TEST REPORT # T906-1

DATE: June 10, 2014

CLIENT: Fleetwood Windows and Doors
1 Fleetwood Way
Corona, California
92879
P.O. Box 1086 Corona, California 92878-1086
Contact: Joseph Zammit

SAMPLE ID: Atlantic 3900 Single Outswing Aluminum Door

SAMPLE DESCRIPTION: Width: 1320 mm Height: 2440 mm See page 3 for full description.

SAMPLING PROCEDURES: See page 2 for the sampling procedure.

DATE OF RECEIPT: December 6, 2013

DATE(S) OF TESTING: May 7, 2014


TEST RESULTS: See Page 3 for the test results.

CONTENTS: Test Report Pages 1 through 7, Appendix A1 through A22

TESTING PERFORMED AT: Quality Auditing Institute, Coquitlam

Reported By

Reviewed By

Neil Dumont
Project Manager

Jason Komorski
Fenestration Reviewer
Sampling Plan/Procedures:

One unused, Atlantic 3900 Single Outswing Aluminum Door was provided by the client as a typical production sample and examined at the QAI laboratory to determine compliance with the submitted documentation, then tested on May 7, 2014 as being representative of the model covered in this report.

Test Conditions:

Quality Auditing Institute Ltd. (QAI) was retained by Fleetwood Windows and Doors to perform testing in accordance with the mandatory test requirements of AAMA/WDMA/CSA 101/I.S.2/A440-08 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights on a representative sample of a 1320 mm x 2440 mm Atlantic 3900 Single Outswing Aluminum Door.

This report includes tests performed on a specimen of specific dimensions. Actual product performance may be affected by variations in the products dimensions, assembly details and installation method. The drawings supplied by Fleetwood Windows and Doors were verified by QAI for the unit tested and are shown in Appendix A.

The test specimen was installed by the manufacturer into a wood test buck as described below. The door frame was fastened to the wooden test buck using #10 x 2-1/2"screws spaced approximately 16" apart through the head and jambs. No fasteners are used through the sill.

The wooden test buck consisted of a nominal 2" x 6" stud framing. The center of the wooden test buck was built with a rough opening measuring the exact size of the test specimen in length and width.
Product Ratings:

Table 1: Summary of test results

<table>
<thead>
<tr>
<th>Test Name</th>
<th>AAMA/WDMA/CSA 101/I.S.2/A440-08 NAFS - North American Fenestration Standard / Specification for windows, doors and skylights Result:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Force To Latch Test (5.3.1.2.1)</td>
<td>Pass – 8.7 lbf</td>
</tr>
</tbody>
</table>
| Air Leakage Resistance (ASTM E283)                         | Pressure differential = 75 Pa A3 Level  
Infiltration result = 0.340 L/s/m² (0.067 cfm/ft²) - A3 Level  
Exfiltration result = 0.399 L/s/m² (0.079 cfm/ft²) - A3 Level |
| Water Penetration Resistance Test (ASTM E331)               | Maximum pressure differential = 290 Pa (PG 40 - 6.00 psf)                                                                       |
| Uniform Load Deflection Test at Design Pressure (ASTM E330 – Procedure A) | Maximum pressure differential = 2400 Pa (PG 50 - 50 psf)                                                                       |
| Uniform Load Structural Test (ASTM E330 – Procedure A)     | Maximum pressure differential = 3600 Pa (PG 50 - 75 psf)                                                                       |

Performance Classification: LC\(^b\)  
Performance Grade: PG 40\(^b\)  
Maximum Size Tested: 1320 mm wide x 2440 mm tall (52” x 96”)

Primary Designator: 
Class LC – PG40: Size tested 1320 x 2440 mm (52 x 96 in) – Side Hinged Door (Type SHD)  
Class LC – PG1920 (metric): Size tested 1320 x 2440 mm – Side Hinged Door (Type SHD)

Secondary Designator:  
Positive Design Pressure (DP) = 2400 Pa (50 psf)  
Negative Design Pressure (DP) = -2400 Pa (-50 psf)  
Water Penetration Resistance Test Pressure = 290 Pa (6.00 psf)  
Canadian Air Infiltration / Exfiltration = A3 Level

Note: AAMA/WDMA/CSA 101/I.S.2/A440-08, Clause 5.2.5: The air, water and structural tests were performed on test specimens installed per the method outlined in the test conditions section of this report. The test procedures are designed to test the performance of the test specimen only and are not used to test the performance of the installation, in particular the perimeter sealant joint and the anchoring of the assembly. However, products not installed according to the installation method described in this report may not perform to an equivalent performance level.

\(^b\) The following tests were not completed: -Deadbolt Force Test (5.3.1.2.2) -Forced Entry (AAMA 1304) - Operation/cycling performance (5.3.6.10) -Vertical Loading Resistance (Clause 5.3.6.11)
Description:

| Frame: | Description: | Jambs and Head – The door frame is two pieces of extruded aluminum joined by a thermal break, all by Fleetwood, part # 3911. The interior of the frame is capped with a snap in aluminum extrusion part # 3910. The sill is a three piece assembly from Fleetwood, consisting of two aluminum profiles joined by a thermal break, part #3904. The sill has active drainage ports to the exterior without covers or drain flaps. An interior cap, part # 3912 snaps into the frame to hide hardware and fasteners. Frame dimensions: Width: 1320 mm Height: 2440 mm |
| Joints: | | The sill is fastened to the jambs with three #10 machine screw that is 2.5" long. The screws run through the jamb and thread into pilot channels of the sill extrusion. At the head the jambs are notched so that only 1/4" extends past the head. Six #10 machine screws 1” long hold the head. |

| Slab: | Description: | The door slab is made of extruded aluminum stiles and rails by Fleetwood. Stiles and rails - part # 3902 Sash dimensions: Width: 1200 mm Height: 2350 mm |
| Joints: | | The stile and rails of the door slab are joined with corner blocks part # 25167 (cut from Profile 3906). The corner blocks support a 3/8” x 2-1/4” bolt through a bolt plate that is welded to the rails. Tightening the bolt with a nut and split washer snugs the stile and rail together. |

| Weather-stripping: | Slab: | Two types of weather stripping are used around the edge of the door slab both inserted in an Atlantic Seal Clip, part # 3916, near the exterior face. The hinge side stile has no slab weatherstripping. Sill – part # 25196 Foam Seal 32390 Latch Side Stile and Head - # 25189 Q-Lon Foam Seal Q225T190 See photos in Appendix A. |
| Frame: | | The jambs and head have two bulb seals that sit side by side in T-slots and contact the interior face of the door near the edge. The bulb seals are vinyl part # 20587. An additional bulb seal on the head frame contacts the top edge of the door slab near the exterior face. The bulb seal is by Q-Lon, part # 25058. Corners are cut with a slight overlap to match the adjoining weatherseal’s profile. The sill has one length of Q-Lon foam seal, part # 25059 that contacts the interior face on the bottom of the door that butts into the jamb with the edges siliconed. |

| Glazing Method: | Exterior Seal (Dry Seal): | The exterior seal is made by compression against a vinyl bulb gasket part # 25199 that fits into a T-sloot in the frame. Corners are cut with a slight overlap to match the adjoining weatherseal’s profile. See photos in Appendix A. |
| Interior Seal (Glazing bead): | A snap in aluminum glazing bead, part # 3907 snaps in flush with the frame. A vinyl bulb part # 25031 in the glazing bead forms a seal. Corners? |

| Glazing: | Description: | Two 6mm tempered glass panes, 25mm overall thickness |
| Drainage: | Sash: | A 3/8” hole is drilled though the thermal breaks from below the glazing unit approximately 2” from the jamb. The hole allows pressure equalization around the glazing unit and drainage of water. See photos in Appendix A. |
| Frame: | | The sill has a trough below the edge of the slab that drains to 1/4"x 1” exterior weepholes. No weephole covers are used. |
**Single Outswing Aluminum Door Continued**

| Hardware: | Latch and lock: The latch and locking hardware is a multipoint locking system with shoot bolts manufactured by Sentry. The latch engages at the handle, two pivoting locks located 22" above and below the latch as well as two shoot bolts into brass keepers in the head and sill. The multipoint assembly fastens to the door slab with #8 - 1" screws. See drawing A11 in appendix A for screw locations. Multi-point actuator – part # 25039 Handle – part # varies by color Shootbolts – part # 25054 Brass Shoot bolt cup – part # 20542 Lock cylinder – part # 25053 Additional items listed in Appendix A |
| Strike Plates: | A single strike plate, part # 24993 catches both the latch and lock and is installed with three #10 1/2" screws. Two tongue strike plates, part # 25055 are located to catch the pivot out tongue bolts above and below the latch. They are secured with two #8 1/2" screws. |
| Hinges: | Four adjustable butt hinges from Savio are located 8-1/2" and 31" from the top and bottom of the door. The hinges are fastened to the door with two hinge bolts part # 25026. |
CONCLUSION:


Test results in this report may not be reproducible in the field. Test results relate only to those products tested.

See Table 1 for a summary of test results and product ratings. The sample tested was found to comply with the applicable requirements and obtained test results as reported in Table 1 of this report.
APPENDIX A

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<td>A3-A9</td>
<td>Component profile drawings</td>
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<td>A10-14</td>
<td>Hardware drawings</td>
</tr>
<tr>
<td>A15-A22</td>
<td>Sample Pictures</td>
</tr>
</tbody>
</table>
OUT-SWING DOOR
1" INSULATED GLAZING SHOWN

TEST SPECIFICATIONS:
1. SERIES / MODEL: ATLANTIC 3900
2. PRODUCT TYPE: HINGE SWING

GENERAL NOTES:
1. BUILDING OPENINGS & DOORS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER LOADS TO THE STRUCTURE AND TO BE RESISTED BY BUILDING SPECIALS.
2. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & MAY NOT USE ITEMS SPECIFICALLY MENTIONED OR THE DRAWING.
3. MATERIALS POLISHED BUT NOT LIMITS TO STEEL SERRORS, THAT COME INTO CONTACT WITH OTHER INSULATING MATERIALS SHALL MEET THE REQUIREMENTS OF AAMA AND BUILDING CODES.

SPECIFICATIONS:
1. AAMA 2004-10, 2005-10, 2006-10
2. AAMA 2006-06 (CANADIAN SUPPLEMENT)

JOINERY CONSTRUCTION:
1. PANELS: HDG. SHEETS, THE EDGES ARE BUTTED TOGETHER, AND ATTACHED WITH SCREWS.
2. PANEL CORNERS: THE STILES AND WALLS ARE BUTTED TOGETHER BY HEDGES AND NUTS.

ANCHOR SCHEDULE:
1. GLAZING: 1" INSULATED GLASS

HARDWARE TEST OPTIONS:
1. HARDWARE 5 CLEAR HINGES, 2.5" FROM CORNER, 2.5" APART, 4 HINGES.
2. HARDWARE 5 CLEAR HINGES.
FIG. 27 SENTRY HINGED PATIO DOOR LOCKS
5 POINT TONGUE AND SHOOTBOLT PANEL PREPARATION

<table>
<thead>
<tr>
<th>Upper Strike Location</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Height</td>
<td></td>
</tr>
<tr>
<td>71&quot; - 81&quot;</td>
<td>12.39 (313.9mm)</td>
</tr>
<tr>
<td>81&quot; - 97&quot;</td>
<td>21.39 (543.9mm)</td>
</tr>
<tr>
<td>97&quot; - 133&quot;</td>
<td>37.39 (949.7mm)</td>
</tr>
<tr>
<td>133&quot; - 121&quot;</td>
<td>45.39 (1151.9mm)</td>
</tr>
</tbody>
</table>
FIG. 28 SENTRY HINGED PATIO DOOR LOCKS
5 POINT TONGUE AND SHOOTBOLT GEAR AND LOWER BAR ASSEMBLY

Appendix A12 of A22

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THIS REPORT DOES NOT CONSTITUTE CERTIFICATION.
Quality Auditing Institute
Test Report #: T906-1
Client: Fleetwood Windows and Doors
Date: June 10, 2014

Fig. 1 – Installation screws through frame

Fig. 2 – Slab glazing bead

Fig. 3 – Setting block location in slab
Fig. 4 – Slab frame glazing seal

Fig. 5 – Slab drainage hole through thermal break

Fig. 6 – Stile and rail connection and frame profile
Fig. 7 – Slab weather seals (head to stile)

Fig. 8 – Stile and rail connection with multipoint shootbolt engaged.

Fig. 9 – Upper shootbolt.
Fig. 10 – Lower shootbolt

Fig. 11 – Multipoint latch with lock engaged

Fig. 12 – Tongue latch engaged position
Fig. 13 – Multipoint lock and handle

Fig. 14 – Frame weatherseals and brass shootbolt cup

Fig. 15 – Sill weatherstripping and brass shootbolt cup
Fig. 16 – Sill drainage

Fig. 17 – Silicone at weatherseals on sill

Fig. 18 – Latch and lock catch
Fig. 19 – Tongue keeper

Fig. 20 – Slab hinge half

Fig. 21 – Frame hinge half
Fig. 22 – Welding on corner bolt plate