Quality Accuracy Assurance

# Fenestration Testing Laboratory, Inc.

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## OFFICIAL TEST REPORT

| | | | |
|---|---|---|---|
| MANUFACTURER: | Flesher Windows, Inc. | DESIGNATION: | SGD-C60 144 x 96 |
| ADDRESS: | dba AAA Aluminum Stamping<br>511 Leonard Blvd., North<br>Lehigh Acres, Florida 33971 | SPECIFICATIONS: | ANSI/AAMA/NWWDA 101/I.S.2.-97 |

## DESCRIPTION OF UNIT

Model Designation: Series: 600; Aluminum Sliding Glass Door
Overall Size: 12' ½" (144 ½") by 8' 0" (96") high by 4.893" deep
Configuration: XXX
No. & Size of Panels: Three extruded aluminum panels and the sizes from the left are as follows: 4' 1 3/4" (49 3/4") by 7' 10 5/8" (94 5/8") high; 4' 2 ½" (50 ½") by 7' 10 5/8" (94 5/8") high; 4' 1 3/4" (49 3/4") by 7' 10 5/8" (94 5/8") high.

## MATERIAL CHARACTERISTICS

Frame Construction: Test unit has an equal leg type frame, butt joints with a white and mill finish. Aluminum alloy is 6063-T5. Frame corners were fastened with two No. 8 by 1" flat head sheet metal screws. Frame sill has an applied sill riser making overall sill flange 2.800" high. Size of frame members are as follows: frame head 5.030" by 1.375" by 4.906"; frame sill 5.732" by 0.375" by 6.045"; frame jambs 4.893" by 0.875". Frame members are a solid extrusions with typical wall thicknesses of 0.062".
Panel Construction: Panels have butt joints and a white coated finish. Aluminum alloy is 6063-T5, except where noted. Panel corners were fastened with one No. 8 by 1 1/4" pan head sheet metal screws. Size of stiles and rails are as follows: lock stiles 1.188" by 1.875"; interlock stiles (alloy 6063-T6) 2.064" by 2.800" by 1.514" by 1.124"; top rails (solid extrusions) 0.980" by 1.125" by 1.259"; bottom rails (solid extrusions) 2.298" by 0.980. Stiles and rails are hollow extrusions, except where indicated. Extrusions have typical wall thicknesses of 0.062".
Glazing:
Material: 3/16" tempered glass
Method: Panels are channel glazed with a 0.495" glazing penetration using a flexible vinyl glazing channel.
Daylight Opening: Clear opening of each panel, 45" by 91" high.
Weatherstripping:

| *Quantity* | *Description* | *Location* |
|---|---|---|
| Double row | pile with integral plastic fin | at each interlock stiles on the interior and exterior |
| Single row | pile with integral plastic fin | on the interior and exterior of frame jambs and top rails |
| Single row | vinyl flap | at bottom rails |

Hardware:

| *Quantity* | *Description* | *Location* |
|---|---|---|
| One | two ply hook lock with flush mount metallic handle, with no I.D. marks | at left and right moving panel lock stile, 42" from bottom |
| One | metallic keeper, with no I.D. marks | at frame jambs, 40" from bottom |

## MATERIAL CHARACTERISTICS

**Hardware:**

| *Quantity* | *Description* | *Location* |
|---|---|---|
| Six | adjustable single steel wheels in aluminum housing, with no I.D. marks | one at each end of each panel bottom rail |

**Weepholes:**

| *Quantity* | *Description* | *Location* |
|---|---|---|
| Four | ½" weep notch | one at frame sill of each panel track |

**Reinforcement:** None
**Sealants:** Installation screws, frame and panel corner seams were sealed with a white colored sealant.
**Pads:** None
**Screen:** None
**Additional Description:** One 3 /4" by 3" by 1/8" by 2" long aluminum angle at bottom of center panel interlock stile on the exterior and interior, (total of two), each fastened to panel with three No. 8 by ½" pan head self drilling screws. One 0.400" by 2 3/4" by 1/8" by 2" long aluminum angle at bottom of the right panel interlock stile on the exterior fastened to panel with three of the same type and size screws.
**Unit Installation:** Test unit was installed in 2 x 12 pressure treated wood test buck using a 2 x 8 buck strip. Frame installed with a triple row of No. 8 by 1" flat head sheet metal screws in frame head, frame sill and frame jambs. Location of installation screws are as follows: frame head and frame sill from the left, 6 ½", 30 ½", 48", 66 ½", 84 ½", 102 ½", 121" and 139"; frame jambs from the bottom, 4 ½", 37", 58 ½" and 91".
**Product markings:** None

## OFFICIAL TEST RESULTS

| Paragraph Number | Title of Test | Measured | | Allowed |
|---|---|---|---|---|
| 2.1.2 | Air Infiltration Test: (ASTM E283-96) at 6.24 psf | 0.26 cfm/sq.ft. (4.76 cmh/m2) | | Passed 0.3 (5.49) maximum |
| *Note*: | The tested specimen meets or exceeds the performance levels specified in specification reference | | | |
| 2.1.3 | Water Resistance Test: (ASTM E547/E331-96) no leakage at | 10.00 psf (479 Pa) | | Passed 4.50 (215) minimum |
| 2.1.4.2 | Uniform Structural Load Test: (ASTM E330-96) Positive Load | 90.0 psf (4309 Pa) | | Passed 45.0 (2155) minimum |
| | | Deflection | Permanent Set | |
| | Reading at interlock stiles | 1.895" (48.19 mm) | 0.049" (1.25 mm) | 0.379 (9.64) maximum |
| | Reading at frame sill | 0.095" (2.42 mm) | 0.001" (0.03 mm) | |
| | Reading at frame jamb | 0.069" (1.75 mm) | None | |
| 2.1.4.2 | Uniform Structural Load Test: (ASTM E330-96) Negative Load | 90.0 psf (4309 Pa) | | Passed 45.0 (2155) minimum |
| | Reading at interlock stiles | 1.901" (48.34 mm) | 0.056" (1.42 mm) | 0.379 (9.64) maximum |
| | Reading at frame sill | 0.115" (2.92 mm) | 0.003" (0.08 mm) | |
| | Reading at frame jamb | 0.078" (1.98 mm) | None | |

Reviewed by Engr
8/13/02

## OFFICIAL TEST RESULTS

| Paragraph Number | Title of Test | Measured | Allowed |
|---|---|---|---|
| 2.1.8 | Forced Entry Resistance Test<br>AAMA 1303.5-1976, Paragraph 3.1.1<br>Test A through 3.1.5 Test G | No entry | None Allowed |
| 2.2.19.5.1 | | | |
| | Starting Force | 19 pounds (84 N) | 30 (133) maximum |
| | Force to Open | 11 pounds (49 N) | 20 (89) maximum |
| | Force to Close | 12 pounds (53 N) | 20 (89) maximum |
| 2.2.19.5.2 | Deglazing Test: (ASTM E987) | | |
| | No disengagement at: | | |
| | Vertical Stiles | 70 pounds (311N) | 70 (311) minimum |
| | Horizontal Rails | 50 pounds (222N) | 50 (222) minimum |
| | Percent Deglazement | 5 percent | 99 maximum |

## SECTION 4, OPTIONAL PERFORMANCE CLASS:

| | | | | |
|---|---|---|---|---|
| 4.3 | Water Resistance Test: (ASTM E547/E331-96) | | | Passed |
| | no leakage at | 10.00 psf (479 Pa) | | 5.25 (251) minimum |
| 4.4.2 | Uniform Structural Load Test: (ASTM E330-96) | | | Passed |
| | Positive Load | 90.0 psf (4309 Pa) | | 52.5 (2514) minimum |
| | | **Deflection** | **Permanent Set** | |
| | Reading at interlock stiles | 1.895" (48.19 mm) | 0.049" (1.25 mm) | 0.379 (9.64) maximum |
| | Reading at frame sill | 0.095" (2.42 mm) | 0.001" (0.03 mm) | |
| | Reading at frame jamb | 0.069" (1.75 mm) | None | |
| 4.4.2 | Uniform Structural Load Test: (ASTM E330-96) | | | Passed |
| | Negative Load | 90.0 psf (4309 Pa) | | 52.5 (2514) minimum |
| | Reading at interlock stiles | 1.901" (48.34 mm) | 0.056" (1.42 mm) | 0.379 (9.64) maximum |
| | Reading at frame sill | 0.115" (2.92 mm) | 0.003" (0.08 mm) | |
| | Reading at frame jamb | 0.078" (1.98 mm) | None | |

*Note:* At conclusion of above tests, there was no apparent damage to unit, fasteners or glass and the panels were operable.

*Temperature: 74.0 F*
*Barometric: 30.12*

**Test Began - July 8, 2002**
**Test Completed - July 15, 2002**
**Test Report Expires - July 8, 2006**

Reviewed
8/13/02

*continued:*

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Remarks: This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and the performance requirements (paragraphs as listed) of the above referenced specifications. As per manufacturer, unit complies with section 3, material and component requirements.

Detailed assembly drawings showing wall thickness of all members, corner construction and hardware application are on file and have been compared to the sample submitted. A test sample will be retained at the test laboratory. A copy of this report and detailed drawings will be forwarded to the Validator.

*Note*: Test specimens were covered with a 1.5 mil plastic sheeting to seal from air leakage when load test were performed, however this had no effect on the above test results.

Witnessed by:
Mr. James G. Worth, P.E.
Mr. Luis Figueredo, P.E.

Reviewing Engineer:
Joseph Chan, P.E.

Author of Report
Maricruz Ayala

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A - Flesher Windows, Inc.
2 - ALI

**FENESTRATION TESTING LABORATORY, INC.**

Roberto Robleto
Testing Manager

Reviewing E
8/13/02

***Flesher Windows Inc.***
***DBA AAA Aluminum***

Comparitive Analysis Chart
Design Pressures
Sliding Glass Door 600 Series

Test Report FTL No. 3507-02-311
Design Pressure: +60.0/-60.0 PSF
Water Resistance Test: 10 P.S.F.

Test Size: 144" x 96"
Glazing: 3/16" Tempered Glass
Configuration: 1/1

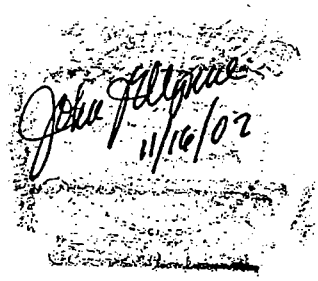
| Width>> | 24 | 30 | 36 | 42 | 48 | 54 | 60 |
|---|---|---|---|---|---|---|---|
| Heights | | | | | | | |
| 80" | 131.0 | 110.0 | 95.0 | 86.0 | 81.0 | na | na |
| 96" | 106.0 | 87.0 | 75.0 | 67.0 | 60.0 | na | na |
| 120" | na | na | na | na | na | na | na |

Limitations

The above are Structural Designs from Comparitive Analysis and have not been capped by water resistance or glass thickness. The Positive Design Pressure for water Resistance should be capped at 66.6 PSF. The ASTM-1300 Glass Chart must be used to comply with the pressues for each product.

Test Report and results from these charts indicate compliance with ANSI/AAMA/NWWDA 101/I.S.2-97.

CENTRAL FLORIDA B.O.A.F.
MANUFACTURER NAME: FLESHER WINDOW
MASTER FILE # 6



FLESHER WINDOWS
DBA AAA ALUMINUM

Glass Design Pressure
Resistance - ASTM 1300
600 Series Sliding Glass Door

| | Maximum Allowable PSF Design Load 3/16" Tempered | | | | | | |
|---|---|---|---|---|---|---|---|
| Panel Width >> | 24" | 30" | 36" | 42" | 48" | 54" | 60" |
| Panel Height | | | | | | | |
| 80" | 199 | 131 | 104 | 102 | 101 | 97.3 | 91.1 |
| 96" | 187 | 118 | 88.3 | 79.5 | 79.4 | 79 | 76.1 |
| 120" | 178 | 108 | 76.4 | 61.2 | 58.8 | 58.5 | 57.9 |

| | Maximum Allowable PSF Design Load 1/4" Tempered | | | | | | |
|---|---|---|---|---|---|---|---|
| Panel Width >> | 24" | 30" | 36" | 42" | 48" | 54" | 60" |
| Panel Height | | | | | | | |
| 80" | 296 | 189 | 143 | 126 | 121 | 118 | 113 |
| 96" | 278 | 172 | 123 | 101 | 95.5 | 94.3 | 92.4 |
| 120" | 243 | 160 | 110 | 83.4 | 72.6 | 69.4 | 69.3 |

Design Pressures were calculated using "Comprehensive Glass Design V 1.2" software
Design Pressures may exceed Comparative Analysis and Product Testing
The lowest pressure of the two must be used to find the correct pressure

ASTM-1300
Aug-1-2002

CENTRAL FLORIDA [illegible]

MANUFACTURER NAME:
FLESHER WINDOW

MASTER FILE # 6

11/16/02