NFRC 102-2004 THERMAL PERFORMANCE
TEST REPORT

Rendered to:

CORAL ARCHITECTURAL PRODUCTS

SERIES/MODEL:  FS400T Storefront System
TYPE:  Glazed Wall Systems (Site-built)

<table>
<thead>
<tr>
<th>Summary of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Thermal Transmittance (U-Factor)</td>
</tr>
<tr>
<td>Unit Size</td>
</tr>
<tr>
<td>Layer 1</td>
</tr>
<tr>
<td>Gap 1</td>
</tr>
<tr>
<td>Layer 2</td>
</tr>
</tbody>
</table>

Reference must be made to Report No. 93279.01-116-46, dated 10/08/09 for complete test specimen description and data.
NFRC 102-2004 THERMAL PERFORMANCE TEST REPORT

Rendered to:

CORAL ARCHITECTURAL PRODUCTS
3010 Rice Mine Road
Tuscaloosa, Alabama 35406

Report Number: 93279.01-116-46
Test Date: 10/03/09
Report Date: 10/08/09
Expiration Date: 10/03/13

Test Sample Identification:

Series/Model: FS400T Storefront System
Type: Glazed Wall Systems (Site-built)
Overall Size: 78-7/8" x 78-3/4" (2003 mm x 2000 mm) (Model Size)
NFRC Standard Size: 78.7" x 78.7" (2000 mm wide x 2000 mm high)

Test Sample Submitted by: Client
Test Sample Submitted for: 0

Test Procedure: U-factor tests were performed in a Guarded Hot Box in accordance with NFRC 102-2004, Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.

Test Results Summary:

Standardized U-factor ($U_{st}$): 0.44 Btu/hr·ft²·F   CTS Method
Test Sample Description:

<table>
<thead>
<tr>
<th>CONSTRUCTION</th>
<th>Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size (in.)</td>
<td>78-7/8&quot; x 78-3/4&quot;</td>
</tr>
<tr>
<td>Daylight Opening (in.)</td>
<td>36-3/8&quot; x 74-5/8&quot; (x2)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CORNERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Butt</td>
<td></td>
</tr>
<tr>
<td>Fasteners</td>
<td>Screws</td>
</tr>
<tr>
<td>Sealant</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MATERIAL</th>
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<tbody>
<tr>
<td>Color Exterior</td>
<td>Gray</td>
</tr>
<tr>
<td>Finish Exterior</td>
<td>Anodized</td>
</tr>
<tr>
<td>Color Interior</td>
<td>Gray</td>
</tr>
<tr>
<td>Finish Interior</td>
<td>Anodized</td>
</tr>
</tbody>
</table>

| GLAZING METHOD         | Pocket           |

* Thermal Break is poured and skipped debridged, skip is 2-1/2"

Glazing Information:

<table>
<thead>
<tr>
<th>Layer 1</th>
<th>3/16&quot; Clear Annealed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap 1</td>
<td>0.47&quot; Gap, Super Spacer (ZF-S), Air-Filled*</td>
</tr>
<tr>
<td>Layer 2</td>
<td>3/16&quot; AFG Comfort Ti-R (e=0.035*, #3) Annealed</td>
</tr>
<tr>
<td>Gas Fill Method</td>
<td>N/A*</td>
</tr>
</tbody>
</table>

*Stated per Client/Manufacturer
N/A  Non-Applicable
See Description Table Abbreviations
**Test Sample Description:** (Continued)

**COMPONENTS**

<table>
<thead>
<tr>
<th>Type</th>
<th>Quantity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEATHERSTRIP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wedge Gasket</td>
<td>1 Row</td>
<td>Interior and exterior glazing perimeter</td>
</tr>
<tr>
<td>HARDWARE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No hardware</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRAINAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No visible weeps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thermal Transmittance (U-factor)

Measured Test Data

Heat Flows
1. Total Measured Input into Metering Box (Q_{tot}) \hspace{1cm} 1473.04 \text{ Btu/hr}
2. Surround Panel Heat Flow (Q_{sp}) \hspace{1cm} 47.25 \text{ Btu/hr}
3. Surround Panel Thickness \hspace{1cm} 8.00 \text{ inches}
4. Surround Panel Conductance \hspace{1cm} 0.0261 \text{ Btu/hr-ft}^2\cdot\text{F}
5. Metering Box Wall Heat Flow (Q_{mb}) \hspace{1cm} 20.81 \text{ Btu/hr}
6. EMF vs Heat Flow Equation (equivalent information) \hspace{1cm} 0.0196*EMF + 0.020
7. Flanking Loss Heat Flow (Q_{fl}) \hspace{1cm} 17.90 \text{ Btu/hr}
8. Net Specimen Heat Loss (Q_{s}) \hspace{1cm} 1387.08 \text{ Btu/hr}

Areas
1. Test Specimen Projected Area (A_{s}) \hspace{1cm} 43.13 \text{ ft}^2
2. Test Specimen Interior Total (3-D) Surface Area (A_{h}) \hspace{1cm} 57.06 \text{ ft}^2
3. Test Specimen Exterior Total (3-D) Surface Area (A_{c}) \hspace{1cm} 50.83 \text{ ft}^2
4. Metering Box Opening Area (A_{mb}) \hspace{1cm} 69.44 \text{ ft}^2
5. Metering Box Baffle Area (A_{bb}) \hspace{1cm} 60.74 \text{ ft}^2
6. Surround Panel Interior Exposed Area (A_{sp}) \hspace{1cm} 26.31 \text{ ft}^2

Test Conditions
1. Average Metering Room Air Temperature (t_{hr}) \hspace{1cm} 69.80 \text{ F}
2. Average Cold Side Air Temperature (t_{c}) \hspace{1cm} -0.39 \text{ F}
3. Average Guard/Environmental Air Temperature \hspace{1cm} 71.26 \text{ F}
4. Metering Room Average Relative Humidity \hspace{1cm} 4.98 \%
5. Measured Cold Side Wind Velocity (Perpendicular Flow) \hspace{1cm} 17.07 \text{ mph}
6. Measured Static Pressure Difference Across Test Specimen \hspace{1cm} 0.00'' \pm 0.04''\text{H}_2\text{O}

Results
1. Thermal Transmittance of Test Specimen (U_{s}) \hspace{1cm} 0.46 \text{ Btu/hr-ft}^2\cdot\text{F}
2. Standardized Thermal Transmittance of Test Specimen (U_{st}) \hspace{1cm} 0.44 \text{ Btu/hr-ft}^2\cdot\text{F}
Thermal Transmittance (U-factor)

Calculated Test Data

**CTS Method**
1. Emittance of Glass (e₁) 0.84
2. Warm Side Baffle Emittance (e₀₁) 0.92
3. Equivalent Warm Side Surface Temperature 46.03 F
4. Equivalent Cold Side Surface Temperature 5.56 F
5. Warm Side Baffle Surface Temperature 67.89 F
6. Measured Warm Side Surface Conductance (hₗ) 1.35 Btu/hr·ft²·F
7. Measured Cold Side Surface Conductance (hₗ) 5.40 Btu/hr·ft²·F
8. Test Specimen Thermal Conductance (Cₗ) 0.79 Btu/hr·ft²·F
9. Convection Coefficient (Kₗ) 0.31 Btu/(hr·ft²·F¹.²⁵)
10. Radiative Test Specimen Heat Flow (Qᵣ₁) 697.44 Btu/hr
11. Conductive Test Specimen Heat Flow (Qₗ) 689.64 Btu/hr
12. Radiative Heat Flux of Test Specimen (qᵣ₁) 16.17 Btu/hr·ft²·F
13. Convective Heat Flux of Test Specimen (qₗ) 15.99 Btu/hr·ft²·F
14. Standardized Warm Side Surface Conductance (hₘ) 1.21 Btu/hr·ft²·F
15. Standardized Cold Side Surface Conductance (hₘ) 5.28 Btu/hr·ft²·F
16. Standardized Thermal Transmittance (Uₘ) 0.44 Btu/hr·ft²·F

**Test Duration**
1. The environmental systems were started at 16:39 hours, 10/02/09.
2. The test parameters were considered stable for two consecutive four hour test periods from 06:56 hours, 10/03/09 to 14:56 hours, 10/03/09.
3. The thermal performance test results were derived from 10:56 hours, 10/03/09 to 14:56 hours, 10/03/09.

The reported Standardized Thermal Transmittance (Uₘ) was determined using CTS Method, per Section 8.2(A) of NFRC 102.
The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test.

A calibration of the Architectural Testing Inc. 'thermal test chamber' (ICN 000001) in York, Pennsylvania was conducted in April 2009 in accordance with Architectural Testing Inc. calibration procedure.

"This test method does not include procedures to determine the heat flow due to either air movement through the specimen or solar radiation effects. As a consequence, the thermal transmittance results obtained do not reflect performances which may be expected from field installations due to not accounting for solar radiation, air leakage effects, and the thermal bridge effects that may occur due to the specific design and construction of the fenestration system opening. Therefore, it should be recognized that the thermal transmittance results obtained from this test method are for ideal laboratory conditions and should only be used for fenestration product comparisons and as input to thermal performance analyses which also include solar, air leakage and thermal bridge effects."

"Ratings included in this report are for submittal to an NFRC-licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes."

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side. The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen.

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 1.53%.
Detailed drawings, data sheets, representative samples of the test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. until 10/3/2013. At the end of this retention period such materials shall be discarded without notice and the service life of this report by Architectural Testing, Inc. will expire.

Results obtained are tested 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. Ratings included in this report are for submittal to an NFRC licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Tested By: Reviewed By:

Benjamin W. Green
Technician

Shon W. Einsig
Senior Technician
Individual-In-Responsible-Charge

BWG:kmn
93279.01-116-46

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Description Table Abbreviations (1)
Appendix-B: Drawings (6)
## Revision Log

<table>
<thead>
<tr>
<th>Rev. #</th>
<th>Date</th>
<th>Page(s)</th>
<th>Revision(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01R0</td>
<td>10/08/09</td>
<td>All</td>
<td>Original Report Issue. Work requested by David Welch of Coral Architectural Products</td>
</tr>
</tbody>
</table>

This report produced from controlled document template ATI 00025, revised 10/08/08.
# Appendix A: Description Table Abbreviations

## Frame / Sash Types
- **AI**: Aluminum w/ Vinyl Inserts (Caps)
- **AL**: Aluminum
- **AP**: Aluminum w/ Thermal Breaks - Partial
- **AS**: Aluminum w/ Steel Reinforcement
- **AT**: Aluminum w/ Thermal Breaks - All Members (≥ 0.21")
- **AU**: Aluminum Thermally Improved - All Members (0.062" - 0.209")
- **AV**: Aluminum / Vinyl Composite
- **AW**: Aluminum-clad Wood
- **FG**: Fiberglass
- **PA**: ABS Plastic w/ All Members Reinforced
- **PC**: ABS Plastic-clad Aluminum
- **PF**: ABS Plastic w/ Foam-filled Insulation
- **PH**: ABS Plastic w/ Horizontal Members Reinforced
- **PI**: ABS Plastic w/ Reinforcement - Interlock
- **PL**: ABS Plastic
- **PP**: ABS Plastic w/ Reinforcement - Partial
- **PV**: ABS Plastic w/ Vertical Members Reinforced
- **PW**: ABS Plastic-clad Wood
- **ST**: Steel
- **VA**: Vinyl w/ All Members Reinforced
- **VC**: Vinyl-clad Aluminum
- **VF**: Vinyl w/ Foam-filled Insulation
- **VH**: Vinyl w/ Horizontal Members Reinforced
- **VI**: Vinyl w/ Reinforcement - Interlock
- **VP**: Vinyl w/ Reinforcement - Partial
- **VV**: Vinyl w/ Vertical Members Reinforced
- **VV**: Vinyl-clad Wood
- **WY**: Vinyl
- **WA**: Aluminum / Wood composite
- **WD**: Wood
- **WW**: Vinyl / Wood composite
- **WF**: Wood Fiberglass/Wood Combination
- **WC**: Composite/Wood Composite (Shaped vinyl/wood composite members)
- **CW**: Copper Clad Wood
- **CO**: Vinyl/Wood Composite Material

## Door Type
- **EM**: Embossed
- **FL**: Flush
- **LF**: Full Lite
- **LI**: Lite
- **LQ**: Lite
- **LT**: Lite
- **RP**: Raised Panel
- **VS**: Vertical Sliding
- **SH**: Sliding Horizontal
- **SH**: Sliding Horizontal

## Skin
- **AL**: Aluminum
- **FG**: Fiberglass
- **GS**: Galvanized Steel
- **ST**: Steel
- **WD**: Wood
- **YY**: Vinyl

## Panel
- **FG**: Fiberglass
- **PL**: Plastic
- **WP**: Wood - Plywood
- **WS**: Wood - Solid
- **PU**: Polyurethane
- **WP**: Wood - Plywood
- **WS**: Wood - Solid
- **XP**: Extruded Polystyrene

## Core Fill
- **CH**: Cellular - Honeycomb
- **EP**: Expanded Polystyrene
- **PI**: Polysioacrylate
- **PU**: Polyurethane
- **WP**: Wood - Plywood
- **WS**: Wood - Solid
- **XP**: Extruded Polystyrene

## Spacer Types (See sealant)
- **A1**: Aluminum
- **A2**: Aluminum (Thermally-broken)
- **A3**: Aluminum-reinforced Polymer
- **A4**: Aluminum / Wood
- **A5**: Aluminum-reinforced Butyl (Swiggle)
- **A6**: Aluminum / Foam / Aluminum
- **A7**: Aluminum-U-shaped
- **A8**: Aluminum-Butyl (Corrugated) (Duraseal)
- **ER**: EPDM Reinforced Butyl
- **FG**: Fiberglass
- **GL**: Glass
- **OF**: Organic Foam
- **PI**: Duralite
- **PU**: Polyurethane Foam
- **SU**: Stainless Steel, U-shaped
- **CU**: Coated Steel, U-shaped (Intersect)
- **S2**: Steel (Thermally-broken)
- **S3**: Steel / Foam / Steel
- **S5**: Steel-reinforced Butyl
- **S6**: Steel U-channel w/ Thermal Cap
- **SS**: Stainless Steel
- **CS**: Coated Steel
- **TP**: Thermo-plastic
- **WD**: Wood
- **ZE**: Elastomeric Silicone Foam
- **Z1**: Silicone Foam
- **S2**: Silicone-coated Steel
- **N**: Not Applicable
- **TS**: Thermo-plastic w/ stainless steel substrate

## Tint Codes
- **AZ**: Azurlite
- **BL**: Blue
- **BR**: Bronze
- **CL**: Clear
- **EV**: Evergreen
- **GD**: Gold
- **GR**: Green
- **GY**: Gray
- **LE**: Low ‘e’ Coating
- **OT**: Other (use comment field)
- **RC**: Solar or Reflective Coating
- **RG**: Roller Shades between glazing
- **RS**: Silver (reflective coating)
- **SP**: Suspended Polyester Film
- **SR**: Silver
- **BG**: Blinds between the Glazing
- **DV**: Dynamic Glazing-Variable
- **DY**: Dynamic Glazing-NonVariable

## Spacer Sealant
- **D**: Dual Seal Spacer System
- **S**: Single Seal Spacer System

## Grid Description
- **N**: No Muntins
- **G**: Grids between glass
- **S**: Simulated Divided Lites
- **I**: True Muntins

## Grid Size Codes
- **Blank for no grids**: Grids < 1”
- **1.5**: Grids >= 1”
- **0.75**: Grids < 1”

## Gap Fill Codes
- **AIR**: Air
- **AK2**: Argon/Krypton Mixture
- **AK3**: Argon / Krypton / Air
- **ARG**: Argon/Air
- **CO2**: Carbon Dioxide
- **KRY**: Krypton/Air
- **SF6**: Sulfur Hexafluoride
- **XE2**: Xenon/Krypton/Air
- **XE3**: Xenon/Air
- **XEN**: Xenon/Air
- **N**: Not Applicable

## Thermal Breaks
- **F**: Foam
- **U**: Urethane
- **V**: Vinyl
- **FB**: Fiberglass
- **O**: Other
- **AB**: ABS
- **NE**: Neoprene
- **AI**: Air
- **N**: Not Applicable
- **P**: Polyamide
- **PBS**: Polybutene-2
Appendix B: Submittal Form and Drawings
THERMAL TEST REPORT DRAWINGS
FOR FS400T FRAMING SYSTEM

INDEX TO DRAWINGS
SHEET 1 INDEX TO DRAWINGS
SHEET 2 TYPICAL ELEVATION
SHEET 3 FRAMING DETAILS
SHEET 4 FRAMING DETAILS
SHEET 5 BILL OF MATERIALS

Architectural Testing
Test sample complies with these details. Deviations are noted.

Report# 33379.01
Date 10/04/99
Tech B.A.G.

ABBREVIATIONS:
D.L.O. = DAY LIGHT OPENING
# BILL OF MATERIALS

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>DIMENSIONS</th>
<th>MATERIAL</th>
<th>MANUFACTURER</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>NC1</td>
<td>GLAZING DASKET EXTERIOR/INTERIOR</td>
<td>0.197 SPACE</td>
<td>EPOXY</td>
<td>Varies</td>
<td>EXTERIOR/INTERIOR @ GLASS</td>
</tr>
<tr>
<td>2</td>
<td>SB3</td>
<td>SETTING BLOCK AT INTERM. HORIZONTAL</td>
<td>0.625 X 4.000 X 1.500</td>
<td>EPOXY</td>
<td>Varies</td>
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<td>4</td>
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<tr>
<td>5</td>
<td>FS401T</td>
<td>THERMAL HEAD</td>
<td>2.000 X 4.500 X 0.700</td>
<td>6036-T6 ALUMINUM</td>
<td>CORAL</td>
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<tr>
<td>6</td>
<td>FS407T</td>
<td>THERMAL JAMB</td>
<td>2.000 X 4.500 X 0.700</td>
<td>6036-T6 ALUMINUM</td>
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<tr>
<td>7</td>
<td>ED339-1</td>
<td>END DAM</td>
<td>3.313 X 4.813 X 0.063</td>
<td>ROG PVC</td>
<td>CORAL</td>
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<td>8</td>
<td>FS404T</td>
<td>VERTICAL MULLION</td>
<td>2.000 X 4.500 X 0.070</td>
<td>6063-T6 ALUMINUM</td>
<td>CORAL</td>
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<tr>
<td>9</td>
<td>FS405</td>
<td>MULLION FILLER</td>
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<td>10</td>
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<td>11</td>
<td>FS403</td>
<td>GLASS STOP</td>
<td>1.135 X 2.792 X 0.050</td>
<td>6063-T6 ALUMINUM</td>
<td>CORAL</td>
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<tr>
<td>12</td>
<td>FS402T</td>
<td>SILL</td>
<td>2.000 X 4.500 X 0.700</td>
<td>6063-T6 ALUMINUM</td>
<td>CORAL</td>
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<tr>
<td>13</td>
<td>FL339T</td>
<td>SUBSILL FLASHING</td>
<td>2.312 X 4.788 X 0.078</td>
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<tr>
<td>14</td>
<td>AS16</td>
<td>SPLINE ASSEMBLY SCREW</td>
<td>0.14 X 0.11 X 0.09</td>
<td>STEEL</td>
<td>Varies</td>
<td>TYPICAL SPLINE SCREW</td>
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<tr>
<td>15</td>
<td>AS31</td>
<td>ASSEMBLY SCREW</td>
<td>0.06 X 0.14 X 0.09</td>
<td>STEEL</td>
<td>Varies</td>
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<td>16</td>
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<tr>
<td>19</td>
<td>SM5601</td>
<td>JOINT SEALANT TAPE</td>
<td>1/8&quot; X 1/2&quot; Varies</td>
<td>BUTYL</td>
<td>SCHNEE-MOREHEAD</td>
<td>USED AT HORIZ. TO VERT. JOINT INTERSECTIONS</td>
</tr>
</tbody>
</table>

## GLAZING SCHEDULE

<table>
<thead>
<tr>
<th>GLASS MARK SYMBOL</th>
<th>GLASS TYPE</th>
<th>MANUFACTURER</th>
<th>MAXIMUM D.O.S. SIZE</th>
<th>MAXIMUM SQUARE FEET</th>
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<tbody>
<tr>
<td>A</td>
<td>1&quot; IG-1/4&quot; SOLAR COOL GRAY, 1/2&quot; SPACER, 1/4&quot; LOW E CLEAR #3 SURFACE</td>
<td>Varies</td>
<td>36 3/8&quot; X 74 3/4&quot;</td>
<td>18.882</td>
</tr>
</tbody>
</table>
E1 - LIGHT ALUMINUM MULLION EXTERIOR GLAZED
**Super Spacer®**

Super Spacer Standard is a flexible, organic foam spacer product that provides excellent perimeter insulation for sealed glazing units. Desiccant-filled with pre-applied side adhesive, the structural foam spacer significantly simplifies insulating glass production. Featuring a vapour barrier backing, the product must be used in combination with conventional IG sealants such as hot melt butyl, polyurethane or solvent-free polysulfide. Dual seal equivalent sealants may also be used (reference IG sealants Technical Bulletin RD0018).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Norm</th>
<th>Specification / Typical Value</th>
</tr>
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<tbody>
<tr>
<td>Composition:</td>
<td>—</td>
<td>Foam EPDM (Ethylene Propylene Diene Monomer) base with desiccant pre-fill</td>
</tr>
<tr>
<td>Performance Characteristics:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>ASTM C518</td>
<td>0.162 W/mK</td>
</tr>
<tr>
<td>Colours</td>
<td>—</td>
<td>Light Grey, Medium Grey, Black</td>
</tr>
<tr>
<td>Gas / Moisture vapour barrier</td>
<td>ASTM F1249</td>
<td>WVTR &lt; 0.020 gm/m²/day</td>
</tr>
<tr>
<td></td>
<td>ASTM D3985</td>
<td>Oxygen &lt; 0.009 cc/m²/day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acrylic adhesive</td>
</tr>
<tr>
<td>Primary structural seal</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Physical Characteristics:</td>
<td></td>
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<tr>
<td>Density</td>
<td>ASTM D1056</td>
<td>50 - 65 pcf</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>ASTM D1056</td>
<td>0.800 - 1.041 g/cm³</td>
</tr>
<tr>
<td>Hardness</td>
<td>ASTM D2240</td>
<td>88 shore 00</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>—</td>
<td>Reference attached table</td>
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<tr>
<td>Desiccant fill</td>
<td>—</td>
<td>40% by weight</td>
</tr>
<tr>
<td>Intermittent temperature range</td>
<td>—</td>
<td>-40°C to 121°C / -40°F to 250°F</td>
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<tr>
<td>Compatible secondary sealants</td>
<td>—</td>
<td>HMB, PU, PS, DSE (Curable HMB)</td>
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<tr>
<td></td>
<td></td>
<td>Reference IG sealants Technical Bulletin RD0018</td>
</tr>
<tr>
<td>Fogging</td>
<td>EN 1279 - 6</td>
<td>No fog in visual area</td>
</tr>
<tr>
<td></td>
<td>ASTM 774</td>
<td>No fog in visual area</td>
</tr>
<tr>
<td></td>
<td>HIGS 2190</td>
<td>No fog in visual area</td>
</tr>
<tr>
<td></td>
<td>CGSB 12.8</td>
<td>No fog in visual area</td>
</tr>
<tr>
<td>Gas Retention</td>
<td>EN 1279 - 3</td>
<td>Pass</td>
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<td>I.G. Durability</td>
<td>EN 1279 - 2</td>
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<tr>
<td></td>
<td>ASTM 773</td>
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<tr>
<td></td>
<td>CGSB 12.8</td>
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</table>
**Spaer Sizes**
Super Spacer Standard is available in a standard 5mm (3/16") thickness and a full range of spacer widths from 4.8mm (3/16") to 20mm (.798").

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

**Desiccant Systems**
Over 40% by spacer weight is desiccant material, and the low-deflection blend primarily consists of 3A molecular-sieve material.