THERMAL PERFORMANCE TEST REPORT

Manufacture: Coral Architectural Products
Address: 7704B Industrial Lane
Tampa, Florida 33637


PRODUCT DESCRIPTION

<table>
<thead>
<tr>
<th>Model Designation:</th>
<th>Series: FL550T Impact Flush Glaze Store Front</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Type:</td>
<td>GWWW</td>
</tr>
<tr>
<td>Overall Size:</td>
<td>2000mm (79&quot;) by 2000mm (79&quot;) high</td>
</tr>
<tr>
<td>NFRC Standard Size:</td>
<td>2000mm (79&quot;) by 2000mm (79&quot;) high</td>
</tr>
</tbody>
</table>

Frame Construction

| Frame Material, Color and Finish: | (AT) Painted gray aluminum alloy thermally broken |

Glazing Description

| Layer 1: | 1/4" clear glass *(Sungate 500 on surface #2)* |
| Gap:     | 1/2" gap using a Super Spacer |
| Layer 2: | 1/4" clear-0.060 SGP-1/4" clear |

**as per manufacture**

Glazing Method

| Interior Condition: | EPDM |
| Exterior Condition: | EPDM |

Gas Type | Filling Technique | Gas Fill Percentage
---|---|---
None     | None             | None

**as per manufacture**

Daylight Opening

| Left and Right Sections | 35 3/4" by 73 3/8" high |

Weather Stripping

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
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</table>
## Hardware

<table>
<thead>
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</table>

## Weep Holes

<table>
<thead>
<tr>
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<th>Description</th>
<th>Location</th>
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<tbody>
<tr>
<td>None</td>
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</table>

## Reinforcement

<table>
<thead>
<tr>
<th>Material</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

## Dividers/Grids

<table>
<thead>
<tr>
<th>Grid Size</th>
<th>Material</th>
<th>Grid Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
Measured Test Data

**Heat Flows**

1. Total Measured Input into Metering Box (Qtotal) 1430.64 Btu/hr
2. Surround Panel Heat Flow (Qsp) 173.66 Btu/hr
3. Surround Panel Thickness 5.0 inches
4. Surround Panel Conductance 0.04 Btu/hr·ft²·F
5. Metering Box Wall Heat Flow (Qmb) and Flanking Heat Flow (Qfl) -1.73 Btu/hr
6. EMF vs Heat Flow Equation (equivalent information) -7.30x35.61
7. Net Specimen Heat Loss (Qs) 1258.71 Btu/hr

**Areas**

1. Test Specimen Projected Area (As) 43.34 ft²
2. Test Specimen Interior Total (3-D) Surface Area (Aint) 47.28 ft²
3. Test Specimen Exterior Total (3-D) Surface Area (Aext) 47.97 ft²
4. Metering Box Opening Area (Amb) 103.79 ft²
5. Metering Box Baffle Area (Ab1) 92.91 ft²
6. Surround Panel Interior Exposed Area (Asp) 60.44 ft²

**Test Conditions**

1. Average Metering Room Air Temperature 69.80 F
2. Average Cold Side Air Temperature -0.31 F
3. Average Guard/Environmental Air Temperature 72.98 F
4. Metering Room Average Relative Humidity 11.1 %
5. Measured Cold Side Wind Velocity (Perpendicular Flow) 11.8 mph
6. Measured Static Pressure Difference Across Test Specimen 0.0 psf

**Surface Temperature Data**

1. Warm side surround panel 65.98 F
2. Cold side surround panel 0.98 F

**Results**

1. Thermal Transmittance of Test Specimen (Us) 0.41 Btu/hr·ft²·F
2. Standardized Thermal Transmittance of Test Specimen (Ust) 0.39 Btu/hr·ft²·F


Calculated Test Data

**CTS Method**

1. Emittance of Glass ($e_1$)  
   0.84
2. Warm Side Baffle Emittance ($eb_1$)  
   0.92
3. Equivalent Warm Side Surface Temperature  
   49.34 F
4. Equivalent Cold Side Surface Temperature  
   5.40 F
5. Warm Side Baffle Surface Temperature  
   68.21 F
6. Measured Warm Side Surface Conductance ($hh$)  
   $1.42 \text{ Btu/hr·ft}^2\text{·F}$
7. Measured Cold Side Surface Conductance ($hc$)  
   $5.09 \text{ Btu/hr·ft}^2\text{·F}$
8. Test Specimen Thermal Conductance ($Cs$)  
   $0.66 \text{ Btu/hr·ft}^2\text{·F}$
9. Convection Coefficient ($Kc$)  
   $0.34 \text{ Btu/(hr·ft}^2\text{·F}^{\circ})$
10. Radiative Test Specimen ($Qr_1$)  
    $611.02 \text{ Btu/hr}$
11. Conductive Test Specimen Heat Flow ($Qc_1$)  
    $647.68 \text{ Btu/hr}$
12. Radiative Heat Flux of Test Specimen ($qr_1$)  
    $14.10 \text{ Btu/hr·ft}^2\text{·F}$
13. Convective Heat Flux of Test Specimen ($qc_1$)  
    $14.94 \text{ Btu/hr·ft}^2\text{·F}$
14. Standardized Warm Side Surface Conductance ($hsth$)  
    $1.20 \text{ Btu/hr·ft}^2\text{·F}$
15. Standardized Cold Side Surface Conductance ($hstc$)  
    $5.28 \text{ Btu/hr·ft}^2\text{·F}$
16. Standardized Thermal Transmittance ($Ust$)  
    $0.39 \text{ Btu/hr·ft}^2\text{·F}$

**Test Duration**

1. The environmental systems were started at 08:15 hours, on 8/27/2015.
2. The test parameters were considered stable for two consecutive four hour test periods from 00:15 hours, on 8/28/2015 to 08:15 hours, on 8/28/2015.
3. The thermal performance test results were derived from 04:15 hours, on 8/28/2015 to 08:15 hours, on 8/28/2015.

The reported Standardized Thermal Transmittance ($Ust$) was determined using CTS method per Section 8.2 (A) of NFRC 102.

<table>
<thead>
<tr>
<th>Glazing Deflection (in.)</th>
<th>Left Section</th>
<th>Right Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap width upon receipt of sample in laboratory</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>Gap width at laboratory ambient condition on day of testing</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>Center of gap at conclusion of test</td>
<td>7/16&quot;</td>
<td>7/16&quot;</td>
</tr>
</tbody>
</table>
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.

The calibration of Fenestration Testing Laboratory’s “thermal test chamber” was conducted in June 2015.

“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 was from the interior (warm side) to the exterior (cold side) of the specimen.

Drawings referenced in this document are an integral part of this report, therefore, are required when distributing this test report. Test results obtained represent the actual value of the tested specimens and do not constitute opinion, endorsement or certification by this laboratory.

This test report is considered the exclusive property of the client named herein and is applicable to the sample tested. This report may not be reproduced without the approval of Fenestration Testing Laboratory, Inc and if so must be in full.

Rounding of numerical values are per NFRC 601, NFRC Unit and Measurement Policy.

Testing was conducted in full compliance with NFRC requirements.

As per the client, the sample described in this test report was a production line for initial certification.

An estimate of the measurement of uncertainty for these results is available upon request.
Revision History Table

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
<th>Author</th>
<th>Effective Date</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Initial Release</td>
<td>Jose Sanchez</td>
<td>9/24/2015</td>
</tr>
</tbody>
</table>

FENESTRATION TESTING LABORATORY, INC.

Jose Sanchez
Test Performed by

Jose Sanchez
Jose Sanchez

Person - in- Responsible- Charge

Digitally signed by Jose Sanchez
DN: cn=Jose Sanchez,
n=FTL Fenestration Testing Lab, ou, email=Jose@ftl.com, c=US
Date: 2015.11.24 06:58:54 -05'00'
APPENDIX

Fenestration Product Drawings and Bill of Material
NEP CMAST SUBMITTAL

FLS50T AMMA 50T E D S M A S T S U B M I T T A L

INDEX TO DRAWINGS AND NOTES

- INDEX TO DRAWINGS
- BILL OF MATERIALS
- STANDARD PLATING DETAILS
- STANDARD PLACING DETAILS
- STANDARDS PLACING DETAIL
- INDEX TO DRAWINGS AND NOTES

Drawings

Date: 1/24/2015

Tested simplecompile with this
<table>
<thead>
<tr>
<th>Bill of Materials</th>
</tr>
</thead>
</table>

**Notes:**
- Enter allergic reactant.
- Not for material.