NATIONAL CERTIFIED TESTING LABORATORIES

FIVE LEIGH DRIVE • YORK, PENNSYLVANIA 17406 • TELEPHONE (717) 846-1200
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AAMA/WDMA/CSA 101/I.S.2/A440-11
AAMA/WDMA/CSA 101/I.S.2/A440-08
AAMA/WDMA/CSA 101/I.S.2/A440-05

TEST REPORT SUMMARY

Rendered to:

CLIMATEGUARD MANUFACTURING
2500 North Pulaski
Chicago, IL 60639

PRODUCT TYPE: Patio Door (Type OX)

SERIES/ MODEL: "Climateguard 5000"

Title	Summary of Results
Primary Product Designator AAMA/WDMA/CSA 101/I.S.2/A440-11 AAMA/WDMA/CSA 101/I.S.2/A440-08 AAMA/WDMA/CSA 101/I.S.2/A440-05	Class R-PG25: Size tested 2007 x 2007 mm (~79 x 79 in) - Type SD Class R-PG25: Size tested 2007 x 2007 mm (79 x 79 in) - Type SD SD-R25 2007 x 2007 (79 x 79)
Positive Design Pressure	+1200 Pa (+25.06 psf)
Negative Design Pressure	-1200 Pa (-25.06 psf)
Operating Force (in $motion_{max}$)	36 N (8 lbf)
Air Infiltration	0.5 L/s/m^2 (0.10 cfm/ft^2)
Water Penetration Resistance Test Pressure	180 Pa (3.76 psf)
Uniform Load Structural Test Pressure	±1800 Pa (37.59 psf)
Forced Entry Resistance	ASTM F842-04 - Grade 10 Pass

Test Completed: 10/15/14

Reference must be made to Report No. NCTL-110-17438-1 dated 10/27/14 for complete test specimen description and data.

For National Certified Testing Laboratories

Jay Leader
Technician

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STRUCTURAL TEST REPORT

NCTL-110-17438-1

REPORT TO:
CLIMATEGUARD MANUFACTURING
2500 NORTH PULASKI
CHICAGO, IL 60639

REPORT NUMBER: NCTL-110-17438-1
REPORT DATE: 10/27/14

PRODUCT:
"CLIMATEGUARD 5000"
PATIO DOOR (TYPE OX)

Report Number	NCTL-110-17438-1
Report Date	10/27/14
Report To	ClimateGuard Manufacturing 2500 North Pulaski Chicago, IL 60639
Test Date	10/15/14
Specification	AAMA/WDMA/CSA 101/I.S.2/A440-11 NAFS 2011 - North American Fenestration Standard/Specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-08 NAFS North American Fenestration Standard/Specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-05 Standard/Specification for Windows, Doors, and Unit Skylights
Performance Results	AAMA/WDMA/CSA 101/I.S.2/A440-11 Class R-PG25: Size tested 2007 x 2007 mm (~79 x 79 in)-Type SD AAMA/WDMA/CSA 101/I.S.2/A440-08 Class R-PG25: Size tested 2007 x 2007 mm (79 x 79 in)-Type SD AAMA/WDMA/CSA 101/I.S.2/A440-05 SD-R25 2007 x 2007 (79 x 79)

Description of Specimen Tested

Note: All dimensions are in the order (Width x Height x Thickness) unless otherwise noted.

Model/ Series	ClimateGuard 5000
Configuration	Patio Door (Type OX)
Frame Size	Overall 2007 mm x 2007 mm (79” x 79”)
Active Panel Size	1026 mm x 1946 mm (40.375” x 76.625”)
Viewing Area	(2) 913 mm x 1835 mm (35.938” x 72.25”)
Frame and Panel Type	Extruded vinyl
Joint Construction	Frame/ Panel Mitered, welded Fixed Meeting Stile (3) Screw butt-type
Glazing Components	
Overall	25.4 mm (1”) nominal
Glass Thickness	(2) Lites of 4 mm (0.151”) nominal tempered glass
Spacer Type/Size	17.73 mm (0.698”) Coated U-shaped steel spacer (Type CU-D)
Glazing System	Exterior glazed with foam tape back-bedding, a silicone heel bead and a snap-in rigid vinyl glazing bead.

Weatherstrip

Type	(1) Strip center fin
Size	3.35 mm (0.250”) high
Location	Center frame leg perimeter
Type	(1) Strip center fin
Size	5.84 mm (0.230”) high
Location	Fixed meeting stile

Operating Hardware

Locks

Type	Metal claw-type lock
Location	972 mm (38.25”) From the bottom of the lock stile

Keeper

Type	Metal
Location	Lock jamb at the lock location

Auxiliary

Type	Rigid vinyl track cover with roller guide
Location	Sill screen retainer
Type	Rigid vinyl sill adapter
Location	Exterior sill track
Type	Rigid vinyl track cover with stainless steel roller guide
Location	Interior sill track
Type	Rigid vinyl glazing adapter
Location	Fixed portion of the exterior head and sill track
Type	Rigid vinyl anti-lift clip
Location	Interior head track
Type	Rigid vinyl stop
Location	Interior sill track
Type	Adjustable double metal roller/ metal housing
Location	133.35 mm (5.25”) From each end of the bottom rail

Reinforcement

Type	Steel contour-shaped reinforcement bar
Thickness	1.52 mm (0.060”)
Location	Lock stile
Type	Steel C-shaped reinforcement bar
Thickness	1.52 mm (0.060”)
Location	Active meeting stile
Type	Steel U-shaped reinforcement bar
Thickness	1.52 mm (0.060”)
Location	Fixed meeting rail

Weep Description

Size	4.78 mm (0.188”) diameter
Location	15.88 mm (0.625”) From each end and midspan of the interior sill track cover
Size	19.05 mm wide x 7.95 mm high (0.75” x 0.313”)
Location	19.05 mm (0.625”) From each end and midspan of the interior sill track cover
Size	25.4 mm wide x 3.18 mm high (1” x 0.125”)
Location	104.78 mm (4.125”) From each end of the screen retainer track cover

Weep Description (Continued)

Size	25.4 mm wide x 4.78 mm high (1” x 0.188”) with weep cover
Location	114.3 mm (4.5”) From each end of the exterior sill face
Size	25.4 mm wide x 6.35 mm high (1” x 0.25”)
Location	88.9 mm (3.5”) From each end of the sill exterior center leg
Size	25.4 mm wide x 4.78 mm high (1” x 0.188”)
Location	Each end of the sill interior center leg
Size	12.7 mm wide x 3.18 mm high (0.5” x 0.125”)
Location	85.73 mm (3.375”) From each end of the sill glazing adapter
Size	12.7 mm wide x 3.18 mm high (0.5” x 0.125”)
Location	203.2 mm (8”) From each end of the bottom rail

Interior/ Exterior Surface Finish White vinyl (PVC)

Sealant

Location	End of head and sill glazing adapter and bottom of sill glazing adapter
Material	Silicone

Insect Screen

Size	1032 mm wide x 1956 mm (40.625” x 77”)
Corner Construction	Mitered (2) screw aluminum corner gusset
Material	Fiberglass mesh with solid vinyl spline, (1) adjustable metal tandem roller 101.6 mm (4”) from each end of the top and bottom rails and (1) strip polypile 16.51 mm (0.650”) high located at the screen stile

Installation Method The door was installed in a 50.8 mm x 254 mm (2” x 10”) spruce-pine-fir lumber test buck and secured through the nail fin with (1) #8 x 31.75 mm (1.25”) truss head screw through every other pre-punched hole. The frame was sealed with silicone sealant.

Test Results - AAMA/WDMA/CSA 101/I.S.2/A440-2011, 2008 & 2005

Paragraph	Test
5.3.1/ 9.3.1	Operating Force and Force to Latch - Method B (Force Gauge) ASTM E2068-00(08)

Initiate Motion	=	36 N	(8 lbf)
Allowed (R Rating)	=	135 N	(30.35 lbf)
Maintain Motion - Opening	=	36 N	(8 lbf)
Maintain Motion - Closing	=	36 N	(8 lbf)
Allowed (R Rating)	=	90 N	(20 lbf)
Latches	=	27 N	(6 lbf)
Allowed	=	100 N	(22.5 lbf)

NOTE: The results above represent the maximum force among all sash tested.

Paragraph	Test
5.3.2.1/ 9.3.2	Air Leakage Resistance ASTM E283-04(12)

The tested specimen meets or exceeds the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-2011, 2008, and 2005 for air infiltration at 75 Pa (1.6 psf).

Maximum Allowable = 1.5 L/s/m^2 (0.3 cfm/ft^2)

Extraneous Air Leakage	=	0.42 L/s (0.9 cfm)
Total Air Leakage	=	2.50 L/s (5.3 cfm)
Air Infiltration Rate	=	0.5 L/s/m^2 (0.10 cfm/ft^2)

Paragraph 5.3.3/ 9.3.3 — Test: Water Penetration Resistance
ASTM E547-00(09)

3.4 L/ (min• m^2) (5.0 gph/ft^2)

No Leakage after 4 cycles of 5 minutes at 180 Pa (3.76 psf)

NOTE: Tested with and without insect screen

Paragraph 5.3.4.2/ 9.3.4.2 — Test: Uniform Load Deflection at Design Pressure
ASTM E330-14

No damage after positive	1200 Pa (25.06 psf) held for 10 seconds
No damage after negative	1200 Pa (25.06 psf) held for 10 seconds
Measured Deflection $_{Positive}$	= 20.73 mm (0.816 inches)
Measured Deflection $_{Negative}$	= 19.74 mm (0.777 inches)

Paragraph 5.3.4.3/ 9.3.4.3 — Test: Uniform Load Structural Test
ASTM E330-14

No damage after positive	1800 Pa (37.59 psf) held for 10 seconds
No damage after negative	1800 Pa (37.59 psf) held for 10 seconds
Measured Permanent Set $_{Positive}$	= 2.67 mm (0.105 inches)
Measured Permanent Set $_{Negative}$	= 5.03 mm (0.198 inches)
Maximum Allowed (0.4%)	= 7.82 mm (0.308 inches)

NOTE: Deflection and Permanent Set measurements taken on the meeting stile over a 1956 mm (77”) span.

Paragraph 9.3.5/ 5.3.5 — Test: Forced Entry Resistance
ASTM F842-13

Type A SGD Assembly/Grade 10: = Pass

Test		
Disassembly Test	=	No Entry
Test A1	=	No Entry
Test A2	=	No Entry
Test A3	=	No Entry
Test A4	=	No Entry
Test A5	=	No Entry
Test A6	=	No Entry
Hardware/ Panel Manipulation	=	No Entry

Type D SGD Assembly/Grade 10: = Pass

Test		
Disassembly Test	=	No Entry
Test D1	=	No Entry
Test D2	=	No Entry

Test D3	=	No Entry
Hardware/ Sash Manipulation	=	No Entry

NOTE: 1. T1 = 5 minutes, L1 = 1334 N (300 lbf), L2 = 778 N (175 lbf), L3 = 133 N (30 lbf), L4 = 222 N (50 lbf) plus weight of panel.
2. Loads were held for 60 seconds.

Paragraph	Test
5.3.6.2/ 9.3.6.2	Thermoplastic Corner Weld Test (PVC products only) = Pass

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Paragraph	Test
5.3.6.3/ 9.3.6.3	Deglazing Test ASTM E987-88(09)

Active Panel (Interior)

Stiles – 320 N (71.94 lbf)		
Maximum Allowed	=	90% (100%)
Jamb Stile	=	21.4%
Meeting Stile	=	22.6%
Rails – 230 N (51.71 lbf)		
Maximum Allowed	=	90% (100%)
Top Rail	=	13.6%
Bottom Rail	=	14.6%

Active Panel (Exterior)

Stiles – 320 N (71.94 lbf)		
Maximum Allowed	=	90% (100%)
Meeting Stile	=	22.4%
Jamb Stile	=	21.6%
Rails – 230 N (51.71 lbf)		
Maximum Allowed	=	90% (100%)
Top Rail	=	14.2%
Bottom Rail	=	14.8%

NOTE: The glass bite was approximately 12.7 mm (0.5”)

This test report was prepared by National Certified Testing Laboratory (NCTL), for the exclusive use of the above named client and it does not constitute certification of this product. The results are for the particular specimen tested and do not imply the quality of similar or identical products manufactured or installed from specifications identical to the tested product. The test specimen was supplied to NCTL by the above named client. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen are to be drawn from the ASTM E330 test. Forced entry resistance test equipment used is in compliance with Section 7 of the ASTM F842 test method. Foam tape is mounted to the perimeter of the test buck prior to clamping to the test wall. NCTL is a testing lab and assumes that all information provided by the client is accurate and does not guarantee or warranty any product tested or installed. The results in this report are actual tested values and are applicable to the specimen tested only, using the components and construction methods described herein.

Detailed drawings were available for laboratory records and compared to the test specimen at the time of this report. Component drawings were reviewed for product verification. The bill of materials contains details with any deviations noted. Ambient conditions during the referenced testing are available upon request. A copy of this report along with representative sections of the test specimen will be retained by NCTL. This report does not constitute certification or approval of the product, which may only be granted by a certification program validator or recognized approval entity. All tests were conducted in full compliance with the referenced specifications and/or test methods. This report is the joint property of National Certified Testing Laboratories Inc. and the Client to whom it is issued. Permission to reproduce this report by anyone other than National Certified Testing Laboratories Inc and the Client must be granted in writing by both of the above parties. This report may not be reproduced, except its entirety, without the written consent of NCTL.

National Certified Testing Laboratories

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Technician

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Vice-President Engineering & Quality

NJL/ drm
Attachments
Appendix A – Revision Summary
Appendix B – Drawings