.5	**15.5**	2.7
	3	18.9	18.8	17.9	17.2	19.1	19.6	**18.6**	0.8
	4	21.4	21.4	20.6	24.6	19.8	19.3	**21.2**	1.7
	Mean	**17.9**	**18.5**	**17.8**	**19.1**	**17.1**	**16.6**	**17.8**	**0.8**
				Purging time - 30 min					
0	**1**	33.8	31.5	39.2	37.7	32.7	30.1	**34.2**	3.3
	2	43.4	43.6	43.8	42.0	26.8	24.9	**37.4**	8.2
	3	40.4	40.2	41.3	43.5	37.9	37.2	**40.1**	2.1
	4	30.0	35.0	34.8	33.1	26.5	24.6	**30.7**	4.0
	Mean	**36.9**	**37.5**	**39.8**	**39.1**	**31.0**	**29.2**	**35.6**	**4.0**
1	**1**	43.8	40.0	37.1	44.2	38.1	36.3	**39.9**	3.1
	2	34.3	43.6	38.7	36.0	33.0	35.8	**36.9**	3.5
	3	47.0	42.0	46.0	45.6	42.2	46.6	**44.9**	2.0
	4	39.5	36.3	33.0	35.8	31.6	34.9	**35.2**	2.5
	Mean	**41.1**	**40.5**	**38.7**	**40.4**	**36.2**	**38.4**	**39.2**	**1.7**
3	**1**	34.1	32.5	40.1	42.7	32.7	34.1	**36.0**	3.9
	2	34.2	42.6	37.7	36.1	32.5	34.3	**36.2**	3.3
	3	42.8	43.4	40.1	41.8	40.1	45.6	**42.3**	2.1

Table C.2-1 continued...

	4	39.1	35.0	36.7	35.4	30.5	28.6	**34.2**	3.6
	Mean	**37.6**	**38.4**	**38.7**	**39.0**	**34.0**	**35.7**	**37.2**	**1.8**
6	**1**	35.2	32.1	39.5	36.7	34.2	37.0	**35.8**	2.3
	2	30.6	42.6	40.2	37.6	29.6	29.7	**35.1**	5.3
	3	38.2	40.2	42.8	38.6	39.7	38.2	**39.6**	1.6
	4	33.5	33.4	35.5	34.8	37.4	30.4	**34.2**	2.2
	Mean	**34.4**	**37.1**	**39.5**	**36.9**	**35.3**	**33.8**	**36.2**	**1.9**
24	**1**	35.0	32.1	29.8	33.4	34.3	31.0	**32.6**	1.8
	2	37.4	34.3	39.3	35.8	33.8	28.6	**34.9**	3.4
	3	37.4	42.9	37.9	42.2	38.1	37.9	**39.4**	2.2
	4	33.7	33.9	32.3	36.8	30.8	24.8	**32.0**	3.7
	Mean	**35.9**	**35.8**	**34.8**	**37.1**	**34.3**	**30.6**	**34.7**	**2.1**
				Purging time - 60min					
0	**1**	45.5	41.5	53.7	59.8	48.5	47.2	**49.4**	5.9
	2	57.7	59.1	74.9	71.7	56.6	57.5	**62.9**	7.4
	3	61.3	63.2	69.6	69.8	63.3	61.3	**64.8**	3.6
	4	64.3	62.0	63.4	66.5	61.0	48.0	**60.8**	6.0
	Mean	**57.2**	**56.5**	**65.4**	**66.9**	**57.4**	**53.5**	**59.5**	**4.9**
1	**1**	59.2	60.4	57.4	48.4	52.4	49.1	**54.5**	4.7
	2	67.9	71.9	75.9	70.6	59.8	64.9	**68.5**	5.2
	3	73.8	74.0	67.3	72.3	64.2	64.8	**69.4**	4.1
	4	74.4	67.8	62.3	59.2	69.5	61.8	**65.8**	5.2
	Mean	**68.8**	**68.5**	**65.7**	**62.6**	**61.5**	**60.1**	**64.5**	**3.4**
3	**1**	60.7	58.4	45.8	52.4	42.0	48.9	**51.4**	6.6
	2	60.5	57.9	67.2	61.6	65.2	62.2	**62.4**	3.1
	3	71.4	71.4	69.2	68.3	62.4	62.0	**67.5**	3.9
	4	65.7	76.1	61.7	61.5	65.7	67.1	**66.3**	4.9
	Mean	**64.6**	**66.0**	**61.0**	**61.0**	**58.8**	**60.1**	**61.9**	**2.5**
6	**1**	50.8	54.7	45.8	52.4	42.0	41.3	**47.8**	5.1
	2	59.9	61.5	62.0	53.4	49.5	69.1	**59.2**	6.3
	3	69.8	66.1	67.2	62.7	62.1	62.5	**65.1**	2.9
	4	63.5	76.5	67.7	69.9	67.3	64.3	**68.2**	4.3
	Mean	**61.0**	**64.7**	**60.7**	**59.6**	**55.2**	**59.3**	**60.1**	**2.8**
24	**1**	44.8	49.9	49.1	46.2	44.4	42.1	**46.1**	2.7
	2	59.6	62.1	57.7	56.8	51.8	58.4	**57.7**	3.1
	3	71.1	67.2	59.7	64.8	49.6	66.2	**63.1**	6.9
	4	68.5	64.7	67.8	59.2	55.9	50.2	**61.0**	6.6
	Mean	**61.0**	**61.0**	**58.6**	**56.7**	**50.4**	**54.2**	**57.0**	**3.8**

Table C. 2-2 Measured carbon dioxide concentrations at six locations for sample 2' (1 row caulking and seam covered with additional protective coating) for purging time 60 min and empty bin.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0	1	59.3	59.6	58.4	48.5	52.2	55.2	**55.6**	4.1
	2	68.8	57.7	66.1	68.9	68.9	63.9	**65.7**	4.0
	3	58.9	62.3	47.2	53.1	50.5	41.8	**52.3**	6.9
	4	65.4	65.9	75.9	66.3	52.7	69.2	**65.9**	6.9
	Mean	**63.1**	**61.4**	**61.9**	**59.2**	**56.1**	**57.5**	**59.9**	2.5
1	1	58.5	57.6	59.4	59.3	52.1	57.0	**57.3**	2.5
	2	70.0	64.5	67.0	63.8	69.2	64.3	**66.4**	2.5
	3	57.1	55.0	54.6	52.7	44.6	47.3	**51.9**	4.5
	4	70.4	65.3	74.5	69.5	66.9	67.2	**69.0**	3.0
	Mean	**64.0**	**60.6**	**63.9**	**61.3**	**58.2**	**58.9**	**61.2**	2.2
3	1	49.6	59.2	58.7	58.7	52.6	55.8	**55.8**	3.6
	2	67.2	66.3	64.9	66.0	67.3	64.2	**66.0**	1.1
	3	54.0	56.8	57.1	51.8	43.8	46.2	**51.6**	5.1
	4	66.6	62.2	63.8	65.5	66.1	66.9	**65.2**	1.7
	Mean	**59.4**	**61.1**	**61.1**	**60.5**	**57.5**	**58.3**	**59.6**	1.4
6	1	52.1	57.3	56.8	56.5	51.2	53.8	**54.6**	2.4
	2	66.5	62.7	68.9	67.4	65.1	64.3	**65.8**	2.0
	3	50.8	54.9	51.9	55.0	56.8	50.8	**53.4**	2.3
	4	64.0	67.3	69.1	68.0	54.7	57.5	**63.4**	5.5
	Mean	**58.3**	**60.5**	**61.7**	**61.7**	**57.0**	**56.6**	**59.3**	2.1
24	1	48.7	54.3	53.0	53.8	55.2	52.8	**53.0**	2.1
	2	62.4	62.0	67.7	59.9	63.7	63.2	**63.1**	2.3
	3	52.8	55.9	59.0	52.6	43.4	49.2	**52.2**	4.9
	4	54.2	57.7	73.0	79.4	58.8	57.6	**63.5**	9.3
	Mean	**54.5**	**57.5**	**63.2**	**61.4**	**55.3**	**55.7**	**57.9**	3.3

Table C.2-3 Measured carbon dioxide concentration (%) for sample 2 (1 row caulking). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	15	0	13.1	31.5	31.3	32.4	**27.1**	8.1
		1	13.5	31.8	31.0	34.1	**27.6**	8.2
		3	13.6	34.7	31.3	30.9	**27.6**	8.2
		6	13.4	32.0	30.7	33.1	**27.3**	8.1
		24	12.5	29.8	30.9	32.0	**26.3**	8.0
	30	0	60.5	75.7	57.2	65.3	**64.7**	7.0
		1	61.2	76.0	60.9	66.1	**66.0**	6.1
		3	63.6	75.2	58.4	65.0	**65.6**	6.1
		6	60.3	72.8	56.8	64.7	**63.7**	6.0
		24	56.8	70.6	56.3	63.1	**61.7**	5.8
	60	0	74.4	78.8	76.4	72.2	**75.5**	2.4
		1	77.4	79.8	74.5	72.6	**76.1**	2.7
		3	71.6	77.5	81.1	74.9	**76.2**	3.5
		6	68.6	75.1	82.9	74.4	**75.3**	5.1
		24	67.6	72.4	71.9	69.1	**70.2**	2.0
Empty	15	0	16.7	15.9	18.3	20.9	**17.9**	1.9
		1	17.7	18.0	21.2	22.7	**19.9**	2.1
		3	19.2	17.9	19.7	22.0	**19.7**	1.5
		6	16.2	16.4	19.2	21.4	**18.3**	2.1
		24	16.1	15.5	18.6	21.2	**17.8**	2.2
	30	0	34.2	37.4	40.1	30.7	**35.6**	3.5
		1	39.9	36.9	44.9	35.2	**39.2**	3.7
		3	36.0	36.2	42.2	34.2	**37.2**	3.0
		6	35.8	35.1	39.6	34.2	**36.2**	2.1
		24	32.6	34.9	39.4	32.0	**34.7**	2.9
	60	0	49.4	62.9	64.8	60.8	**59.5**	6.0
		1	53.5	68.5	69.4	65.8	**64.3**	6.4
		3	51.4	62.4	67.5	66.3	**61.9**	6.4
		6	47.8	59.2	65.1	68.2	**60.1**	7.8
		24	46.1	57.7	63.1	61.0	**57.0**	6.6

Table C.2-4 Measured carbon dioxide concentration for sample 2' (1 row caulking with additional protective coating). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Empty	60	0	55.6	65.7	52.3	65.9	**59.9**	6.0
		1	57.3	66.4	51.9	69.0	**61.2**	6.9
		3	55.8	66.0	51.6	65.2	**59.6**	6.1
		6	54.6	65.8	53.4	63.4	**59.3**	5.4
		24	53.0	63.1	52.2	63.5	**57.9**	5.4

Table C.2-5 The retention coefficients (%) for sample 2 (1 row caulking).
Amount of carbon dioxide after 24 h as a percentage of the initial conc.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	15	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	102.7	100.8	99.1	105.3	**102.0**	2.3
		3	104.0	110.0	100.1	95.3	**102.4**	5.4
		6	102.4	101.5	98.1	102.1	**101.0**	1.8
		24	95.0	94.6	98.8	98.8	**96.8**	2.0
	30	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	101.1	100.4	106.4	101.4	**102.3**	2.4
		3	105.2	99.4	102.1	99.5	**101.6**	2.4
		6	99.7	96.2	99.2	99.2	**98.6**	1.4
		24	94.0	93.3	98.3	96.8	**95.6**	2.0
	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	104.1	101.2	97.5	100.6	**100.8**	2.3
		3	96.2	98.2	106.0	103.6	**101.0**	4.0
		6	92.2	95.3	108.5	103.0	**99.7**	6.4
		24	90.8	91.8	94.1	95.6	**93.1**	1.9
Empty	15	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	106.2	113.2	116.3	108.7	**111.1**	3.9
		3	115.0	112.4	108.0	105.4	**110.2**	3.7
		6	97.2	103.2	104.9	102.5	**102.0**	2.9
		24	96.6	97.4	101.7	101.2	**99.2**	2.2
	30	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	116.8	98.6	112.1	114.8	**110.6**	7.1
		3	105.4	96.8	105.3	111.6	**104.8**	5.2
		6	104.7	93.7	98.8	111.4	**102.2**	6.6
		24	95.4	93.2	98.3	104.5	**97.9**	4.3
	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	108.4	108.9	107.1	108.2	**108.2**	0.6
		3	104.0	99.2	104.2	109.0	**104.1**	3.4
		6	96.9	94.2	100.5	112.1	**100.9**	6.8
		24	93.3	91.8	97.4	100.3	**95.7**	3.4

Table C.2-6 The retention coefficients (%) for sample 2'
(1 row caulking with additional protective coating).
Amount of carbon dioxide after 24 h as a percentage of the initial conc.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Empty	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	103.2	101.1	99.2	104.6	**102.0**	2.1
		3	100.4	100.5	98.7	98.9	**99.6**	0.8
		6	98.3	100.1	102.1	96.3	**99.2**	2.2
		24	95.3	96.1	99.7	96.3	**96.9**	1.7

Table C.3-1 Measured carbon dioxide concentrations at six locations in the bin for sample 3 (no caulking) using bin filled with wheat (11.8% m.c.) and empty bin.

Time (h)	Replicate	Sampling Locations 1	2	3	4	5	6	Mean	SD
				Wheat filled bin					
				Purging time - 15 min					
0	1	15.8	10.3	14.5	22.7	14.9	16.3	**15.7**	3.7
	2	12.0	19.0	27.0	33.5	14.8	12.3	**19.8**	8.0
	3	20.4	24.8	28.1	26.8	18.9	19.4	**23.1**	3.7
	4	19.6	23.8	27.9	29.8	16.9	19.1	**22.8**	4.7
	Mean	**16.9**	**19.5**	**24.4**	**28.2**	**16.4**	**16.8**	**20.4**	**4.5**
1	1	16.5	11.2	16.0	17.6	15.4	16.8	**15.6**	2.1
	2	15.9	20.1	20.9	22.5	19.1	17.1	**19.3**	2.2
	3	20.6	23.0	23.7	26.0	22.1	21.4	**22.8**	1.7
	4	30.3	24.3	21.6	29.5	20.7	23.2	**24.9**	3.7
	Mean	**20.9**	**19.6**	**20.6**	**23.9**	**19.4**	**19.6**	**20.7**	**1.5**
3	1	13.6	18.1	19.2	14.9	14.8	13.4	**15.7**	2.2
	2	19.8	21.0	14.8	19.5	17.8	18.5	**18.6**	2.1
	3	21.4	23.2	24.7	26.6	22.5	20.3	**23.1**	2.1
	4	23.9	21.7	25.8	27.3	21.4	24.2	**24.0**	2.1
	Mean	**19.6**	**21.0**	**21.1**	**22.1**	**19.1**	**19.1**	**20.3**	**1.1**
6	1	15.9	16.4	16.7	16.7	13.5	13.9	**15.5**	1.3
	2	16.9	17.0	20.9	21.5	14.1	15.1	**17.6**	2.8
	3	19.8	25.2	21.9	20.0	23.3	25.0	**22.5**	2.1
	4	23.5	23.4	20.9	23.8	21.3	20.7	**22.3**	1.3
	Mean	**19.0**	**20.5**	**20.1**	**20.5**	**18.1**	**18.7**	**19.5**	**0.9**
24	1	14.2	13.5	16.1	16.8	15.3	14.1	**15.0**	1.2
	2	15.0	14.0	18.5	17.0	14.8	12.3	**15.3**	2.0
	3	22.1	23.4	22.7	26.3	19.9	19.1	**22.2**	2.3
	4	19.0	19.7	21.5	25.4	23.5	22.2	**21.9**	2.2
	Mean	17.6	17.6	19.7	21.4	18.4	16.9	**18.6**	1.5
				Purging time - 30 min					
0	1	32.9	35.8	33.7	37.4	26.3	23.5	**31.6**	5.0
	2	51.0	59.0	54.4	68.6	55.7	45.0	**55.6**	7.2
	3	54.8	59.5	56.9	61.1	46.9	46.5	**54.3**	5.7
	4	46.7	50.1	51.8	59.0	40.2	42.6	**48.4**	6.2
	Mean	**46.4**	**51.1**	**49.2**	**56.5**	**42.3**	**39.4**	**47.5**	**5.6**
1	1	27.9	26.3	27.2	30.6	29.0	27.5	**28.1**	1.4
	2	48.9	51.9	48.7	65.0	58.0	48.5	**53.5**	6.1
	3	51.2	53.7	53.0	58.1	42.2	36.6	**49.1**	7.3
	4	55.8	44.1	50.2	68.2	44.9	44.8	**51.3**	8.6
	Mean	**45.9**	**44.0**	**44.8**	**55.5**	**43.5**	**39.4**	**45.5**	**4.9**
3	1	27.0	29.0	32.1	33.9	29.1	23.1	**29.0**	3.5
	2	46.7	47.9	52.7	61.5	60.2	52.2	**53.5**	5.6
	3	47.9	47.6	54.1	52.3	46.2	44.1	**48.7**	3.5
	4	49.9	54.9	46.8	49.5	42.7	45.3	**48.2**	3.9
	Mean	**42.9**	**44.8**	**46.4**	**49.3**	**44.5**	**41.2**	**44.9**	**2.6**
6	1	28.8	27.7	27.7	33.2	24.7	25.0	**27.9**	2.8
	2	53.3	53.1	49.6	51.5	52.5	53.4	**52.2**	1.3
	3	44.4	41.6	55.1	46.6	49.9	45.6	**47.2**	4.3
	4	56.7	40.0	39.9	61.9	41.5	50.9	**48.5**	8.6
	Mean	**45.8**	**40.6**	**43.1**	**48.3**	**42.2**	**43.7**	**44.0**	**2.5**
24	1	30.6	26.4	23.5	32.4	20.3	27.0	**26.7**	4.1
	2	60.0	58.8	46.5	41.5	44.8	54.9	**51.1**	7.1
	3	41.1	56.1	47.9	36.5	50.7	49.1	**46.9**	6.4
	4	41.8	42.0	39.6	42.0	38.1	40.2	**40.6**	1.5
	Mean	**43.4**	**45.8**	**39.3**	**38.1**	**38.5**	**42.8**	**41.3**	**2.9**
				Purging time - 60 min					
0	1	76.3	77.5	79.6	78.0	75.7	75.4	**77.1**	1.4
	2	78.8	71.0	72.3	72.3	78.6	76.2	**74.9**	3.2

Table C.3-1 continued...

	3	94.6	88.2	77.5	54.1	73.7	46.8	**72.5**	17.1
	4	53.9	50.9	46.0	49.9	55.9	39.3	**49.3**	5.5
	Mean	**75.9**	**71.9**	**68.8**	**63.6**	**71.0**	**59.4**	**68.4**	**5.5**
1	**1**	75.0	86.3	70.6	70.7	70.4	70.2	**73.9**	5.8
	2	71.9	72.8	73.4	75.2	75.9	73.8	**73.8**	1.4
	3	73.2	77.8	73.2	73.7	61.8	63.3	**70.5**	5.8
	4	53.7	48.7	41.5	45.4	49.1	47.3	**47.6**	3.7
	Mean	**68.4**	**71.4**	**64.7**	**66.2**	**64.3**	**63.7**	**66.4**	**2.7**
3	**1**	76.3	74.5	69.6	72.0	75.7	75.6	**73.9**	2.4
	2	73.8	71.2	70.8	72.6	79.5	75.2	**73.8**	3.0
	3	65.3	73.9	73.8	71.7	69.6	66.3	**70.1**	3.4
	4	57.8	57.3	50.1	63.9	45.3	36.5	**51.8**	9.1
	Mean	**68.3**	**69.2**	**66.0**	**70.0**	**67.5**	**63.4**	**67.4**	**2.2**
6	**1**	75.4	72.8	67.4	70.1	72.4	74.1	**72.0**	2.6
	2	71.8	73.2	74.3	76.1	75.1	71.1	**73.6**	1.7
	3	67.3	71.7	69.4	68.0	68.9	65.3	**68.5**	2.0
	4	51.2	49.2	44.8	43.2	46.9	53.7	**48.2**	3.6
	Mean	**66.4**	**66.8**	**64.0**	**64.4**	**65.8**	**66.1**	**65.6**	**1.0**
24	**1**	74.5	71.1	65.2	68.2	69.0	72.4	**70.1**	3.0
	2	69.6	71.3	73.7	74.4	66.7	66.9	**70.4**	3.0
	3	69.3	69.6	64.9	64.2	66.3	64.2	**66.4**	2.2
	4	47.8	40.1	44.4	43.3	41.8	41.4	**43.1**	2.5
	Mean	**65.3**	**63.0**	**62.1**	**62.5**	**61.0**	**61.2**	**62.5**	**1.4**
				Bin empty					
				Purging time - 15 min					
0	**1**	9.2	8.5	9.4	9.8	7.8	5.8	**8.4**	1.4
	2	12.5	14.0	15.6	17.3	13.2	16.9	**15.8**	1.9
	3	13.6	12.6	15.0	10.4	14.2	13.8	**13.3**	1.5
	4	30.4	25.1	26.7	39.1	25.3	22.6	**28.2**	5.4
	Mean	**16.4**	**15.0**	**16.7**	**19.2**	**15.1**	**14.8**	**16.2**	**1.5**
1	**1**	8.2	9.0	8.9	9.1	7.7	8.1	**8.5**	0.5
	2	15.7	17.3	11.1	15.3	16.9	15.7	**15.3**	2.0
	3	12.3	12.4	13.8	14.9	13.3	13.1	**13.3**	0.9
	4	30.1	27.6	27.6	28.6	27.1	27.4	**28.1**	1.0
	Mean	**16.6**	**16.6**	**15.3**	**17.0**	**16.3**	**16.1**	**16.3**	**0.5**
3	**1**	6.4	7.5	7.1	8.6	9.2	9.8	**8.1**	1.2
	2	16.3	16.9	16.0	18.2	15.7	17.7	**16.8**	0.9
	3	13.0	13.7	11.2	10.6	14.6	13.2	**12.7**	1.4
	4	28.5	31.7	31.5	28.2	29.5	28.5	**29.7**	1.4
	Mean	**16.1**	**17.5**	**16.5**	**16.4**	**17.2**	**17.3**	**16.8**	**0.5**
6	**1**	7.8	7.5	7.6	8.6	7.8	8.5	**8.0**	0.4
	2	15.9	16.5	16.5	16.7	15.1	17.7	**16.5**	0.9
	3	12.4	12.4	12.9	11.8	13.3	13.5	**12.7**	0.6
	4	27.7	33.0	33.4	26.6	21.5	26.3	**28.1**	4.1
	Mean	**16.0**	**17.3**	**17.6**	**15.9**	**14.4**	**16.5**	**16.3**	**1.0**
24	**1**	9.2	7.4	8.1	8.6	6.4	7.3	**7.9**	0.9
	2	15.1	17.8	15.9	16.7	13.5	14.7	**15.0**	1.3
	3	11.7	11.3	11.5	13.1	12.1	12.8	**12.1**	0.7
	4	22.1	22.9	32.7	29.0	27.4	28.8	**27.2**	3.7
	Mean	**14.5**	**14.9**	**17.1**	**16.9**	**14.9**	**15.9**	**15.7**	**1.0**
				Purging time - 30 min					
0	**1**	41.3	44.1	42.3	41.7	38.6	44.8	**42.1**	2.0
	2	34.9	37.4	37.3	43.2	31.5	35.8	**36.7**	3.5
	3	30.9	33.0	34.7	34.6	32.1	33.0	**33.1**	1.3
	4	38.8	42.8	41.8	42.6	43.5	41.0	**41.8**	1.5
	Mean	**36.5**	**39.3**	**39.0**	**40.5**	**36.4**	**38.6**	**38.4**	**1.5**
1	**1**	45.0	48.3	36.6	39.8	33.6	33.9	**39.5**	5.5
	2	40.3	42.0	29.9	28.5	39.1	32.4	**35.4**	5.3
	3	32.0	32.3	38.6	34.6	26.6	32.3	**32.7**	3.6
	4	40.5	40.7	46.2	45.9	40.6	38.8	**42.1**	2.8
	Mean	**39.4**	**40.8**	**37.8**	**37.2**	**35.0**	**34.4**	**37.4**	**2.3**
3	**1**	38.1	45.6	35.7	39.3	35.4	34.8	**38.2**	3.7
	2	40.0	38.2	36.5	40.5	39.4	42.6	**39.5**	1.9

Table C.3-1 continued...

	3	28.3	33.8	27.9	25.1	27.7	32.1	**29.2**	3.2
	4	42.7	39.3	45.1	40.1	44.6	37.6	**41.6**	2.8
	Mean	**37.3**	**39.2**	**36.3**	**36.3**	**36.8**	**36.8**	**37.1**	**1.0**
6	**1**	31.0	42.8	34.9	38.9	37.3	35.6	**36.7**	3.6
	2	38.4	36.1	34.2	39.7	37.2	38.9	**37.4**	1.8
	3	24.5	35.3	27.2	25.6	28.7	31.9	**28.9**	3.7
	4	39.4	38.3	44.5	43.2	45.0	36.6	**41.2**	3.2
	Mean	**33.3**	**38.1**	**35.2**	**36.8**	**37.0**	**35.8**	**36.1**	**1.5**
24	**1**	39.5	40.1	34.2	38.5	39.2	36.4	**38.0**	2.1
	2	36.8	34.1	31.8	38.8	35.1	35.2	**35.3**	2.2
	3	33.1	26.8	26.5	26.2	29.7	31.6	**29.0**	2.7
	4	41.9	43.0	41.4	39.9	37.0	35.3	**39.7**	2.7
	Mean	**37.8**	**36.0**	**33.5**	**35.8**	**35.3**	**34.7**	**35.5**	**1.3**
				Purging time - 60min					
0	**1**	53.8	50.9	38.7	54.9	55.0	48.5	**50.3**	6.0
	2	53.0	64.3	47.6	66.6	53.5	61.0	**57.7**	6.8
	3	44.4	46.7	43.3	48.9	42.2	56.5	**47.0**	4.8
	4	48.1	72.5	43.5	43.6	59.2	50.3	**52.9**	10.2
	Mean	**49.8**	**58.6**	**43.3**	**53.5**	**52.5**	**54.1**	**52.0**	**4.7**
1	**1**	59.0	48.0	51.9	50.9	52.6	57.2	**53.2**	3.7
	2	60.5	58.2	57.0	60.4	66.1	53.5	**59.3**	3.8
	3	43.9	56.7	48.8	46.5	51.4	51.3	**49.7**	4.1
	4	49.0	63.8	48.3	66.9	39.4	47.7	**52.5**	9.7
	Mean	**53.1**	**56.7**	**51.5**	**56.2**	**52.4**	**52.4**	**53.7**	**2.0**
3	**1**	52.5	48.7	42.2	51.8	53.9	52.4	**50.3**	3.9
	2	61.1	65.5	62.3	59.2	66.7	52.6	**61.2**	4.6
	3	45.9	55.5	47.3	41.7	51.4	50.6	**48.7**	4.4
	4	43.7	60.1	40.4	64.2	42.5	58.9	**51.7**	9.6
	Mean	**50.8**	**57.5**	**48.1**	**54.2**	**53.6**	**53.6**	**53.0**	**2.9**
6	**1**	51.2	46.5	45.4	48.7	52.7	56.2	**50.1**	3.7
	2	56.9	63.7	64.0	62.5	57.8	57.7	**60.4**	3.0
	3	47.1	45.8	46.2	47.9	44.2	46.5	**46.3**	1.1
	4	39.9	50.1	40.9	41.6	63.9	50.3	**47.8**	8.4
	Mean	**48.8**	**51.5**	**49.1**	**50.2**	**54.7**	**52.7**	**51.2**	**2.1**
24	**1**	40.3	44.0	50.7	48.1	42.2	40.6	**44.3**	3.9
	2	52.7	52.0	55.7	55.7	58.9	52.8	**54.6**	2.4
	3	46.9	43.0	41.8	50.3	42.2	43.6	**44.6**	3.0
	4	62.5	47.4	51.6	53.4	41.7	43.1	**50.0**	7.0
	Mean	**50.6**	**46.6**	**50.0**	**51.9**	**46.3**	**45.0**	**48.4**	**2.5**

Table C. 3-2 Measured carbon dioxide concentrations at six locations for sample 3' (no caulking and seam covered with additional protective coating) for purging time 60 min and empty bin.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0h	1	64.4	60.1	47.6	47.0	57.4	43.0	**53.2**	7.8
	2	61.9	60.6	63.4	60.4	50.9	55.2	**58.7**	4.3
	3	43.0	39.4	46.1	49.6	38.9	40.4	**42.9**	3.9
	4	60.9	44.5	44.9	42.0	52.6	43.8	**48.1**	6.6
	Mean	**57.5**	**51.2**	**50.5**	**49.7**	**49.9**	**45.6**	**50.7**	3.5
1h	1	54.5	51.6	57.0	59.1	47.0	45.4	**52.4**	5.0
	2	55.9	65.5	65.4	59.8	57.0	55.6	**59.9**	4.2
	3	48.2	52.6	51.3	42.2	45.9	48.9	**48.2**	3.4
	4	33.3	52.2	44.8	55.2	40.2	39.2	**44.2**	7.6
	Mean	**48.0**	**55.5**	**54.6**	**54.1**	**47.5**	**47.3**	**51.2**	3.6
3h	1	41.7	53.1	56.2	52.2	44.3	45.7	**48.9**	5.3
	2	49.9	70.3	67.3	59.2	63.2	55.9	**61.0**	6.9
	3	49.4	49.1	47.7	39.5	48.3	42.0	**46.0**	3.8
	4	51.9	42.2	42.6	52.8	51.4	44.4	**47.5**	4.6
	Mean	**48.2**	**53.7**	**53.4**	**50.9**	**51.8**	**47.0**	**50.8**	2.5
6h	1	49.8	54.6	55.4	45.4	41.4	45.9	**48.8**	5.1
	2	59.5	64.4	64.3	59.4	52.5	56.8	**59.5**	4.2
	3	41.0	50.5	47.3	47.9	42.0	45.8	**45.7**	3.3
	4	48.9	44.0	42.1	49.7	39.7	42.7	**44.5**	3.6
	Mean	49.8	53.4	52.3	50.6	43.9	47.8	**49.6**	3.1
24h	1	47.9	56.1	54.6	38.4	48.5	46.1	**48.6**	5.8
	2	49.1	58.4	61.2	59.4	51.9	57.7	**56.3**	4.3
	3	49.6	50.3	47.8	39.2	40.3	36.1	**43.9**	5.6
	4	44.8	38.6	48.0	53.5	54.9	35.4	**45.9**	7.1
	Mean	47.9	50.9	52.9	47.6	48.9	43.8	**48.7**	2.8

Table C.3-3 Measured carbon dioxide concentrations (%) for sample 3 (no caulking). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	15	0	15.7	19.8	23.1	22.8	**20.4**	3.0
		1	15.6	19.3	22.8	24.9	**20.7**	3.5
		3	15.7	18.6	23.1	24.0	**20.3**	3.4
		6	15.5	17.6	22.5	22.3	**19.5**	3.0
		24	15.0	18.6	22.2	21.9	**19.4**	2.9
	30	0	31.6	55.6	54.3	48.4	**47.5**	9.6
		1	28.1	53.5	49.1	51.3	**45.5**	10.2
		3	29.0	53.5	48.7	48.2	**44.9**	9.4
		6	27.9	52.2	47.2	48.5	**44.0**	9.5
		24	26.7	51.1	46.9	40.6	**41.3**	9.2
	60	0	77.1	74.9	72.5	49.3	**68.4**	11.2
		1	73.9	73.8	70.5	47.6	**66.4**	11.0
		3	73.9	73.8	70.1	51.8	**67.4**	9.1
		6	72.0	73.6	68.5	48.2	**65.6**	10.2
		24	70.1	70.4	66.4	43.1	**62.5**	11.3
Empty	15	0	8.4	14.9	13.3	28.2	**16.2**	7.3
		1	8.5	15.3	13.3	28.1	**16.3**	7.2
		3	8.1	16.8	12.7	29.7	**16.8**	8.0
		6	8.0	16.5	12.7	28.1	**16.3**	7.4
		24	7.9	15.6	12.1	27.2	**15.7**	7.2
	30	0	42.1	36.7	33.1	41.8	**38.4**	3.8
		1	39.5	35.4	32.7	42.1	**37.4**	3.6
		3	38.2	39.5	29.3	41.6	**37.2**	4.7
		6	36.7	37.4	28.9	41.2	**36.1**	4.5
		24	38.0	35.3	29.0	39.7	**35.5**	4.1
	60	0	50.3	57.7	47.0	52.9	**52.0**	3.9
		1	53.2	59.3	49.7	52.5	**53.7**	3.5
		3	50.3	61.2	48.7	51.7	**53.0**	4.9
		6	50.1	60.4	46.3	47.8	**51.2**	5.5
		24	44.3	54.6	44.6	50.0	**48.4**	4.3

Table C.3-4 Measured carbon dioxide concentrations for sample 3' (no caulking with additional protective coating). Means of the six sampling ports.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Empty	60	0	53.2	58.7	42.9	48.1	**50.7**	5.9
		1	52.4	59.9	48.2	44.2	**51.2**	5.8
		3	48.9	61.0	46.0	47.5	**50.8**	5.9
		6	48.8	59.5	45.7	44.5	**49.6**	5.9
		24	48.6	56.3	43.9	45.9	**48.7**	4.7

Table C.3-5 The retention coefficients (%) for sample 3 (no caulking).
Amount of carbon dioxide after 24 h as a percentage of the initial concentration.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Grain	15	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	99.1	97.5	98.8	109.2	**101.1**	4.7
		3	99.4	94.0	100.1	105.3	**99.7**	4.0
		6	98.5	89.1	97.6	97.4	**95.7**	3.8
		24	95.3	94.0	96.3	95.8	**95.3**	0.9
	30	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	88.9	96.2	90.5	106.0	**95.4**	6.7
		3	91.8	96.3	89.7	99.5	**94.3**	3.8
		6	88.2	93.9	87.0	100.2	**92.3**	5.2
		24	84.5	91.9	86.4	83.9	**86.7**	3.1
	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	95.8	98.6	97.2	96.5	**97.0**	1.0
		3	95.9	98.6	96.7	105.0	**99.1**	3.6
		6	93.5	98.3	94.4	97.7	**96.0**	2.0
		24	90.9	94.0	91.7	87.5	**91.0**	2.4
Empty	15	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	100.7	102.7	100.3	99.5	**100.8**	1.2
		3	96.3	112.7	95.9	105.2	**102.5**	6.9
		6	94.5	110.6	96.0	99.5	**100.2**	6.3
		24	93.1	104.8	91.2	96.3	**96.3**	5.2
	30	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	93.9	96.5	99.0	100.8	**97.5**	2.6
		3	90.6	107.8	88.8	99.6	**96.7**	7.6
		6	87.3	102.1	87.4	98.6	**93.8**	6.6
		24	90.2	96.3	87.7	95.2	**92.4**	3.5
	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	105.8	102.8	105.8	99.3	**103.4**	2.7
		3	99.9	106.2	103.6	97.7	**101.8**	3.3
		6	99.6	104.8	98.4	90.4	**98.3**	5.2
		24	88.1	94.8	94.9	94.5	**93.1**	2.9

Table C.3-6 The retention coefficients (%) for sample 3'
(no caulking with additional protective coating).
Amount of carbon dioxide after 24 h as a percentage of the initial concentration.

Bin filling	Purging time (min)	Time (h)	Replicate 1	2	3	4	Mean	SD
Empty	60	0	100.0	100.0	100.0	100.0	**100.0**	0.0
		1	98.5	101.9	112.4	91.8	**101.1**	7.4
		3	91.8	103.8	107.3	98.8	**100.4**	5.8
		6	91.6	101.2	106.6	92.5	**98.0**	6.3
		24	91.3	95.8	102.3	95.3	**96.2**	4.0

Appendix D.

Experimental Data on CO_2 Concentration

Decay after 120 h.

Table D.1-1 Measured carbon dioxide concentrations at six locations in the bin for sample 1 (2 row caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0	1	36.9	47.7	48.6	47.1	64.4	54.8	49.9	8.4
	2	72.8	86.7	79.2	77.7	76.4	82.1	79.2	4.4
	3	63.9	57.7	54.3	62.5	64.7	66.7	61.6	4.3
	Mean	57.9	64.0	60.7	62.4	52.6	52.4	63.6	5.7
1	1	40.2	41.6	35.2	39.4	60.9	35.8	42.2	8.7
	2	57.3	65.4	74.5	71.1	76.6	82.3	71.2	8.1
	3	58.5	52.4	64.9	63.5	68.7	66.0	62.3	5.4
	Mean	52.0	53.2	58.2	58.0	68.8	61.4	58.6	7.4
3	1	44.4	51.8	46.4	54.0	62.7	63.8	53.8	7.4
	2	76.2	86.2	88.8	87.1	77.6	77.7	82.3	5.2
	3	65.0	63.1	58.8	64.6	55.1	66.9	62.3	4.1
	Mean	61.9	67.1	64.7	68.6	65.2	69.5	66.1	5.5
6	1	45.6	44.9	54.2	55.1	47.8	46.8	49.0	4.1
	2	75.1	77.0	71.5	85.2	76.3	69.0	75.7	5.1
	3	60.3	56.0	57.8	65.2	62.0	57.9	59.9	3.1
	Mean	60.3	59.3	61.2	68.5	62.0	57.9	61.5	4.1
24	1	49.4	38.1	48.6	47.9	49.5	44.5	46.3	4.0
	2	78.7	79.6	69.6	69.2	67.9	72.7	73.0	4.6
	3	56.4	63.6	61.1	57.1	64.2	57.0	59.9	3.2
	Mean	61.5	60.4	59.8	58.1	60.6	58.1	59.7	3.9
48	1	49.7	38.3	43.3	46.5	49.4	44.8	45.3	3.9
	2	75.2	80.1	74.0	67.0	65.0	66.3	71.3	5.5
	3	53.9	65.8	59.1	48.2	62.4	57.7	57.8	5.7
	Mean	59.6	61.4	58.8	53.9	58.9	56.3	58.1	5.0
72	1	49.0	45.6	38.7	36.8	47.2	41.3	43.1	4.5
	2	75.1	78.8	58.2	77.4	66.4	71.3	71.2	7.1
	3	45.2	56.9	63.5	57.4	53.6	42.4	53.2	7.3
	Mean	56.4	60.5	53.5	57.2	55.7	51.7	55.8	6.3
96	1	47.5	44.1	36.0	39.3	42.3	40.7	41.6	3.6
	2	76.8	79.8	76.6	62.6	58.5	70.9	70.9	7.8
	3	60.3	60.9	49.3	48.3	49.3	50.3	53.1	5.4
	Mean	61.5	61.6	53.9	50.1	50.0	53.9	55.2	5.6
120	1	45.3	46.9	35.5	37.9	39.3	34.7	39.9	4.6
	2	73.1	72.5	71.3	76.9	54.8	60.4	68.2	7.8
	3	51.2	59.3	51.5	46.2	50.2	50.5	51.5	3.9
	Mean	56.5	59.6	52.8	53.7	48.1	48.5	53.2	5.5

Table D.1-2 The retention coefficients (%) for sample 1 (2 row caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Bin filling	Purging time (min)	Time (h)	Replicate			Mean	SD
			1	2	3		
Grain	60	0	100.0	100.0	100.0	100.0	0.0
		1	84.5	90.0	101.2	92.2	6.9
		3	107.9	104.0	101.1	104.0	2.8
		6	98.3	95.6	97.1	96.8	1.1
		24	92.8	92.2	97.2	94.0	2.2
		48	90.8	90.0	93.9	91.5	1.6
		72	86.3	90.0	86.3	87.8	1.7
		96	83.4	89.5	86.1	86.8	2.5
		120	80.0	86.1	83.5	83.7	2.5

Table D.2-1 Measured carbon dioxide concentrations at six locations in the bin for sample 2 (1 row caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0	1	70.8	80.2	71.7	81.7	72.1	69.9	**74.4**	4.7
	2	83.7	74.5	75.8	84.1	74.4	80.5	**78.8**	4.1
	3	78.6	77.9	80.3	90.9	66.3	64.5	**76.4**	8.9
	Mean	77.7	77.5	76.0	85.6	70.9	71.7	**76.6**	5.9
1	1	82.1	78.3	78.7	78.0	75.6	71.8	**77.4**	3.1
	2	83.2	85.1	72.5	69.8	78.9	89.1	**79.8**	6.9
	3	68.4	68.1	81.5	80.5	72.4	76.3	**74.5**	5.3
	Mean	77.9	77.2	77.6	76.1	75.6	79.1	**77.2**	5.1
3	1	70.1	70.5	70.0	77.8	73.3	67.6	**71.6**	3.3
	2	90.9	59.8	78.3	83.8	71.1	80.7	**77.5**	9.9
	3	85.0	82.8	82.9	81.3	78.5	75.8	**81.1**	3.1
	Mean	82.0	71.0	77.1	81.0	74.3	74.7	**76.7**	5.4
6	1	75.8	72.0	67.6	74.8	60.8	60.7	**68.6**	6.2
	2	77.3	70.3	89.2	83.0	66.8	64.2	**75.1**	8.9
	3	86.5	90.2	81.0	82.0	77.7	80.4	**82.9**	4.2
	Mean	79.8	77.5	79.2	80.0	68.4	68.4	**75.6**	6.4
24	1	69.6	63.6	75.5	71.5	64.9	60.4	**67.6**	5.1
	2	72.0	70.5	70.8	81.0	67.1	72.9	**72.4**	4.3
	3	65.7	81.9	73.9	77.5	66.5	65.9	**71.9**	6.3
	Mean	69.1	72.0	73.4	76.7	66.2	66.4	**70.6**	5.2
48	1	62.3	61.1	71.5	61.3	56.2	60.7	**62.2**	4.6
	2	64.3	72.1	78.7	74.9	71.3	68.2	**71.6**	4.6
	3	64.4	75.4	75.1	76.0	66.2	76.5	**72.3**	5.0
	Mean	63.7	69.5	75.1	70.7	64.6	68.4	**68.7**	4.7
72	1	57.3	63.2	68.0	64.4	53.7	57.0	**60.6**	5.0
	2	67.6	64.9	77.5	74.4	59.6	53.7	**66.3**	8.2
	3	71.6	77.0	74.5	72.3	64.1	72.4	**72.0**	4.0
	Mean	65.5	68.4	73.4	70.4	59.1	61.0	**66.3**	5.7
96	1	55.1	57.6	63.6	60.8	51.5	52.0	**56.8**	4.4
	2	53.4	70.9	75.6	70.2	54.4	49.0	**62.3**	10.3
	3	76.7	81.0	82.5	59.6	57.7	63.2	**70.1**	10.2
	Mean	61.8	69.9	73.9	63.6	54.5	54.7	**63.1**	8.3
120	1	49.3	53.0	54.6	56.6	47.7	49.0	**51.7**	3.2
	2	51.1	58.5	61.8	65.6	47.6	51.8	**56.1**	6.4
	3	47.1	63.0	70.0	66.9	56.5	56.3	**59.9**	7.6
	Mean	49.2	58.2	62.1	63.0	50.6	52.4	**55.9**	5.7

Table D.2-2 The retention coefficients (%) for sample 2 (1 row caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Bin filling	Purging time (min)	Time (h)	Replicate			Mean	SD
			1	2	3		
Grain	60	0	100.0	100.0	100.0	100.0	0.0
		1	104.1	101.2	97.5	**100.9**	2.7
		3	96.2	98.2	106.0	**100.2**	4.2
		6	92.2	95.3	108.5	**98.7**	7.1
		24	90.8	91.8	94.1	**92.2**	1.4
		48	83.6	90.8	94.6	**89.7**	4.5
		72	81.5	84.1	94.2	**86.6**	5.5
		96	76.3	79.0	91.8	**82.4**	6.7
		120	69.5	71.1	78.4	**73.0**	3.9

Table D.3-1 Measured carbon dioxide concentrations at six locations in the bin for sample 3 (no caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Time (h)	Replicate	Sampling Locations						Mean	SD
		1	2	3	4	5	6		
0	1	76.3	77.5	79.6	78.0	75.7	75.4	**77.1**	1.4
	2	78.8	71.0	72.3	72.3	78.6	76.2	**74.9**	3.2
	3	94.6	88.2	77.5	54.1	73.7	46.8	**72.5**	17.1
	Mean	**83.2**	**78.9**	**76.4**	**68.1**	**76.0**	**66.1**	**74.8**	7.2
1	1	75.0	86.3	70.6	70.7	70.4	70.2	**73.9**	5.8
	2	71.9	72.8	73.4	75.2	75.9	73.8	**73.8**	1.4
	3	73.2	77.8	73.2	73.7	61.8	63.3	**70.5**	5.8
	Mean	**73.3**	**78.9**	**72.4**	**73.2**	**69.4**	**69.1**	**72.7**	4.3
3	1	76.3	74.5	69.6	72.0	75.7	75.6	**73.9**	2.4
	2	73.8	71.2	70.8	72.6	79.5	75.2	**73.8**	3.0
	3	65.3	73.9	73.8	71.7	69.6	66.3	**70.1**	3.4
	Mean	**71.8**	**73.2**	**71.4**	**72.1**	**75.0**	**72.4**	**72.6**	2.9
6	1	75.4	72.8	67.4	70.1	72.4	74.1	**72.0**	2.6
	2	71.8	73.2	74.3	76.1	75.1	71.1	**73.6**	1.7
	3	67.3	71.7	69.4	68.0	68.9	65.3	**68.5**	2.0
	Mean	**71.5**	**72.6**	**70.3**	**71.4**	**72.2**	**70.2**	**71.4**	2.1
24	1	74.5	71.1	65.2	68.2	69.0	72.4	**70.1**	3.0
	2	69.6	71.3	73.7	74.4	66.7	66.9	**70.4**	3.0
	3	69.3	69.6	64.9	64.2	66.3	64.2	**66.4**	2.2
	Mean	**71.1**	**70.7**	**68.0**	**68.9**	**67.3**	**67.9**	**69.0**	2.8
48	1	62.6	67.6	66.8	64.5	62.4	69.3	**65.5**	2.6
	2	62.6	62.6	66.6	67.6	66.3	59.3	**64.2**	2.9
	3	53.8	57.5	56.0	55.6	54.3	53.4	**55.1**	1.4
	Mean	**59.7**	**62.6**	**63.2**	**62.5**	**61.0**	**60.7**	**61.6**	2.3
72	1	65.6	64.1	61.1	60.3	59.4	59.3	**61.7**	2.4
	2	59.2	59.7	61.2	63.7	62.6	57.7	**60.7**	2.0
	3	51.1	59.1	55.1	51.0	54.6	50.8	**53.6**	3.0
	Mean	**58.6**	**61.0**	**59.1**	**58.4**	**58.9**	**55.9**	**58.7**	2.5
96	1	58.5	60.5	55.4	56.2	56.5	54.3	**56.9**	2.1
	2	55.9	56.8	55.8	59.9	58.9	56.6	**57.3**	1.5
	3	46.1	49.7	50.0	41.0	43.6	46.2	**46.1**	3.2
	Mean	**53.5**	**55.7**	**53.7**	**52.4**	**53.0**	**52.4**	**53.4**	2.3
120	1	51.5	57.0	49.6	52.1	53.6	49.3	**52.2**	2.6
	2	52.6	54.0	50.4	56.0	55.2	55.5	**53.9**	2.0
	3	41.1	47.7	39.1	41.0	44.9	41.4	**42.5**	2.9
	Mean	**48.4**	**52.9**	**46.3**	**49.7**	**51.2**	**48.7**	**49.5**	2.5

Table D.3-2 The retention coefficients (%) for sample 3 (no caulking) in the 120-h test for purging time 60 min and bin filled with wheat at 11.8% m.c.

Bin filling	Purging time (min)	Time (h)	Replicate			Mean	SD
			1	2	3		
Grain	60	**0**	100.0	100.0	100.0	**100.0**	0.0
		1	95.8	98.6	97.2	**97.2**	1.1
		3	95.9	98.6	96.7	**97.1**	1.1
		6	93.5	98.3	94.4	**95.4**	2.1
		24	90.9	94.0	91.7	**92.2**	1.3
		48	85.0	85.7	76.0	**82.3**	4.4
		72	80.0	81.0	74.0	**78.4**	3.1
		96	73.8	76.5	63.6	**71.4**	5.6
		120	67.7	72.0	58.7	**66.2**	5.6