AAMA/WDMA/CSA
TEST REPORT

Rendered to:

DON YOUNG COMPANY
8181 AMBASSADOR ROW
DALLAS, TX 75247

PRODUCT TYPE: PVC Sliding Door
SERIES/MODEL: 6320 Series Sliding Glass Door

Title	Summary of Results
ANSI/AAMA/WWDMA 101/I.S.2-97	SGD-R50 71 x 80
101/I.S.2/NAFS-02	SGD-R50 1810 x 2020 (71x 80)
AAMA/WDMA/CSA 101/I.S.2/A440-05	SD-R50 1810 x 2020 (71 x 80)
AAMA/WDMA/CSA 101/I.S.2/A440-08	Class R – PG50- Size Tested 1810 x 2020 (71 x 80)-Type SD
Design Pressure	2400 Pa (50.0 psf)
Operating Force (in motion)	40 N (9 lbf)
Air Infiltration	0.40 L/s/m² (0.08 cfm/ft²)
Water Penetration Resistance Test Pressure	360 Pa (7.50 psf)
Uniform Load Structural Test Pressure	±3600 psf (75.0 psf)
Forced Entry Resistance	Grade 30

Test Completion Date: 1/11/2010

Reference must be made to Report No. QCT9-1653.03A, dated 12/14/2009 for complete test specimen description and data.

AAMA/WDMA/CSA TEST REPORT

Rendered to:

DON YOUNG COMPANY
8181 AMBASSADOR ROW
DALLAS, TX 75247

Report No.: QCT9-1653.03A
Test Dates: 12/14/2009
Through: 1/11/2010
Report Date: 1/11/2010
Revised Report Date: 04/11/2012
Expiration Date: 1/11/2014

Project Summary: Quast Consulting and Testing, Inc. was contracted by Jean Marois at Thermoplast Inc. to perform testing on a Series/Model 6320 Sliding Glass Door. The samples were supplied to us by Thermoplast Inc. and were tested and met the performance requirements set forth in the referenced test procedures for a ±50.0 psf Design Pressure. Test specimen description and results are reported herein. This report is being re-issued in Don Young Company name per an email from Jean Marois dated April 4th, 2012. Test specimen description and results are reported herein.

Test Procedure: The test specimen was evaluated in accordance with:

AAMA/WDMA/CSA 101/I.S.2/A440-08:	Class R-PG50-Size Tested 1810 x 2020 (71 x 80)-Type SD
Secondary Designator(s)	Design Pressure = 2400 Pa (50 psf) Negative Design Pressure = 2400 Pa (50 psf) Water Penetration Resistance Test Pressure = 360 Pa (7.50 psf) Canadian Air Infiltration/Exfiltration = A3
AAMA/WDMA/CSA 101/I.S.2/A440-05:	SD-R50 1810 x 2020 (71 x 80)
ANSI/AAMA/WDMA 101/I.S.2/NAFS-02:	SGD-R50 1810 x 2020 (71 x 80)
ANSI/AAMA/NWWDA 101/I.S.2-97:	SGD-R50 71 x 80

Test Specimen Description:

Series/Model: 6320 Series Sliding Glass Door

Product Type: PVC Sliding Door

Overall Size: 1810 mm (71-1/4") wide by 2020 mm (79-1/2") high

Active Panel Size: 903 mm (35-9/16") wide by 1950 mm (76-3/4") high

In-active Panel Size: 899 mm (35-3/8") wide by 1950 mm (76-3/4") high

Half Screen Size: 905mm (35-5/8") wide by 1978 mm (77-7/8") high

Overall Area: 3.65 m^2 (39.3 ft^2)

Finish: All vinyl was white.

Frame Construction: The extruded PVC frame was constructed using milled straight cut, sealed with foam pad and screwed together corner construction. The frame was constructed of a sill (7088), head jamb (7074) and side jambs (7074). The antilift block (7018) is installed into the active side head jamb. Then a sash stopper (7010) is snap fit into place on the active side head jamb and sill. A fixed panel support block (7090) is used at the sill and was sealed with silicone under it at each end. The interior sill leg was reinforced with a 12 gauge steel (RF-7088) plate. An impervious block with weatherstrip (HF-7320-187) was installed into the sash with a #8-32 by 2-1/2" Oval head machine screw and to the sill with a #10 by 1-1/4" pan head screw. The active panel bottom rail used an aluminum sash track (013) that was snap fit into the sill. The exterior of the sill used an aluminum screen track (015) that was snap fit into place. The sill also utilized two weep hole covers (66900-001).

Panel Construction: The extruded PVC panel was constructed using mitered and thermally welded corner construction. The active panel consisted of head and sill rails (7076) and a pull stile (7076) and a meeting stile (7080). The pull stile was reinforced with an aluminum channel (017). The meeting stile was reinforced with a 12 gauge galvanized steel "V" channel (RF-7080). A screwing insert (7011) is utilized in the fixed panel stiles and rails before the corners are welded together. The inactive panel consisted of head and sill rails (7078) and a pull stile (7078) and a meeting stile (7084). The meeting stile was reinforced with a 12 gauge galvanized steel plates (RF-7084). Screw covers (2828-187-PP-OW-10) are utilized on the panel stiles.

Test Specimen Description: (Continued)

Weatherstripping:

Type	Quantity	Location
Pile T-slot (HF-7320-187) Schlegel	1 continuous row	Exterior meeting stile
Pile T-slot (HF-7320-187) Schlegel	1 continuous row	Interior meeting stiles
Pile T-slot (HF-7320-187) Schlegel	2 continuous row	Interior of frame head, edges
Pile T-slot (HF-7320-187) Schlegel	2 continuous rows	Interior of frame jambs, edges
Pile T-slot (PB-8322-187) Schlegel	1 row	Interior of frame sill, edge
Pile T-slot (PB-8315-187) Schlegel	1 continuous row	Interior of frame head, top
Pile T-slot (PB-8315-187) Schlegel	1 continuous row	Interior of frame sill, bottom
Foam Block & PVC (XC-1064)	1	Intersection of meeting stiles, on the sill

Glazing: The window utilized a nominal 22mm (7/8") insulated glass consisting of two 3mm (1/8") thick clear tempered panes of glass separated by an 16mm (5/8") thick, air filled aluminum spacer. The glass measured 819mm (32-1/4") wide by 1864mm (73-3/8") high. The glass was set from the interior against the soft nibs that were coextruded with the sash extrusion and cozy glue. Twenty setting blocks 6 mm x 24 mm x 51 mm (1/4" x 15/16" x 2") were utilized on the stiles and rails on both panels. The interior glazing stops (7021) were snap fit into place after the glass was set.

Test Specimen Description: (Continued)

Drainage System:

Description	Quantity	Location
Weep slot 19mm (3/4") by 3.2mm (1/8")	2	31.7mm (1-1/4") in from outside corners of sill (6358)
Weep slot 19mm (3/4") by 3.2mm (1/8")	2	38.1mm (1-1/2") in from outside corners of sill (6358)
Weep slot 13.7mm (17/32") by 3.2mm (1/8")	2	63.5mm (2-1/2") in from outside corners of sill (6358)
Weep slot 25.4mm (1") by 3.2mm (1/8")	2	88.9mm (3-1/2") in from outside corners of sill (6358)
Weep slot 25.4mm (1") by 3.2mm (1/8")	2	25.4mm (1") in from outside corners of mullion (8004)
Weep slot 15.8mm (5/8") by 3.2mm (1/8")	2	82.5mm (3-1/4") in from outside corners of sash (7317)
Weep hole 4mm (5/32")	4	27mm (1-1/16") and 64.5mm (2-17/32") in from outside corners of sash (7317)

Hardware:

Slider Plate/Face Plate	1	36-1/4" up from bottom of sill
Keeper	1	36-1/4" up from bottom of sill
Interior Handle (Fasco)	1	34-3/4" up from bottom of stile
Exterior Handle (Fasco)	1	34-3/4" up from bottom of stile
Tandem Roller Carriage (A11)	2	Bottom corners of active panel

Test Specimen Description: (Continued)

Reinforcement: Panel meeting stiles and pull stile.

Screen: The screen was constructed using extruded aluminum frame (014) with the corners miter cut and screwed together (CD-342), handle and keeper, screen spline, screen bug strip (SS6945) a roller (CD-342) on the rails and fiberglass mesh. The screen was held in place by the frame head and side jamb.

Installation: The door was installed into an eastern white pine 38mm x 286mm (1-1/2" x 11-1/4") wood test buck with no rough opening gap on all four sides. The door was secured to the buck at the sill with steel nailing strip (4560) and #10 by 32mm (1-1/4") pan head square drive screws spaced 203mm (8") from the corners and 351mm (13-13/16") on center thereafter. The rest of the unit utilized #10 by 51mm (2") flat head square drive screws through the frame method. The head jamb screws were spaced 203mm (8") from the corners and 351mm (13-13/16") on center thereafter. The side jambs screws were spaced 203mm (8") from the corners and 406mm (16") on center thereafter. The units were sealed with silicone on the exterior side only.

Test Results: The temperature during testing was 13°C (55°F). The results are tabulated as follows.

Paragraph	Title of Test – Test Method	Results	Allowed
5.3.1	Operating Force per ASTM E 2068		
	Open Initiate motion	40 N (9 lbf)	135 N (30 lbf)
	Open Maintain motion	40 N (9 lbf)	90 N (20 lbf)
	Close Initiate motion	44 N (10 lbf)	135 N (30 lbf)
	Close Maintain motion	40 N (9 lbf)	90 N (20 lbf)
5.3.1.1.3	Force to Latch		
	Open	4 N (1 lbf)	100 N (22.5 lbf)
	Close	9 N (2 lbf)	100 N (22.5 lbf)
5.3.2	Air Infiltration per ASTM E 283		
	75 Pa (1.6 psf, 25 mph)	0.40 L/s/m² (0.08 cfm/ft²)	1.5 L/s/m² (0.30 cfm/ft²)max
5.3.2.2	Air Exfiltration		
	-75 Pa (1.6 psf, 25mph)	0.40 L/s/m² (0.08 cfm/ft²)	---------- ----------

Test Results: (Continued)

Paragraph	Title of Test – Test Method	Results	Allowed
	Average = A3	0.40 L/s/m² (0.08 cfm/ft²)	<0.5 L/s/m² (0.1 cfm/ft²)

Note #1: *The tested specimen meets (or exceeds) the performance levels specified in ANSI/AAMA/NWWDA 101/I.S.2-97, 101/I.S.2/NAFS-02, AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA/WDMA/CSA 101/I.S.2/A440-08 for air infiltration.*

5.3.3.2	Water Resistance per ASTM E 547 (with and without insect screen) 360 Pa (7.50 psf)	No leakage	No leakage

5.3.4.2	Uniform Load Deflection per ASTM E 330 (Deflections reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	Exterior meeting stile span, mm (in.)	1892 mm (74.50")	----------
	2400 Pa (50.0 psf) (positive)	43.9 mm (1.73")	See Note #2
	2400 Pa (50.0 psf) (negative)	35.0 mm (1.38")	See Note #2

Note #2: *There are no maximum allowable deflection criteria for this product designation in accordance with ANSI/AAMA/NWWDA 101/I.S.2-97, 101/I.S.2/NAFS-02, AAMA/WDMA/CSA 101/I.S.2/A440-05 and AAMA/WDMA/CSA 101/I.S.2/A440-08.*

5.3.4.3	Uniform Load Structural per ASTM E 330 (Permanent set reported were taken on the exterior meeting stile) (Loads were held for 10 seconds)		
	3600 Pa (75.0 psf) (positive)	3.98 mm (0.157")	<0.4%L = 7.57 (.298")
	3600 Pa (75.0 psf) (negative)	3.68 mm (0.145")	<0.4%L = 7.57 (.298")

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Test Results: (Continued)

Paragraph	Title of Test – Test Method	Results	Allowed
5.3.5	Forced Entry Resistance per ASTM F 842		
	Type A	Grade 30	
	Disassembly Test	No Entry	No Entry
	Test A1 – A6	No Entry	No Entry
	T1 = 10 min		
	L1 = 3559 N (800 lbf)		
	L2 = 1779 N (400 lbf)		
	L3 = 445 N (100 lbf)		
	L4 = 467 N (105 lbf)		
	Sash/Panel Manipulation Test	No Entry	No Entry
	Lock Hardware Manipulation Test	No Entry	No Entry
5.3.6.2	Thermoplastic Corner Weld	Meets as stated	Meets as stated
5.3.6.3	Deglazing Test		
	In operating direction – 320 N (70 lbs)		90%
	Interior panel left stile	0.25 mm (0.01")	15.0 mm (0.59")
	Interior panel meeting stile	0.50 mm (0.02")	15.0 mm (0.59")
	Exterior panel meeting stile	0.00 mm (0.00")	15.0 mm (0.59")
	Exterior panel right stile	0.00 mm (0.00")	15.0 mm (0.59")
	In remaining direction – 230 N (50 lbs)		90%
	Interior panel top rail	0.00 mm (0.00")	15.0 mm (0.59")
	Interior panel bottom rail	0.25 mm (0.01")	15.0 mm (0.59")
	Exterior panel top rail	0.00 mm (0.00")	15.0 mm (0.59")
	Exterior panel bottom rail	0.25 mm (0.01")	15.0 mm (0.59")

Drawing Reference: The test specimen drawings have been reviewed by Quast Consulting and Testing, Inc. and are representative of the test specimen reported herein.

List of Official Observers:

Name:	Company:
Rhonda Schotz	Quast Consulting and Testing Inc
Brian Sasman	Quast Consulting and Testing Inc

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Quast Consulting and Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such material shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen can be made. 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 specimens tested. This report may not be reproduced, except in full, without the written approval of Quast Consulting and Testing, Inc.

QUAST CONSULTING & TESTING, INC.

Rhonda Schotz
Product Certification Manager

QUAST CONSULTING & TESTING, INC.

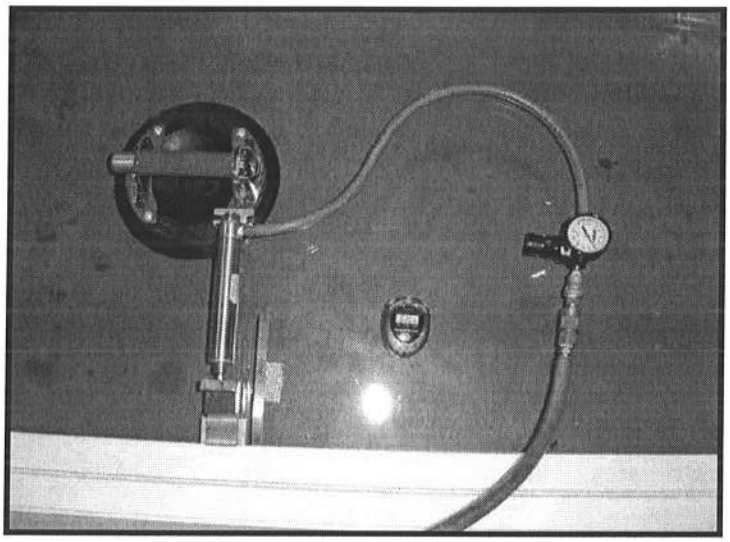
Brian M. Sasman P.E.
Reviewer

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

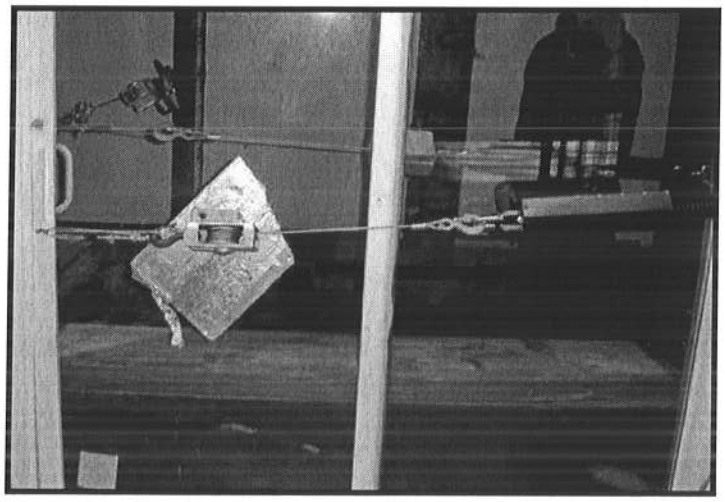
Appendix-A:	Test photos
Appendix-B:	Drawings
Appendix-C:	Revision Log

Appendix A

Deglazing Test Photo



Forced Entry Test Photo



QUAST CONSULTING AND TESTING, INC.
Exterior Façade/Fenestration Consulting & Testing
1055 Indianhead Drive • P.O. Box 241 • Mosinee, WI 54455-0241 • Phone: 715-693-TEST (8378) • Fax: 715-693-0689 •
www.qcandt.com

Appendix C

Revision Log

Revision #	Date	Description
A	4/11/2012	Added force to latch data on page 6 of this report.