

**NFRC U-FACTOR, SHGC, VT, &  
CONDENSATION RESISTANCE  
COMPUTER SIMULATION REPORT**

*(Revised)*

**Rendered to:  
UNITED STATES ALUMINUM**

**SERIES/MODEL:  
4250 Curtain Wall**

| <i>Baseline Product for Validation Testing</i>    |                                                   |
|---------------------------------------------------|---------------------------------------------------|
| <b>Simulated Thermal Transmittance (U-Factor)</b> |                                                   |
|                                                   | <b>0.500</b>                                      |
| Unit Size:                                        | 78.86 inches wide by 78.74 inches high            |
| Glazing Layer 1:                                  | 1/4" - TiAC36 (e=0.034,#2)                        |
| Gap 1:                                            | 0.500 inch Aluminum Spacer (A1-D) - 100% Air Fill |
| Glazing Layer 2:                                  | 1/4" - Clear                                      |
| Gap 2:                                            |                                                   |
| Glazing Layer 3:                                  |                                                   |
| Notes:                                            | Physical Test was Anodized Aluminum               |

**Report Number: 94232.01-116-45**  
**Original Report Date: 11/20/09**  
**Expiration Date: 11/20/13**  
**Revised Report Date: 02/12/10**

**NFRC U-FACTOR, SHGC, VT, & CONDENSATION RESISTANCE**  
**COMPUTER SIMULATION REPORT**  
(Revised)

Rendered to:  
UNITED STATES ALUMINUM  
200 Singleton Drive  
Waxahachie, Texas 75165

Report Number: 94232.01-116-45  
Simulation Date: 11/20/09  
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**Project Summary:**

Architectural Testing, Inc. was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance\* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

*\*NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

**Standards:**

*NFRC 100-2004: Procedure for Determining Fenestration Product U-Factors*  
*NFRC 200-2004: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence*  
*NFRC 500-2004: Procedure for Determining Fenestration Product Condensation Resistance Values*

**Software:**

**Frame and Edge Modeling:** THERM 5.2.14  
**Center-of-Glass Modeling:** WINDOW 5.2.17  
**Total Product Calculations:** WINDOW 5.2.17  
**Spectral Data Library:** 17.1

**Simulations Specimen Description:**

**Series/Model:** 4250 Curtain Wall  
**Type:** Glazed Wall System , Curtain Wall  
**Frame Material:** AT Aluminum w/ Thermal Breaks - All Members (1" Skip 17" Debridge)  
**Sash Material:** NA Not Applicable  
**Standard Size:** 2000mm x 2000mm

**Technical Interpretations:**

- 1) TI-2003-12 Curtain Wall Modeling

**Modeling Assumptions:**

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.

**Specialty Products Table:**

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 5.2. The method gives overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

|       | No Dividers | Dividers < 1 | Dividers > 1 |
|-------|-------------|--------------|--------------|
| SHGC0 | 0.016476    | 0.019920     | 0.023150     |
| SHGC1 | 0.916571    | 0.814823     | 0.719394     |
| VT0   | 0.000000    | 0.000000     | 0.000000     |
| VT1   | 0.900095    | 0.794903     | 0.696244     |

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$

**Validation Matrix:**

The following products are part of a validation matrix. Only one is required for validation

| <i>Product Line</i> | <i>Report Number</i> |
|---------------------|----------------------|
| None                | -                    |

### Spacer Option Description

| <i>Spacer Type</i>       | <i>Sealant</i>  |                  |                  |
|--------------------------|-----------------|------------------|------------------|
|                          | <i>Primary</i>  | <i>Secondary</i> | <i>Desiccant</i> |
| Standard Aluminum Spacer | Butyl Rubber    | Butyl Rubber     | Yes              |
| Intercept Spacer         | Butyl Rubber    | Butyl Rubber     | Yes              |
| Stainless Steel Spacer   | Polyisobutylene | Polyurethane     | Yes              |
| Edgetech Super Spacer    | Butyl Rubber    | None             | No               |

### Grid Option Description

| <i>Grid Size</i> | <i>Grid Type</i> | <i>Grid Pattern</i> |
|------------------|------------------|---------------------|
| None             | -                | -                   |

### Reinforcement Option Description

| <i>Location</i> | <i>Material</i> |
|-----------------|-----------------|
| None            | -               |

### Gas Filling Technique Description

| <i>Fill Type</i> | <i>Method</i>      |
|------------------|--------------------|
| 90% Argon        | Single Probe Timed |

### Edge-of-Glass Construction

| <i>Interior Condition</i> |  |
|---------------------------|--|
| EPDM                      |  |
| <i>Exterior Condition</i> |  |
| EPDM                      |  |

### Weatherstripping

| <i>Type</i> | <i>Quantity</i> | <i>Location</i> |
|-------------|-----------------|-----------------|
| None        | -               | -               |

### Frame/Sash Materials Finish

| <i>Interior</i>  |  |
|------------------|--|
| Painted Aluminum |  |
| <i>Exterior</i>  |  |
| Painted Aluminum |  |

NFRC 100/200/500 Summary Sheet  
4250 Curtain Wall

| ID | Pane Thickness 1        | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                     | Grid Type |
|----|-------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|----------------------------|-----------|
|    | U-Factor                |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation<br>Resistance |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
| 1  | clr / air / clr         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.225                   | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      |                                                       | CL   | A1-D                       | N         |
|    | U-Factor 0.60           |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      | CR 38                      |           |
| 2  | clr / arg / clr         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.225                   | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    |                                                       | CL   | A1-D                       | N         |
|    | U-Factor 0.58           |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      | CR 39                      |           |
| 3  | SB60 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.46           |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 45                      |           |
|    | clr / air / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.46           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 45                      |           |
| 4  | SB60 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#2)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.42           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                      |           |
|    | clr / arg / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#3)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.42           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                      |           |
| 5  | SB60 on ATL / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | GR   | A1-D                       | N         |
|    | U-Factor 0.46           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 45                      |           |
|    | Atlantica / air / SB60  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | A1-D                       | N         |
|    | U-Factor 0.46           |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 45                      |           |
| 6  | SB70XL / air / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#2)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 45                      |           |
|    | clr / air / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#3)                                             | CL   | A1-D                       | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 45                      |           |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer | Grid Type               |  |
|----|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|--------|-------------------------|--|
|    | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      |        | Condensation Resistance |  |
| 7  | SB70XL / arg / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      |        | CR 47                   |  |
|    | clr / arg / SB70XL |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      |        | CR 47                   |  |
| 8  | VE185 / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.088(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.47      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      |        | CR 44                   |  |
|    | clr / air / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.088(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.47      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      |        | CR 44                   |  |
| 9  | VE185 / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.088(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.44      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      |        | CR 46                   |  |
|    | clr / arg / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.088(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.44      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      |        | CR 46                   |  |
| 10 | VE12M / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.040(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.46      |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 44                   |  |
|    | clr / air / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.040(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.46      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 44                   |  |
| 11 | VE12M / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.040(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.42      |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 47                   |  |
|    | clr / arg / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.040(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.42      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 47                   |  |



| ID | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
| 12 | TiAC36 / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.034(#2)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.46             | SHGC (N)                                                      |                  |             |                  | 0.34     | VT (N)                                                |      | 0.59                    | CR        |
|    | clr / air / TiAC36 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR      | 0.034(#3)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.46             | SHGC (N)                                                      |                  |             |                  | 0.42     | VT (N)                                                |      | 0.59                    | CR        |
| 13 | TiAC36 / arg / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.034(#2)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.42             | SHGC (N)                                                      |                  |             |                  | 0.34     | VT (N)                                                |      | 0.59                    | CR        |
|    | clr / arg / TiAC36 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90    | 0.034(#3)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.42             | SHGC (N)                                                      |                  |             |                  | 0.42     | VT (N)                                                |      | 0.59                    | CR        |
| 14 | TiAC23 / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.041(#2)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.46             | SHGC (N)                                                      |                  |             |                  | 0.23     | VT (N)                                                |      | 0.34                    | CR        |
|    | clr / air / TiAC23 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | AIR      | 0.041(#3)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.46             | SHGC (N)                                                      |                  |             |                  | 0.43     | VT (N)                                                |      | 0.34                    | CR        |
| 15 | TiAC23 / arg / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.041(#2)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.42             | SHGC (N)                                                      |                  |             |                  | 0.22     | VT (N)                                                |      | 0.34                    | CR        |
|    | clr / arg / TiAC23 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | ARG90    | 0.041(#3)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.42             | SHGC (N)                                                      |                  |             |                  | 0.44     | VT (N)                                                |      | 0.34                    | CR        |
| 16 | EADV / air / clr   |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.157(#2)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.49             | SHGC (N)                                                      |                  |             |                  | 0.57     | VT (N)                                                |      | 0.66                    | CR        |
|    | clr / air / EADV   |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR      | 0.157(#3)                                             | CL   | A1-D                    | N         |
|    | U-Factor           |             | 0.49             | SHGC (N)                                                      |                  |             |                  | 0.62     | VT (N)                                                |      | 0.66                    | CR        |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1       | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer | Grid Type               |  |
|----|------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|--------|-------------------------|--|
|    | U-Factor               |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      |        | Condensation Resistance |  |
| 17 | EADV / arg / clr       |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.222                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.157(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.46          |             |                  | SHGC (N) 0.57                                                 |                  |             |                  |          | VT (N) 0.66                                           |      |        | CR 45                   |  |
|    | clr / arg / EADV       |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90    | 0.157(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.46          |             |                  | SHGC (N) 0.62                                                 |                  |             |                  |          | VT (N) 0.66                                           |      |        | CR 45                   |  |
| 18 | S100 / air / clr       |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.087(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.47          |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.69                                           |      |        | CR 44                   |  |
|    | clr / air / S100       |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.087(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.47          |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.69                                           |      |        | CR 44                   |  |
| 19 | S80 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.45          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      |        | CR 45                   |  |
|    | clr / air / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.45          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      |        | CR 45                   |  |
| 20 | S80 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#2)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.42          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      |        | CR 47                   |  |
|    | clr / arg / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#3)                                             | CL   | A1-D   | N                       |  |
|    | U-Factor 0.42          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      |        | CR 47                   |  |
| 21 | Atlantica / air / SB60 |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | A1-D   | N                       |  |
|    | U-Factor 0.46          |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      |        | CR 45                   |  |
| 22 | clr / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |  |
|    | 0.225                  | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      |                                                       | CL   | CU-S   | N                       |  |
|    | U-Factor 0.60          |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      |        | CR 42                   |  |



**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1        | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer | Grid Type               |
|----|-------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|--------|-------------------------|
|    | U-Factor                |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      |        | Condensation Resistance |
| 23 | clr / arg / clr         |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.225                   | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    |                                                       | CL   | CU-S   | N                       |
|    | U-Factor 0.58           |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      |        | CR 43                   |
| 24 | SB60 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 49                   |
|    | clr / air / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 49                   |
| 25 | SB60 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#2)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 49                   |
|    | clr / arg / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#3)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      |        | CR 49                   |
| 26 | SB60 on ATL / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | GR   | CU-S   | N                       |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.48                                           |      |        | CR 49                   |
|    | Atlantica / air / SB60  |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | CU-S   | N                       |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      |        | CR 49                   |
| 27 | SB70XL / air / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#2)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      |        | CR 49                   |
|    | clr / air / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#3)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      |        | CR 49                   |
| 28 | SB70XL / arg / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |        |                         |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#2)                                             | CL   | CU-S   | N                       |
|    | U-Factor 0.40           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      |        | CR 49                   |

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4250 Curtain Wall

| ID | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
|    | clr / arg / SB70XL |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.40      |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 29 | VE185 / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.088(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.46      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / air / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.088(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.46      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 30 | VE185 / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.088(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.43      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.088(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.43      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 31 | VE12M / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.040(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / air / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.040(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 32 | VE12M / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.040(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.040(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 33 | TiAC36 / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.034(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 49                   |           |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
|    | clr / air / TiAC36 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR      | 0.034(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 34 | TiAC36 / arg / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.034(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / TiAC36 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90    | 0.034(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 35 | TiAC23 / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.041(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.34                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / air / TiAC23 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | AIR      | 0.041(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.43                                                 |                  |             |                  |          | VT (N) 0.34                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 36 | TiAC23 / arg / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.041(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.22                                                 |                  |             |                  |          | VT (N) 0.34                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / TiAC23 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | ARG90    | 0.041(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.44                                                 |                  |             |                  |          | VT (N) 0.34                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 37 | EADV / air / clr   |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.157(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.48      |             |                  | SHGC (N) 0.57                                                 |                  |             |                  |          | VT (N) 0.66                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / air / EADV   |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR      | 0.157(#3)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.48      |             |                  | SHGC (N) 0.62                                                 |                  |             |                  |          | VT (N) 0.66                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 38 | EADV / arg / clr   |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.157(#2)                                             | CL   | CU-S                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.57                                                 |                  |             |                  |          | VT (N) 0.66                                           |      | CR 49                   |           |
|    |                    |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |

NFRC 100/200/500 Summary Sheet  
4250 Curtain Wall

| ID       | Pane Thickness 1       | Gap Width 1 | Pane Thickness 2                                              | Gap Width 2 | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                     | Grid Type |    |
|----------|------------------------|-------------|---------------------------------------------------------------|-------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|----------------------------|-----------|----|
| U-Factor |                        |             | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |             |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation<br>Resistance |           |    |
| 39       | clr / arg / EADV       |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.222                                                         |             |                  |             |                  | ARG90    | 0.157(#3)                                             | CL   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.45                                                          | SHGC (N)    |                  |             |                  | 0.62     | VT (N)                                                |      | 0.66                       | CR        | 49 |
|          | S100 / air / clr       |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
| 40       | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | AIR      | 0.087(#2)                                             | CL   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.46                                                          | SHGC (N)    |                  |             |                  | 0.51     | VT (N)                                                |      | 0.69                       | CR        | 49 |
|          | clr / air / S100       |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | AIR      | 0.087(#3)                                             | CL   | CU-S                       | N         |    |
| 41       | U-Factor               |             | 0.46                                                          | SHGC (N)    |                  |             |                  | 0.54     | VT (N)                                                |      | 0.69                       | CR        | 49 |
|          | S80 / air / clr        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | AIR      | 0.024(#2)                                             | CL   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.44                                                          | SHGC (N)    |                  |             |                  | 0.23     | VT (N)                                                |      | 0.43                       | CR        | 49 |
| 42       | clr / air / S80        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | AIR      | 0.024(#3)                                             | CL   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.44                                                          | SHGC (N)    |                  |             |                  | 0.28     | VT (N)                                                |      | 0.43                       | CR        | 49 |
|          | S80 / arg / clr        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
| 43       | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | ARG90    | 0.024(#2)                                             | CL   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.41                                                          | SHGC (N)    |                  |             |                  | 0.23     | VT (N)                                                |      | 0.43                       | CR        | 49 |
|          | clr / arg / S80        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | ARG90    | 0.024(#3)                                             | CL   | CU-S                       | N         |    |
| 44       | U-Factor               |             | 0.41                                                          | SHGC (N)    |                  |             |                  | 0.28     | VT (N)                                                |      | 0.43                       | CR        | 49 |
|          | Atlantica / air / SB60 |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.223                  | 0.500       | 0.223                                                         |             |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | CU-S                       | N         |    |
|          | U-Factor               |             | 0.45                                                          | SHGC (N)    |                  |             |                  | 0.29     | VT (N)                                                |      | 0.48                       | CR        | 49 |
| 45       | clr / air / clr        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
|          | 0.225                  | 0.500       | 0.225                                                         |             |                  |             |                  | AIR      |                                                       | CL   | SS-D                       | N         |    |
|          | U-Factor               |             | 0.60                                                          | SHGC (N)    |                  |             |                  | 0.65     | VT (N)                                                |      | 0.71                       | CR        | 40 |
|          | clr / arg / clr        |             |                                                               |             |                  |             |                  |          |                                                       |      |                            |           |    |
| 46       | 0.225                  | 0.500       | 0.225                                                         |             |                  |             |                  | ARG90    |                                                       | CL   | SS-D                       | N         |    |
|          | U-Factor               |             | 0.58                                                          | SHGC (N)    |                  |             |                  | 0.65     | VT (N)                                                |      | 0.71                       | CR        | 41 |



| ID | Pane Thickness 1        | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|-------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor                |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
| 45 | SB60 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                   |           |
|    | clr / air / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                   |           |
| 46 | SB60 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    | clr / arg / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
| 47 | SB60 on ATL / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | GR   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 47                   |           |
|    | Atlantica / air / SB60  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 47                   |           |
| 48 | SB70XL / air / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 47                   |           |
|    | clr / air / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 47                   |           |
| 49 | SB70XL / arg / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 49                   |           |
|    | clr / arg / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 49                   |           |

## NFRC 100/200/500 Summary Sheet

### 4250 Curtain Wall

| ID | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
| 50 | VE185 / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.088(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.47      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 46                   |           |
|    | clr / air / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.088(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.47      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 46                   |           |
| 51 | VE185 / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.088(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.43      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 48                   |           |
|    | clr / arg / VE185  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.088(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.43      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 48                   |           |
| 52 | VE12M / air / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.040(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                   |           |
|    | clr / air / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.040(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 47                   |           |
| 53 | VE12M / arg / clr  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    | 0.040(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 48                   |           |
|    | clr / arg / VE12M  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.040(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.41      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 48                   |           |
| 54 | TiAC36 / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.034(#2)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 47                   |           |
|    | clr / air / TiAC36 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR      | 0.034(#3)                                             | CL   | SS-D                    | N         |
|    | U-Factor 0.45      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.59                                           |      | CR 47                   |           |



## NFRC 100/200/500 Summary Sheet

### 4250 Curtain Wall

| ID            | Pane Thickness 1      | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill    | Low-e (Surface#)                                      | Tint  | Spacer                     | Grid Type |
|---------------|-----------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|-------------|-------------------------------------------------------|-------|----------------------------|-----------|
|               | U-Factor              |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |             | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |       | Condensation<br>Resistance |           |
|               |                       |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
| 55            | TiAC36 / arg / clr    |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.222                 | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.034(#2)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.41         |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |             | VT (N) 0.59                                           |       | CR 49                      |           |
|               | clr / arg / TiAC36    |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225                 | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90       | 0.034(#3)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.41         |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |             | VT (N) 0.59                                           |       | CR 49                      |           |
|               | 56 TiAC23 / air / clr |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.228                 | 0.500       | 0.225            |                                                               |                  |             |                  | AIR         | 0.041(#2)                                             | CL    | SS-D                       | N         |
| U-Factor 0.45 |                       |             | SHGC (N) 0.23    |                                                               |                  |             |                  | VT (N) 0.34 |                                                       | CR 47 |                            |           |
|               | clr / air / TiAC23    |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225                 | 0.500       | 0.228            |                                                               |                  |             |                  | AIR         | 0.041(#3)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.45         |             |                  | SHGC (N) 0.43                                                 |                  |             |                  |             | VT (N) 0.34                                           |       | CR 47                      |           |
|               | 57 TiAC23 / arg / clr |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.228                 | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.041(#2)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.41         |             |                  | SHGC (N) 0.22                                                 |                  |             |                  |             | VT (N) 0.34                                           |       | CR 48                      |           |
|               | clr / arg / TiAC23    |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225                 | 0.500       | 0.228            |                                                               |                  |             |                  | ARG90       | 0.041(#3)                                             | CL    | SS-D                       | N         |
| U-Factor 0.41 |                       |             | SHGC (N) 0.44    |                                                               |                  |             |                  | VT (N) 0.34 |                                                       | CR 48 |                            |           |
| 58            | EADV / air / clr      |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.222                 | 0.500       | 0.223            |                                                               |                  |             |                  | AIR         | 0.157(#2)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.48         |             |                  | SHGC (N) 0.57                                                 |                  |             |                  |             | VT (N) 0.66                                           |       | CR 45                      |           |
|               | clr / air / EADV      |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.223                 | 0.500       | 0.222            |                                                               |                  |             |                  | AIR         | 0.157(#3)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.48         |             |                  | SHGC (N) 0.62                                                 |                  |             |                  |             | VT (N) 0.66                                           |       | CR 45                      |           |
|               | 59 EADV / arg / clr   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.222                 | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90       | 0.157(#2)                                             | CL    | SS-D                       | N         |
| U-Factor 0.45 |                       |             | SHGC (N) 0.57    |                                                               |                  |             |                  | VT (N) 0.66 |                                                       | CR 47 |                            |           |
|               | clr / arg / EADV      |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.223                 | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90       | 0.157(#3)                                             | CL    | SS-D                       | N         |
|               | U-Factor 0.45         |             |                  | SHGC (N) 0.62                                                 |                  |             |                  |             | VT (N) 0.66                                           |       | CR 47                      |           |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1       | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                     | Grid Type |
|----|------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|----------------------------|-----------|
|    | U-Factor               |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation<br>Resistance |           |
| 60 | S100 / air / clr       |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.087(#2)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.47          |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.69                                           |      | CR 46                      |           |
|    | clr / air / S100       |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.087(#3)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.47          |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.69                                           |      | CR 46                      |           |
| 61 | S80 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#2)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.45          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 47                      |           |
|    | clr / air / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#3)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.45          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 47                      |           |
| 62 | S80 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#2)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.41          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 49                      |           |
|    | clr / arg / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#3)                                             | CL   | SS-D                       | N         |
|    | U-Factor 0.41          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 49                      |           |
| 63 | Atlantica / air / SB60 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | SS-D                       | N         |
|    | U-Factor 0.45          |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 47                      |           |
|    |                        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
| 64 | clr / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.225                  | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      |                                                       | CL   | ZF-S                       | N         |
|    | U-Factor 0.59          |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      | CR 42                      |           |
| 65 | clr / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.225                  | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90    |                                                       | CL   | ZF-S                       | N         |
|    | U-Factor 0.57          |             |                  | SHGC (N) 0.65                                                 |                  |             |                  |          | VT (N) 0.71                                           |      | CR 44                      |           |
| 66 | SB60 / air / clr       |             |                  |                                                               |                  |             |                  |          |                                                       |      |                            |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | CL   | ZF-S                       | N         |
|    | U-Factor 0.44          |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                      |           |



**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1        | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|-------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor                |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
|    | clr / air / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 67 | SB60 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 50                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / SB60        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.035(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40           |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |          | VT (N) 0.63                                           |      | CR 50                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 68 | SB60 on ATL / air / clr |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#2)                                             | GR   | ZF-S                    | N         |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | Atlantica / air / SB60  |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | ZF-S                    | N         |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 69 | SB70XL / air / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / air / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.018(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.44           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 70 | SB70XL / arg / clr      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40           |             |                  | SHGC (N) 0.26                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 50                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | clr / arg / SB70XL      |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.018(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40           |             |                  | SHGC (N) 0.35                                                 |                  |             |                  |          | VT (N) 0.58                                           |      | CR 50                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
| 71 | VE185 / air / clr       |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                   | 0.500       | 0.225            |                                                               |                  |             |                  | AIR      | 0.088(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.46           |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |          | VT (N) 0.68                                           |      | CR 49                   |           |
|    |                         |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |

NFRC 100/200/500 Summary Sheet  
4250 Curtain Wall

| ID            | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill    | Low-e (Surface#)                                      | Tint | Spacer | Grid Type                  |  |
|---------------|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|-------------|-------------------------------------------------------|------|--------|----------------------------|--|
|               | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |             | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      |        | Condensation<br>Resistance |  |
|               | clr / air / VE185  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR         | 0.088(#3)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.46      |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |             | VT (N) 0.68                                           |      |        | CR 49                      |  |
|               | VE185 / arg / clr  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
| 72            | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.088(#2)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.42      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |             | VT (N) 0.68                                           |      |        | CR 50                      |  |
|               | clr / arg / VE185  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90       | 0.088(#3)                                             | CL   | ZF-S   | N                          |  |
| U-Factor 0.42 |                    |             | SHGC (N) 0.54    |                                                               |                  |             |                  | VT (N) 0.68 |                                                       |      | CR 50  |                            |  |
| 73            | VE12M / air / clr  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR         | 0.040(#2)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.44      |             |                  | SHGC (N) 0.36                                                 |                  |             |                  |             | VT (N) 0.63                                           |      |        | CR 49                      |  |
|               | clr / air / VE12M  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR         | 0.040(#3)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.44      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |             | VT (N) 0.63                                           |      |        | CR 49                      |  |
|               | VE12M / arg / clr  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.223              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.040(#2)                                             | CL   | ZF-S   | N                          |  |
| U-Factor 0.40 |                    |             | SHGC (N) 0.35    |                                                               |                  |             |                  | VT (N) 0.63 |                                                       |      | CR 50  |                            |  |
| 74            | clr / arg / VE12M  |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.225              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90       | 0.040(#3)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.40      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |             | VT (N) 0.63                                           |      |        | CR 50                      |  |
|               | TiAC36 / air / clr |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR         | 0.034(#2)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.44      |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |             | VT (N) 0.59                                           |      |        | CR 49                      |  |
|               | clr / air / TiAC36 |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR         | 0.034(#3)                                             | CL   | ZF-S   | N                          |  |
| U-Factor 0.44 |                    |             | SHGC (N) 0.42    |                                                               |                  |             |                  | VT (N) 0.59 |                                                       |      | CR 49  |                            |  |
| 76            | TiAC36 / arg / clr |             |                  |                                                               |                  |             |                  |             |                                                       |      |        |                            |  |
|               | 0.222              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.034(#2)                                             | CL   | ZF-S   | N                          |  |
|               | U-Factor 0.40      |             |                  | SHGC (N) 0.34                                                 |                  |             |                  |             | VT (N) 0.59                                           |      |        | CR 50                      |  |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID            | Pane Thickness 1   | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill    | Low-e (Surface#)                                      | Tint  | Spacer                     | Grid Type |
|---------------|--------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|-------------|-------------------------------------------------------|-------|----------------------------|-----------|
|               | U-Factor           |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |             | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |       | Condensation<br>Resistance |           |
|               | clr / arg / TiAC36 |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225              | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90       | 0.034(#3)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.40      |             |                  | SHGC (N) 0.42                                                 |                  |             |                  |             | VT (N) 0.59                                           |       | CR 50                      |           |
|               | TiAC23 / air / clr |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
| 77            | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | AIR         | 0.041(#2)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.44      |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |             | VT (N) 0.34                                           |       | CR 49                      |           |
|               | clr / air / TiAC23 |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | AIR         | 0.041(#3)                                             | CL    | ZF-S                       | N         |
| U-Factor 0.44 |                    |             | SHGC (N) 0.43    |                                                               |                  |             |                  | VT (N) 0.34 |                                                       | CR 49 |                            |           |
| 78            | TiAC23 / arg / clr |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.228              | 0.500       | 0.225            |                                                               |                  |             |                  | ARG90       | 0.041(#2)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.41      |             |                  | SHGC (N) 0.22                                                 |                  |             |                  |             | VT (N) 0.34                                           |       | CR 50                      |           |
|               | clr / arg / TiAC23 |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.225              | 0.500       | 0.228            |                                                               |                  |             |                  | ARG90       | 0.041(#3)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.41      |             |                  | SHGC (N) 0.44                                                 |                  |             |                  |             | VT (N) 0.34                                           |       | CR 50                      |           |
|               | EADV / air / clr   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.222              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR         | 0.157(#2)                                             | CL    | ZF-S                       | N         |
| U-Factor 0.47 |                    |             | SHGC (N) 0.57    |                                                               |                  |             |                  | VT (N) 0.66 |                                                       | CR 48 |                            |           |
| 79            | clr / air / EADV   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.223              | 0.500       | 0.222            |                                                               |                  |             |                  | AIR         | 0.157(#3)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.47      |             |                  | SHGC (N) 0.62                                                 |                  |             |                  |             | VT (N) 0.66                                           |       | CR 48                      |           |
|               | EADV / arg / clr   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
| 80            | 0.222              | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90       | 0.157(#2)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.44      |             |                  | SHGC (N) 0.57                                                 |                  |             |                  |             | VT (N) 0.66                                           |       | CR 49                      |           |
|               | clr / arg / EADV   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.223              | 0.500       | 0.222            |                                                               |                  |             |                  | ARG90       | 0.157(#3)                                             | CL    | ZF-S                       | N         |
| U-Factor 0.44 |                    |             | SHGC (N) 0.62    |                                                               |                  |             |                  | VT (N) 0.66 |                                                       | CR 49 |                            |           |
| 81            | S100 / air / clr   |             |                  |                                                               |                  |             |                  |             |                                                       |       |                            |           |
|               | 0.223              | 0.500       | 0.223            |                                                               |                  |             |                  | AIR         | 0.087(#2)                                             | CL    | ZF-S                       | N         |
|               | U-Factor 0.46      |             |                  | SHGC (N) 0.51                                                 |                  |             |                  |             | VT (N) 0.69                                           |       | CR 49                      |           |

**NFRC 100/200/500 Summary Sheet**  
**4250 Curtain Wall**

| ID | Pane Thickness 1       | Gap Width 1 | Pane Thickness 2 | Gap Width 2                                                   | Pane Thickness 3 | Gap Width 3 | Pane Thickness 4 | Gap Fill | Low-e (Surface#)                                      | Tint | Spacer                  | Grid Type |
|----|------------------------|-------------|------------------|---------------------------------------------------------------|------------------|-------------|------------------|----------|-------------------------------------------------------|------|-------------------------|-----------|
|    | U-Factor               |             |                  | Solar Heat Gain Coefficient (SHGC)<br>Grids (None / <1 / >=1) |                  |             |                  |          | Visible Transmittance (VT)<br>Grids (None / <1 / >=1) |      | Condensation Resistance |           |
|    | clr / air / S100       |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.087(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.46          |             |                  | SHGC (N) 0.54                                                 |                  |             |                  |          | VT (N) 0.69                                           |      | CR 49                   |           |
| 82 | S80 / air / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.44          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 49                   |           |
|    | clr / air / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.024(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.44          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 49                   |           |
| 83 | S80 / arg / clr        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#2)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40          |             |                  | SHGC (N) 0.23                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 50                   |           |
|    | clr / arg / S80        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | ARG90    | 0.024(#3)                                             | CL   | ZF-S                    | N         |
|    | U-Factor 0.40          |             |                  | SHGC (N) 0.28                                                 |                  |             |                  |          | VT (N) 0.43                                           |      | CR 50                   |           |
| 84 | Atlantica / air / SB60 |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |
|    | 0.223                  | 0.500       | 0.223            |                                                               |                  |             |                  | AIR      | 0.035(#3)                                             | GR   | ZF-S                    | N         |
|    | U-Factor 0.44          |             |                  | SHGC (N) 0.29                                                 |                  |             |                  |          | VT (N) 0.48                                           |      | CR 49                   |           |
|    |                        |             |                  |                                                               |                  |             |                  |          |                                                       |      |                         |           |

The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy.

Architectural Testing is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results.

Detailed drawings, simulation data files, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire. Results obtained are simulated values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the product simulated. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

REVIEWED BY:

---

Jason A. Mitzel  
Simulation Technician

---

Kristen L. Livelsberger  
Senior Simulation Technician  
Simulator-In-Responsible-Charge

JAM:jam  
94232.01-116-45

Attachments (pages):                      This report is complete only when all attachments listed are included.  
Appendix A: Drawings and Bills of Material (14)

### Revision Log

| <b><u>Rev. #</u></b> | <b><u>Date</u></b> | <b><u>Page(s)</u></b> | <b><u>Revision(s)</u></b>                                       |
|----------------------|--------------------|-----------------------|-----------------------------------------------------------------|
| .01R0                | 11/20/2009         | All                   | Original Report Issued                                          |
| .01R1                | 2/12/2010          | Page 1                | Corrected Frame Type<br>Corrected Intercept Spacer Sealant Type |



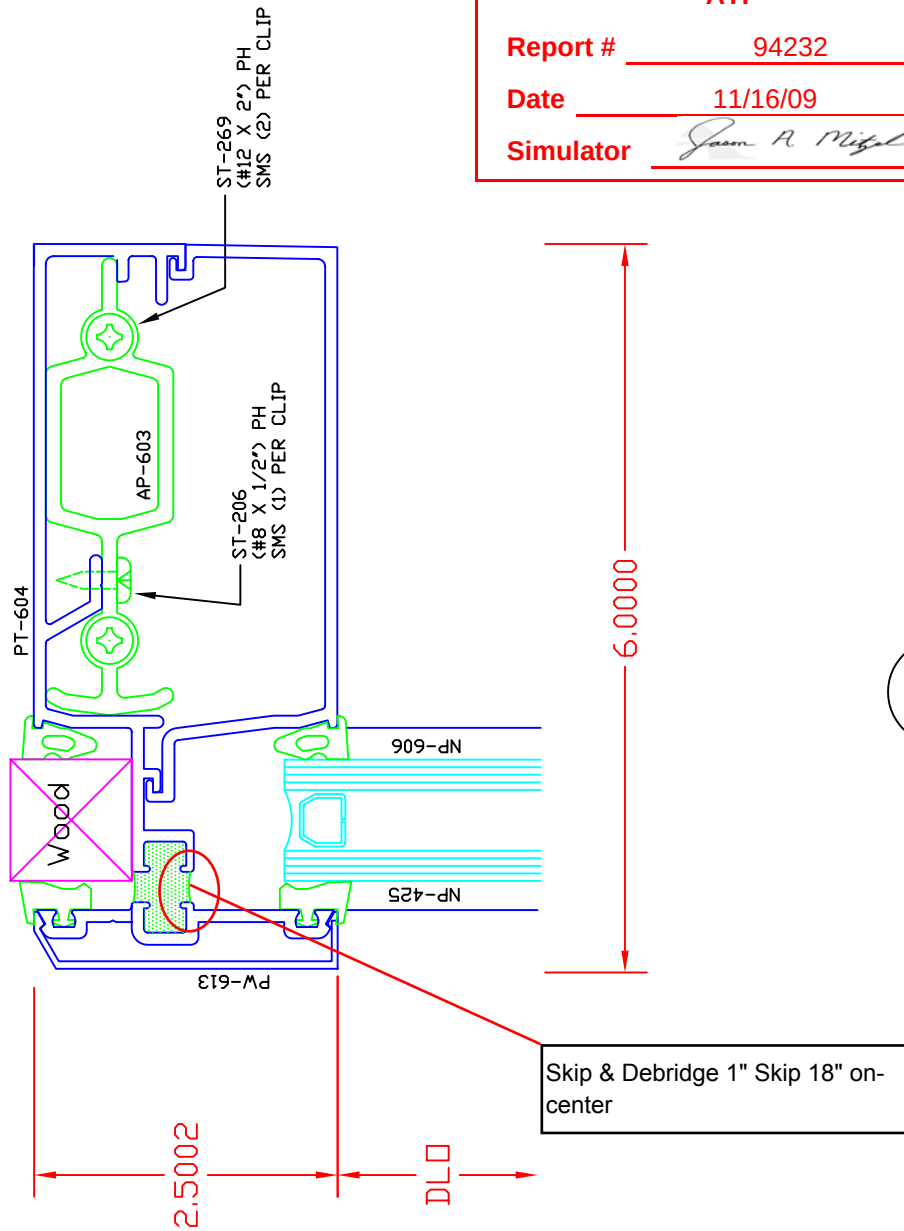
All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

## **Appendix A**

94232.01-116-45

| SYM | REVISION | DATE | BY |
|-----|----------|------|----|
|     |          |      |    |
|     |          |      |    |
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|                                                                                                                    |                        |                |                             |
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| DRAWN BY<br>DCW                                                                                                    | SYSTEM<br>CURTAIN WALL | SERIES<br>4250 | DESCRIPTION<br>CURTAIN WALL |
| DATE<br>03.12.09                                                                                                   | APPROVED BY            | DRAWING NO.    | SHEET                       |
| SCALE<br>FULL                                                                                                      | USA-3116               | 2              | OF 6                        |



**ATI**

**Report #** 94232

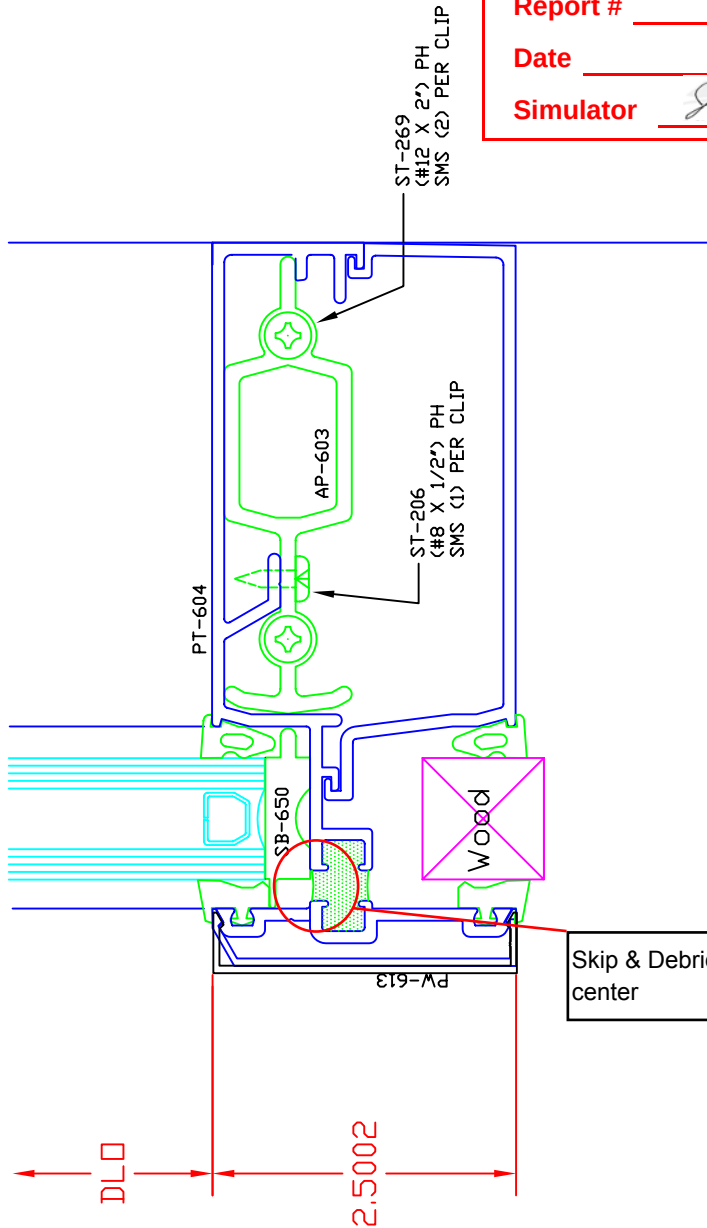
**Date** 11/16/09

**Simulator** *Jason R. Mifflin*

2



| SYM | REVISION | DATE | BY |
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**ATI**

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**Date** 11/16/09

**Simulator** Jason A. Mital

3

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| DRAWN BY<br>DCW                                                                                                   | DATE<br>03.12.09        | APPROVED BY                                 | DESCRIPTION<br>DETAILS |
| SCALE<br>FULL                                                                                                     | DRAWING NO.<br>USA-3116 | SHEET<br>3 OF 6                             |                        |

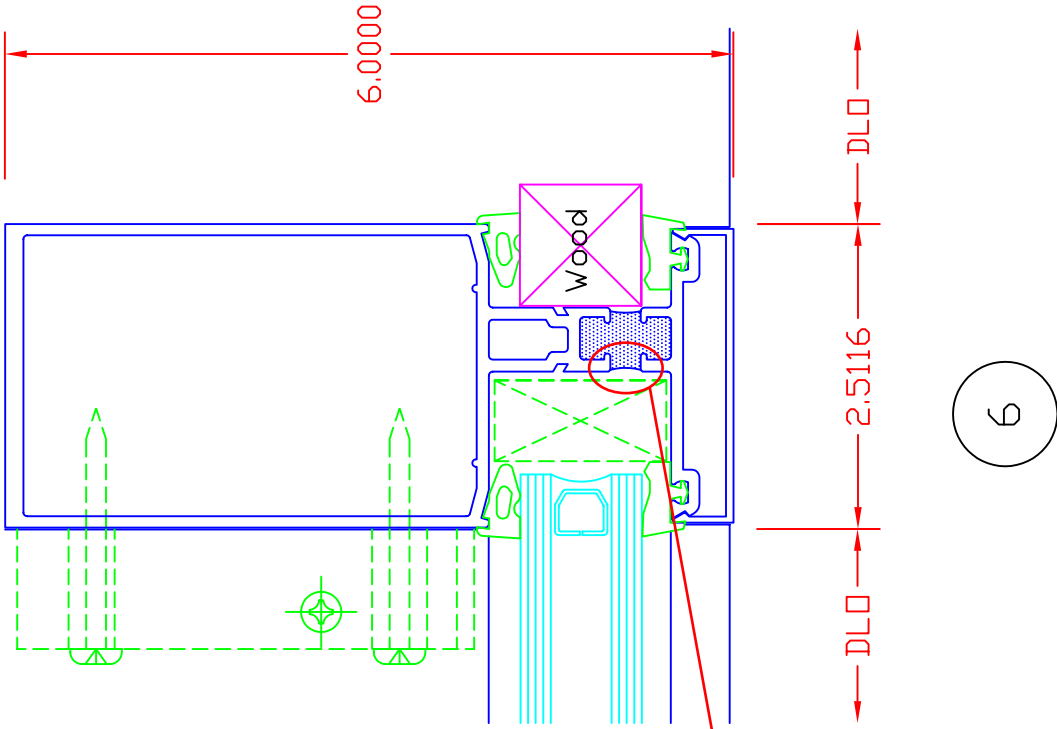
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| DRAWN BY                                                                                                           | SYSTEM      | SERIES | DESCRIPTION  |
| DCW                                                                                                                |             | 4250   | Curtain Wall |
| DATE                                                                                                               |             |        |              |
| 03.12.09                                                                                                           |             |        |              |
| APPROVED BY                                                                                                        |             |        |              |
|                                                                                                                    |             |        |              |
| SCALE                                                                                                              | DRAWING NO. | SHEET  |              |
| FULL                                                                                                               | USA-3116    | 6 OF 6 |              |



**ATI**

**Report #** 94232

**Date** 11/16/09

**Simulator** Jason R. Mifflin

Skip & Debridge 1" Skip 18" on-center

6

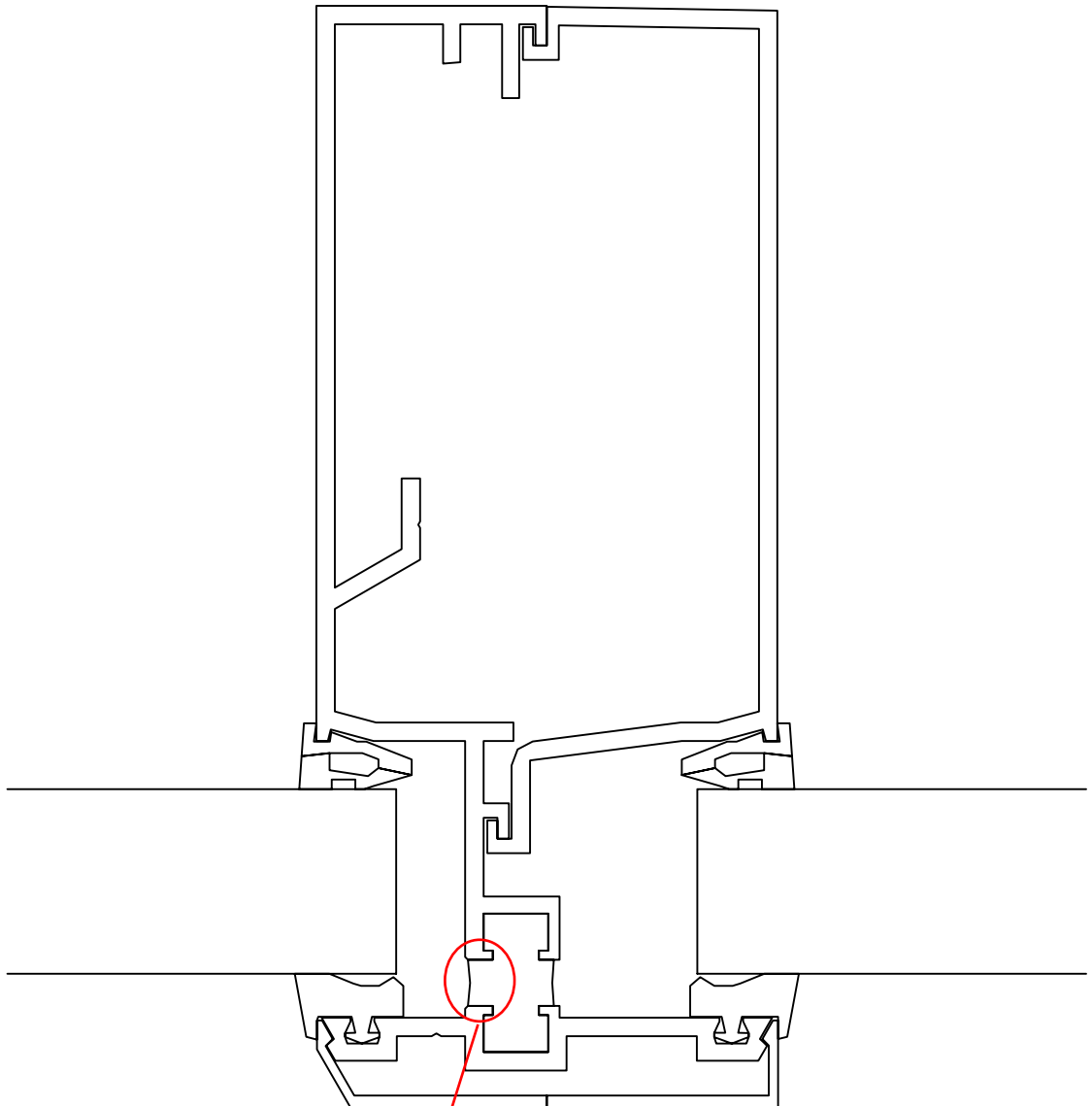
Horizontal Mullion

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Report # 94232

Date 11/16/09

Simulator *Jason A. Miguel*



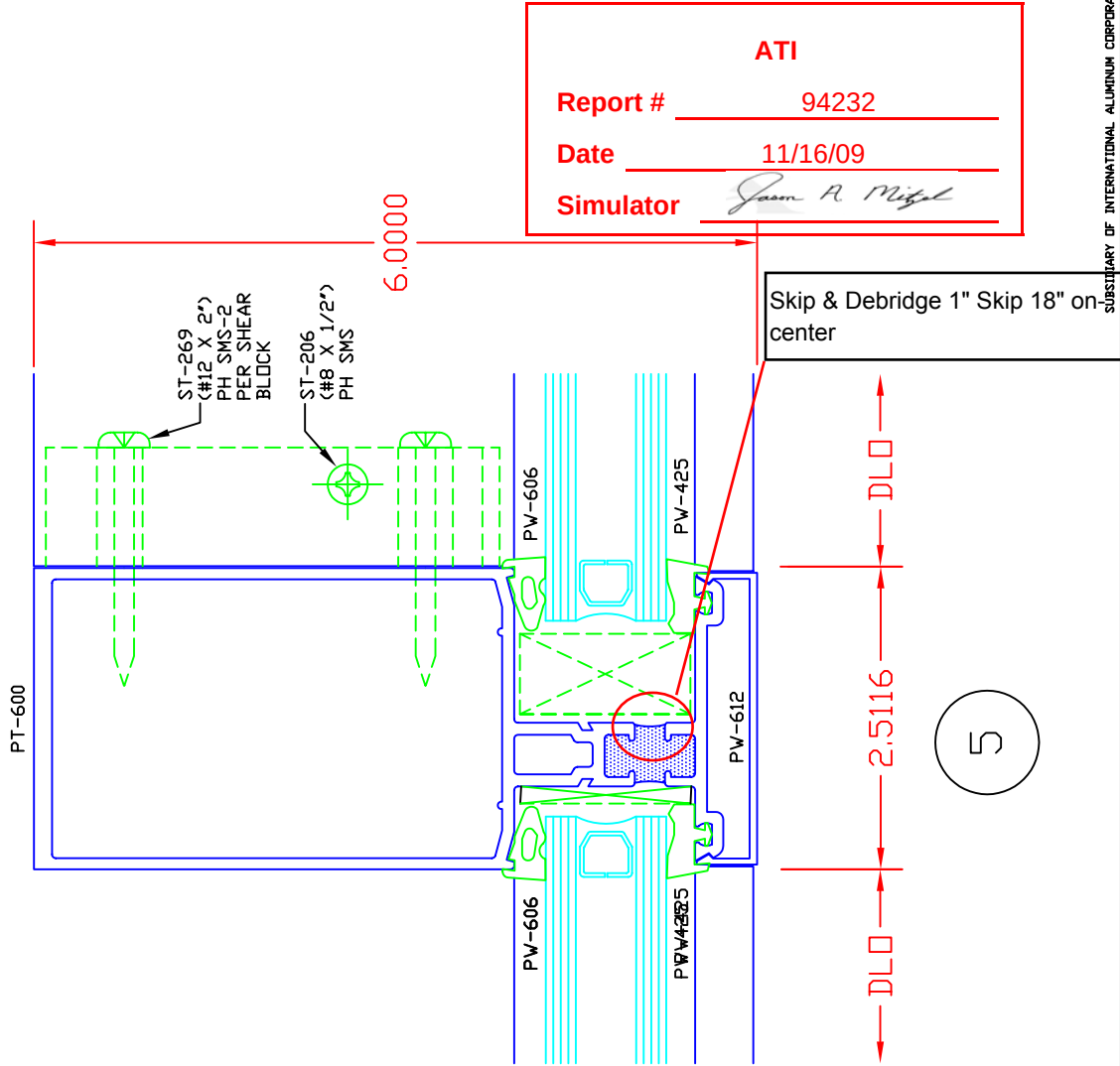
Skip & Debridge 1" Skip 18" on-center

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| DRAWN BY<br>DCW                                                                                                   | SYSTEM<br>SERIES<br>4250<br>Curtain Wall |
| DATE<br>03.12.09                                                                                                  | DESCRIPTION<br>DETAILS                   |
| APPROVED BY                                                                                                       | SCALE<br>FULL                            |
| DRAWING NO.<br>USA-3116                                                                                           | SHEET<br>5 OF 6                          |



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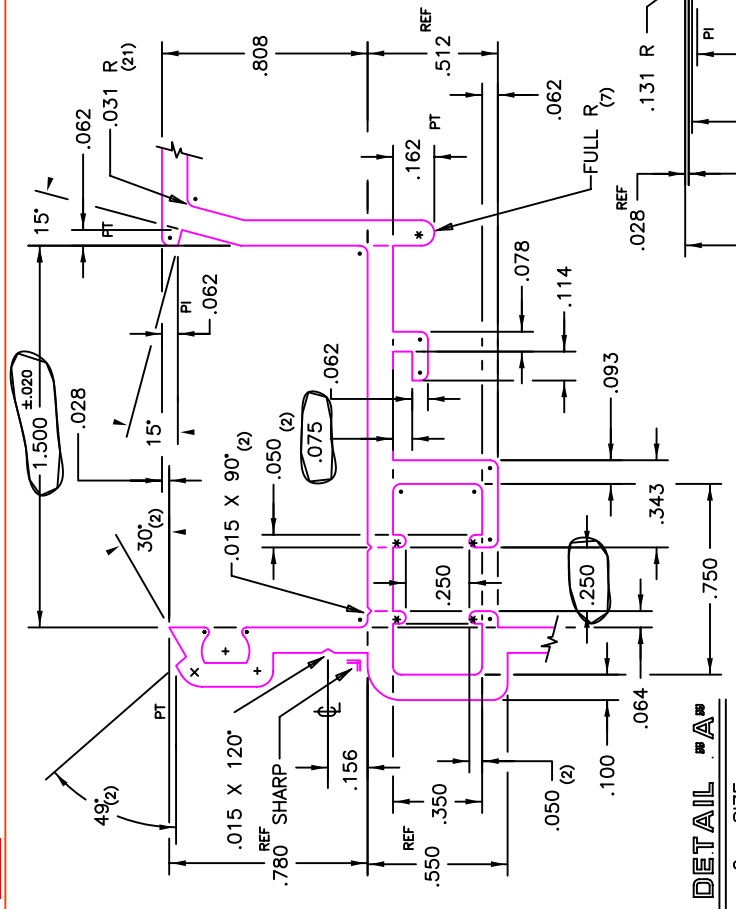


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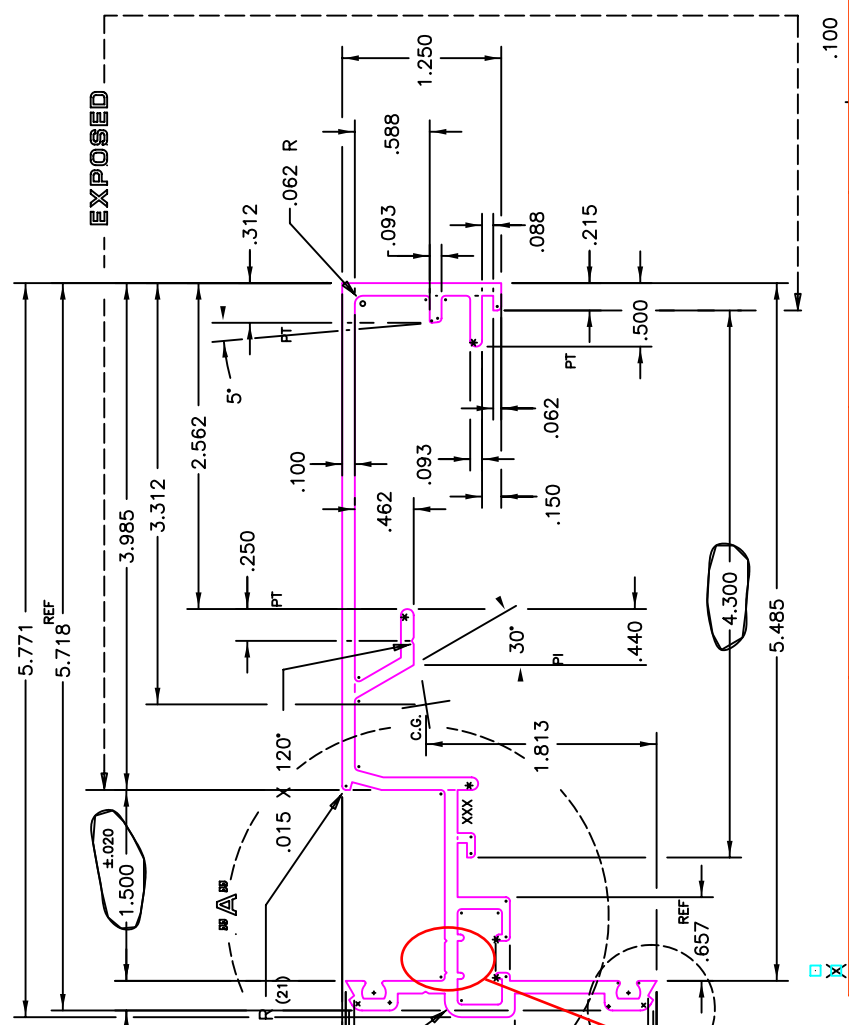
# NOTES

1. 6063-T5 ALLOY & TEMPER
2. ASSEMBLES W/P-27818 (PW607) DIE # 31877  
SNAPS-FITS W/(CW901) DIE #31465
3. THERMO DETAIL AREA: .269; "DD"
4. DEBRIDGE WITH A .218 x .015 MAX PENETRATION  
INTO THERMO MATERIAL.
5. PAINT PERIMETER: 5.450"
6. XXX INDICATES I.D. MARK FOR IEC-TX

## SECTION PROPERTIES

$$\begin{array}{rcl} l_{xx} & = & 5.301 \text{ in } 4 \\ S_{xx} & = & 1.601 \text{ in } 3 \\ l_{yy} & = & 0.476 \text{ in } 4 \\ S_{yy} & = & 0.263 \text{ in } 3 \end{array}$$


**DETAIL** 500 500  
**2 x SIZE**



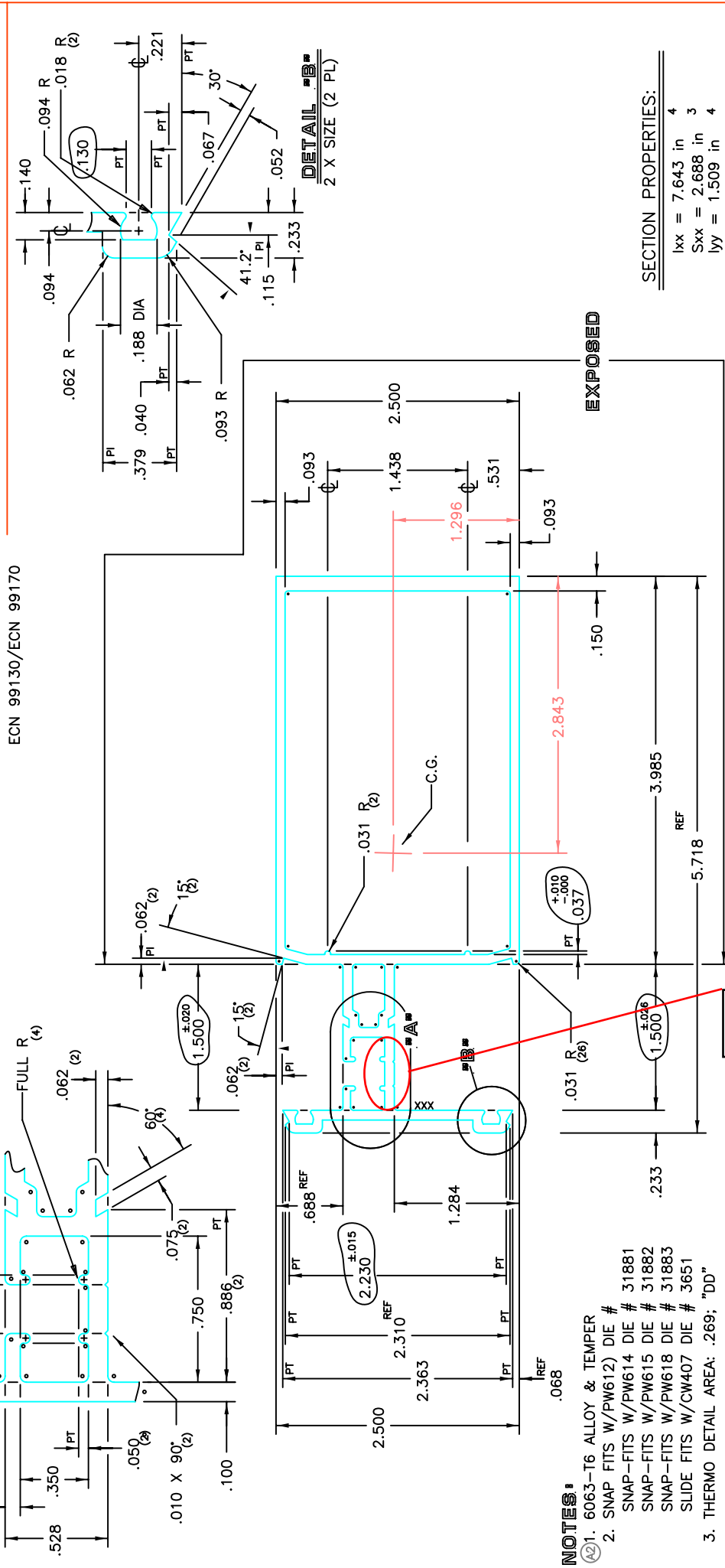
**DETAIL** **B**  
4 x SIZE

|                                       |  |
|---------------------------------------|--|
| Skip & Debridge 1" Skip 18" on-center |  |
|---------------------------------------|--|

|  |        |            |         |          |
|--|--------|------------|---------|----------|
|  | 1.311  | P-27819    | 1       | WP 31875 |
|  | 1.573  | 6.188      | 12 X    | 31875    |
|  | 27.084 | SOLID      | 15x8.5  | 31875    |
|  | 17     | 8 41 / SUE | T-31875 |          |



|    |                                     |        |         |                     |            |
|----|-------------------------------------|--------|---------|---------------------|------------|
| A1 | WT/FT WAS 2.294<br>ECN 2000-038     | GAH 00 | 2/16 00 | U.S. ALUMINUM CORP. | H-60434 A2 |
| A2 | REV. ALLOY & TEMPER<br>ECN 2000-164 | GLH 00 | 11-6 00 | DWJ                 | 7/20/99    |
|    |                                     |        |         | VERTICAL MULLION    | FULL SIZE  |
|    |                                     |        |         | PW600               |            |



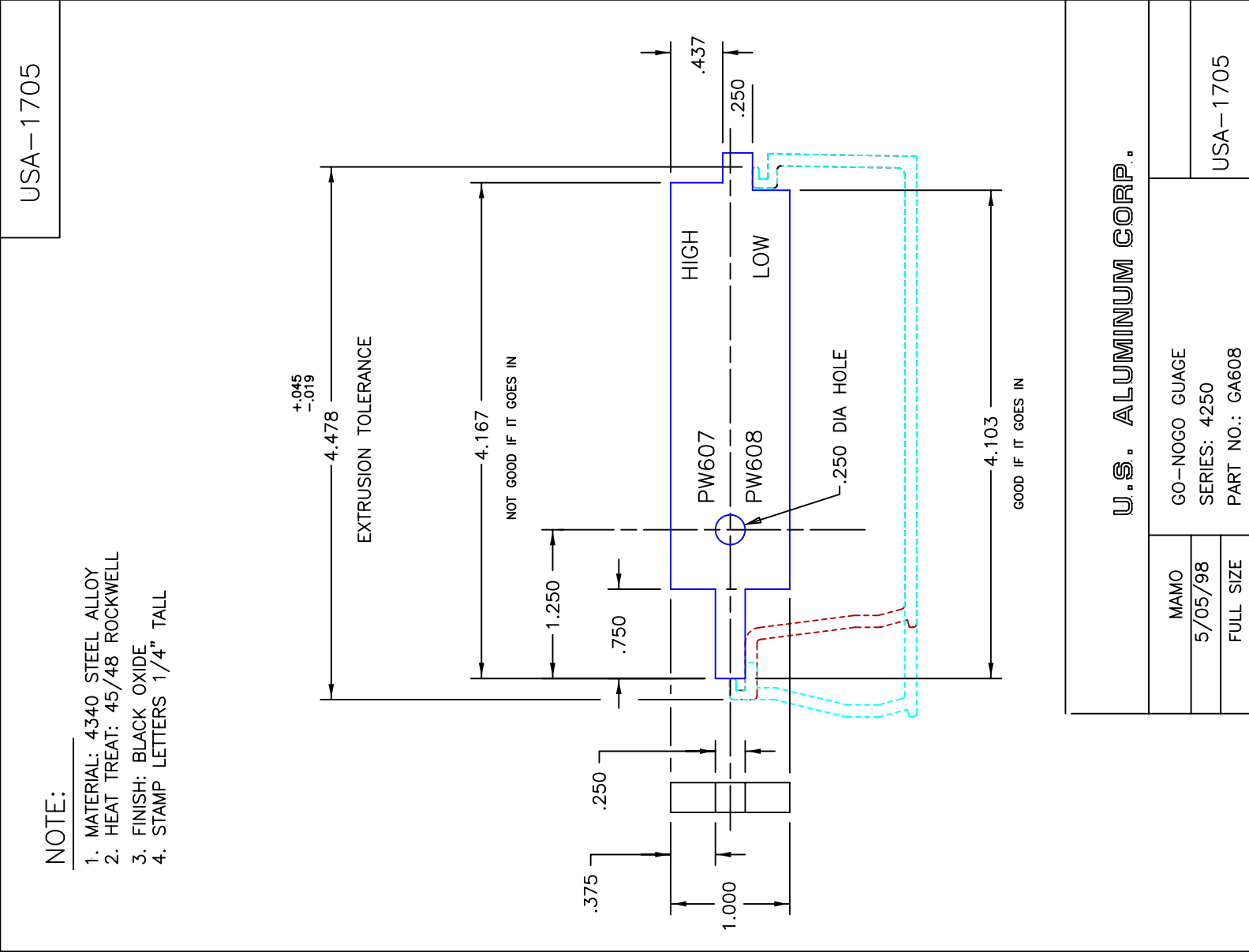
- NOTES:**
1. 6063-T6 ALLOY & TEMPER
  2. SNAP FITS W/PW612) DIE # 31881  
SNAP-FITS W/PW614) DIE # 31882  
SNAP-FITS W/PW615) DIE # 31883  
SNAP-FITS W/PW618) DIE # 31883  
SLIDE FITS W/CW407) DIE # 3651
  3. THERMO DETAIL AREA: .269; "DD"
  4. DEBRIDGE WITH A .218 x .015 MAX. PENETRATION INTO THERMAL MATERIAL.
  5. PAINT PERIMETER: 10.504"
  6. OUTSIDE PERIMETER: 23.317"
  7. XXX INDICATES I.D. MARK FOR IEC-TX
  8. F&D PART IS PT600

SECTION PROPERTIES:

|                |   |
|----------------|---|
| Ixx = 7.643 in | 4 |
| Sxx = 2.688 in | 3 |
| Iyy = 1.509 in | 4 |
| Syy = 1.165 in | 3 |

Skip & Debridge 1" Skip 18" on-center

|         |           |            |            |
|---------|-----------|------------|------------|
| 4250 CW | 1.951     | US100207   | .100       |
|         | 2.341 (A) | 6.174      |            |
|         | 37.205    | HOLLOW III |            |
|         | 15        |            |            |
|         |           |            | H-60434 A2 |



## LPD (Low Profile Delta) Air Spacer

### LASER WELDED

#### TOLERANCES:

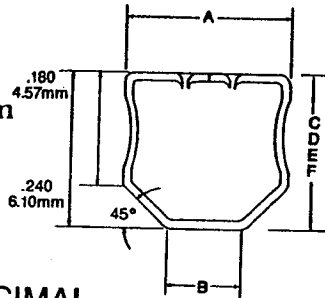
A,  $\pm .005$  .127mm

B,  $\pm .005$  .127mm

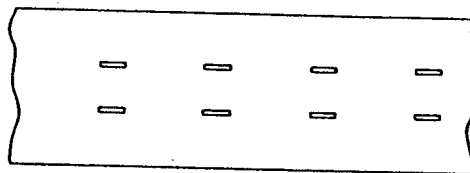
C, D, E, F  $\pm .005$  .127mm

All LPD Spacer is serrated at dimension B.

If spacer is to be bent, we must be notified at time of order to eliminate serrations.



DECIMAL  
IN INCHES



"C" — .0135" Clear Anodized Aluminum Height — .235 5.97mm

"D" — .0165" Clear Anodized Aluminum Height — .240 6.10mm

"E" — .0170" Mill Finish Aluminum Height — .242 6.15mm

"F" — .0150" Electro-Galvanized & Black Steel Height — .245 6.22mm

#### FRACTIONAL DECIMAL IN INCHES

| Size  | A    | B    |
|-------|------|------|
| 7/32  | .219 | .099 |
| 1/4   | .250 | .130 |
| 17/64 | .266 | .146 |
| 9/32  | .281 | .161 |
| 5/16  | .313 | .193 |
| 11/32 | .344 | .224 |
| 23/64 | .359 | .239 |
| 3/8   | .375 | .255 |
| 13/32 | .406 | .286 |
| 7/16  | .438 | .318 |
| 15/32 | .468 | .348 |
| 1/2   | .500 | .380 |
| 17/32 | .531 | .411 |
| 9/16  | .563 | .443 |
| 19/32 | .594 | .474 |
| 5/8   | .625 | .505 |
| 21/32 | .656 | .536 |
| 11/16 | .688 | .568 |
| 23/32 | .719 | .599 |
| 3/4   | .750 | .630 |
| 25/32 | .781 | .661 |
| 13/16 | .812 | .692 |

#### MILLIMETERS DECIMAL IN INCHES

| Size | A    | B    |
|------|------|------|
| 5.5  | .216 | .116 |
| 6    | .236 | .136 |
| 7    | .276 | .176 |
| 7.5  | .296 | .196 |
| 8    | .315 | .215 |
| 9    | .354 | .254 |
| 9.5  | .374 | .274 |
| 10   | .394 | .294 |
| 11   | .433 | .333 |
| 11.5 | .453 | .353 |
| 12   | .472 | .372 |
| 13   | .512 | .412 |
| 13.5 | .531 | .431 |
| 14   | .551 | .451 |
| 14.5 | .571 | .471 |
| 15   | .591 | .491 |
| 15.5 | .610 | .510 |
| 16   | .630 | .530 |
| 17.5 | .689 | .589 |
| 19   | .748 | .648 |
| 19.5 | .768 | .668 |
| 20   | .787 | .687 |

## GLPD (Grooved Low Profile Delta) Air Spacer

### LASER WELDED

#### TOLERANCES:

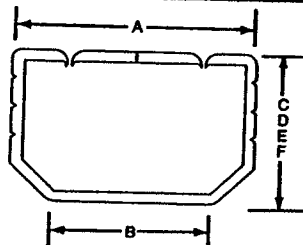
A,  $\pm .005$  .127mm

B,  $\pm .005$  .127mm

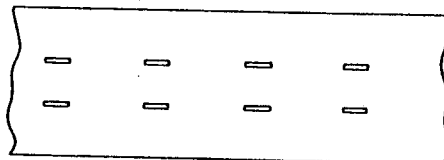
C, D, E, F  $\pm .005$  .127mm

All GLPD Spacer is serrated at dimension B.

If spacer is to be bent, we must be notified at time of order to eliminate serrations.



DECIMAL  
IN INCHES



#### MILLIMETERS DECIMAL IN INCHES

| Size | A    | B    |
|------|------|------|
| 5.5  | .216 | .116 |
| 6    | .236 | .136 |
| 7    | .276 | .176 |
| 7.5  | .296 | .196 |
| 8    | .315 | .215 |
| 9    | .354 | .254 |
| 9.5  | .374 | .274 |
| 10   | .394 | .294 |
| 11   | .433 | .333 |
| 11.5 | .453 | .353 |
| 12   | .472 | .372 |
| 13   | .512 | .412 |
| 13.5 | .531 | .431 |
| 14   | .551 | .451 |
| 14.5 | .571 | .471 |
| 15   | .591 | .491 |
| 15.5 | .610 | .510 |
| 16   | .630 | .530 |
| 17.5 | .689 | .589 |
| 19   | .748 | .648 |
| 19.5 | .768 | .668 |
| 20   | .787 | .687 |

"C" — .0135" Clear Anodized Aluminum Height — .235 5.97mm

"D" — .0165" Clear Anodized Aluminum Height — .240 6.10mm

"E" — .0170" Mill Finish Aluminum Height — .242 6.15mm

"F" — .0150" Electro-Galvanized & Black Steel Height — .245 6.22mm



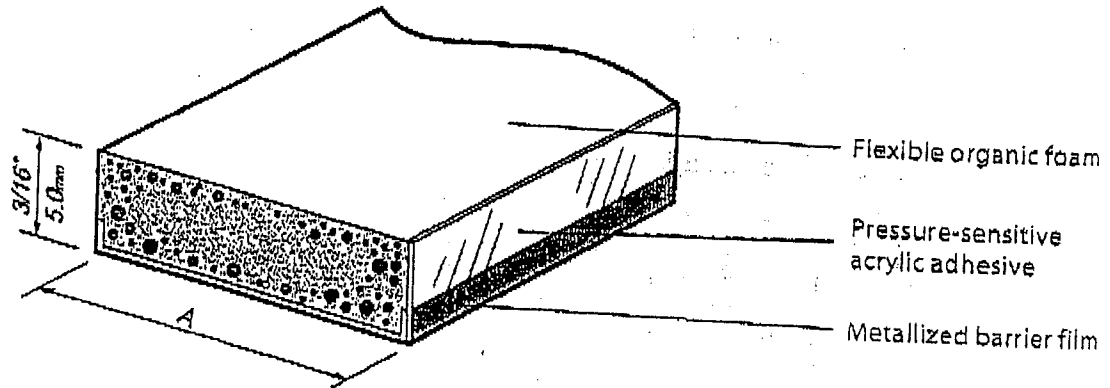
NOTE: All LPD Keys following, are compatible with the GLPD Air Spacer.

# Super Spacer®

## Technical Data

|           |                      |
|-----------|----------------------|
| ATI       |                      |
| Report #  | 94232                |
| Date      | 11/16/09             |
| Simulator | <i>John A. Vogel</i> |

Stand



| Width A     | 3/16" | 1/4" | 5/16" | 3/8" | 7/16" | 1/2" | 9/16" | 5/8" | 11/16" | 3/4" |
|-------------|-------|------|-------|------|-------|------|-------|------|--------|------|
| Ft/Reel     | 2000  | 1500 | 1100  | 1000 | 900   | 800  | 700   | 675  | 600    | 500  |
| *Width (mm) | 5.0   | 6.5  | 8.0   | 9.5  | 11.0  | 12.5 | 14.5  | 16.0 | 17.5   | 19.0 |
| *m/Reel     | 610   | 460  | 335   | 305  | 275   | 245  | 215   | 205  | 185    | 150  |

\*Metric spacer widths are conversions to the nearest half millimeter from imperial sizes.

### Spacer Sizes

Super Spacer Standard is available in a standard 3/16" (5mm) thickness and a full range of spacer widths from 3/16" (5mm) to 3/4" (19mm).

### Continuous Packaged Length

For regular insulating-glass production, Super Spacer Standard is supplied on reels with the continuous packaged length varying depending on the spacer width.

### Protective Packaging

To provide desiccant protection, the reels are sealed in moisture-proof foil bags and packaged in

high-density polyethylene bags. These double-packaged reels are then shipped in recyclable cardboard boxes.

### Desiccant Systems

Over 40 percent by spacer weight is desiccant material and the low-deflection blend primarily consists of 3A molecular-sieve material.

### Standard Colors

The standard color is a charcoal grey.

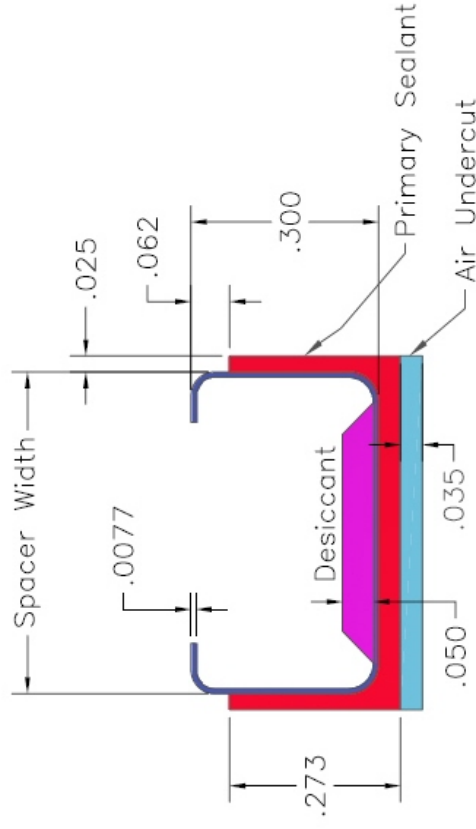
Super Spacer® is a registered trademark of Edgetech I.G. Inc.

9/01

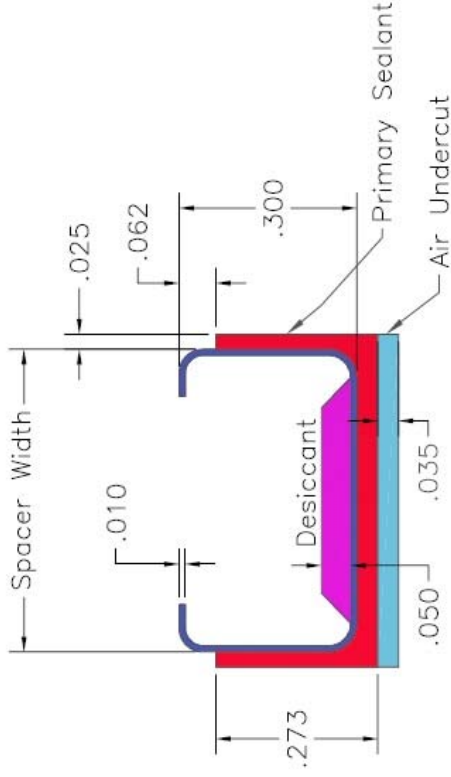
BETWEEN YOU AND THE ELEMENTS • 1.866.TRUEWARM



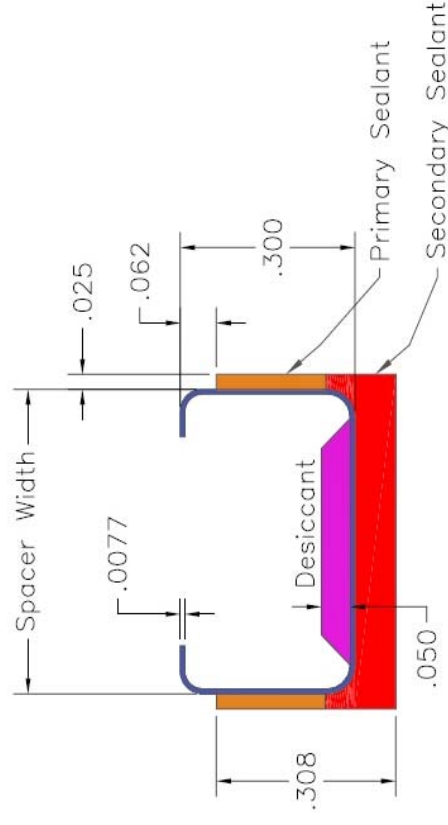
**Intercept® ULTRA Stainless Steel—Standard Profile  
SINGLE SEAL**



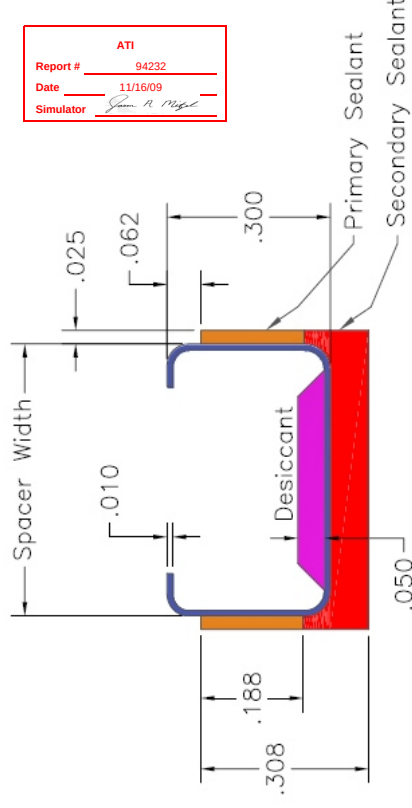
**Intercept® Blackline or Electrolytic Tin Plated Steel—Standard Profile  
SINGLE SEAL**



**Intercept® ULTRA Stainless Steel—Standard Profile  
DUAL SEAL**



**Intercept® Blackline or Electrolytic Tin Plated Steel—Standard Profile  
DUAL SEAL**



|           |               |
|-----------|---------------|
| Report #  | ATI 94232     |
| Date      | 11/16/09      |
| Simulator | John A. Mager |