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REMODELERS SUPPLY
AAMA/ WDMA/ CSA 101/ I.S.2/ A440-05
TEST SUMMARY REPORT

Report No: NCTL-110-12759-1S
Expiration Date: 03/31/14

Test Specimen

Manufacturer:	*Remodelers Supply*
Product Type:	*Casement Vinyl Prime Window*
Series/Model:	*Series "4000"*
Primary Product Designation:	*C-R75 609.6 x 1524 (24x60)*
Optional Product Designation:	*Not Applicable*
Test Completion Date:	*03/19/10*

Reference should be made to Structural Performance Test Report Number NCTL-110-12759-1 for complete specimen description and test data.

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JAY LEADER
Technician

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STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-110-12759-1
Test Date: 03/19/10
Report Date: 03/22/10
Expiration Date: 03/31/14

Client: *Remodelers Supply*
2622 North Pulaski
Chicago, IL 60639

Test Specimen: *Remodelers Supply's Series "4000" Casement Vinyl Prime Window (C-R75 609.6 x 1524 (24x60).*

Test Specification: *AAMA/WDMA/CSA 101/I.S.2/A440-05, "Standard/Specification for Windows, Doors and Unit Sky Lights."*

TEST SPECIMEN DESCRIPTION

General: *The test specimen was an outswinging casement vinyl prime window measuring 609.6 mm (24") wide by 1524 mm (60") high overall. The vent measured 568.33 mm (22-3/8") wide by 1487.49 mm (58-9/16") high. A single handle three (3) point integrated lock system was located at 222.25 mm (8-3/4") from the bottom of the lock jamb. The metal keepers were located on the lock stile. A roto-operator employing standard casement hardware was located on the sill at the midspan. A metal snubber was located at 381 mm (15") from each end and at midspan of the hinge stile. The corresponding metal snubbers were located at the hinge jamb at the snubber positions. A plastic alignment block was fastened with one (1) screw at 142.88 mm (5-5/8") from the lock stile on the bottom rail. The frame and vent were of welded mitered corner construction.*

Glazing: *The vent was interior glazed using sealed insulating glass with a silicone and two (2) leaf dual durometer back-bedding and a snap-in two (2) leaf dual durometer rigid vinyl glazing bead. The overall insulating glass thickness was 22.23 mm (7/8") consisting of two (2) lites of 3 mm double strength annealed glass and one (1) space created by a coated U-shaped steel spacer system (CU-D).*

Weatherseals: *Two (2) strips of bulb-vinyl weatherstrip were located at the frame perimeter. One (1) strip of center fin weatherstrip 8.38 mm (0.330" high) was located at the vent perimeter.*

Weeps: *No apparent weeps employed.*

Interior & Exterior Surface Finish: *White vinyl (PVC)*

Sealant: *No apparent sealant was applied.*

Insect Screen: *An interior insect screen measuring 488.95 mm (19-1/4") wide by 1403.35 mm (55-1/4") high was of butt-type corner construction with pressure-fitted plastic corner keys. The screen employed fiberglass mesh cloth with a hollow vinyl spline and four (4) spring-loaded plunger-type retainers.*

Installation: *The specimen was installed into a standard grade 50.8 mm (2") x 254 mm (10") lumber test buck with 19.05 mm (3/4") x 12.7 mm (1/2") wood blind stops utilized at the interior and exterior perimeter of the specimen. Each blind stop was secured with one (1) #6 x 38.1 mm (1-1/2") screw located 203.2 mm (8") from each end and 254 mm (10") on center thereafter. The exterior perimeter was sealed with a silicone sealant.*

TEST RESULTS

Par. No.		*Title of Test & Method*	*Measured*	*Allowed*
5.3.1.1		*Operating Force - ASTM E 2068*		
		Vent — Initiate Open	*22 N (5 lbf)*	*70 N (15 lbf)*
		Maintain Open	*22 N (5 lbf)*	*30 N (7 lbf)*
		Initiate Close	*22 N (5 lbf)*	*70 N (15 lbf)*
		Maintain Close	*22 N (5 lbf)*	*30 N (7 lbf)*
5.3.1.1.3		*Latch Operation - Opening / Closing*	*31.1 N (7lbf)*	*100 N (22.5 lbf)*
5.3.2		*Air Infiltration - ASTM E 283*		
		75 Pa – (1.6 psf) (25 mph)	*0.5 L/ (sec• m²) (0.1 cfm/ft²) (<0.01 cfm/ft²) measured*	*1.5 L/ (sec• m²) (0.3 cfm/ft²)*
5.3.3		*Water Penetration - ASTM E 547*		
		3.4 L/ (min• m²) 5.0 gph/ft²		
		WTP= 140 Pa (2.9 psf)	*No Leakage*	*No Leakage*
5.3.4.2	**	*Uniform Load Deflection - ASTM E 330*		
		720 Pa (15.0 psf) Exterior	*0.03 mm (0.001")*	----
		720 Pa (15.0 psf) Interior	*0.08 mm (0.003")*	----
5.3.4.3	**	*Uniform Load Structural - ASTM E 330*		
		1080 Pa (22.5 psf) Exterior	*0.03 mm (0.001")*	*2.49 mm (0.098")*
		1080 Pa (22.5 psf) Interior	*<0.025 mm (<0.001")*	*2.49 mm (0.098")*
5.3.5		*Forced Entry Resistance Test - ASTM F 588 Grade 10*	*Meets As Stated*	
5.3.6.2		*Thermoplastic Corner Weld Test - ASTM D 618*	*Meets As Stated*	
5.3.6.4.3		*Sash Vertical Deflection Test*	*0.94 mm (0.037")*	*1.14 mm (0.045")*
5.3.6.6.2		*Distributed Load Test*	*Meets As Stated*	

OPTIONAL PERFORMANCE

Par. No.		*Title of Test & Method*	*Measured*	*Allowed*
4.4.2.6		*Water Penetration - ASTM E 547* *3.4 L/(min• m²) 5.0 gph/ft²* *WTP= 540 Pa (11.25 psf)*	*No Leakage*	*No Leakage*
4.4.2.6	**	*Uniform Load Deflection - ASTM E 330* *3600 Pa (75.0 psf) Exterior* *3600 Pa (75.0 psf) Interior*	*0.03 mm (0.001")* *0.84 mm (0.003")*	---- ----
4.4.2.6.2	**	*Uniform Load Structural - ASTM E 330* *5400 Pa (112.5 psf) Exterior* *5400 Pa (112.5 psf) Interior*	*0.03 mm (0.001")* *0.05 mm (0.002")*	*2.49 mm (0.098")* *2.49 mm (0.098")*

** *No glass breakage or permanent damage causing the unit to be inoperable.*

TEST COMPLETED 03/19/10

The tested specimen meets (or exceeds) the performance level specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 for air leakage resistance. The listed results were secured by using the designated test methods and indicate compliance with the performance requirements of the referenced specification paragraphs for the C-R75 609.6 x 1524 (24x60) product designation.

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 E 330 test. 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.

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 may not be reproduced, except in full, without the written consent of NCTL.

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APPENDIX A

Forced Entry Resistance Test Results

***Test Method**: ASTM F 588-07, "Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact". Grade 10*

TEST RESULTS

Operable Panel

Paragraph No.	*Loads*	*Duration*	*Measured*	*Allowed*
A2.1 –Disassembly Test	*N/A*	*5 Minutes*	*No Entry*	*No Entry*
A2.2 -Lock Manipulation	*N/A*	*5 Minutes*	*No Entry*	*No Entry*
A2.3 –Sash Manipulation	*N/A*	*5 Minutes*	*No Entry*	*No Entry*
A2.6.2 -Test B1	*L2= 333 N (75 lbf)*	*1 Minute*	*No Entry*	*No Entry*
A2.6.3 -Test B2	*L1= 667 N (150 lbf)* *L2= 333 N (75 lbf)*	*1 Minute*	*No Entry*	*No Entry*
A2.6.4 -Test B3	*L1= 667 N (150 lbf)* *L2= 333 N (75 lbf)*	*1 Minute*	*No Entry*	*No Entry*
A2.2 - Lock Manipulation	*N/A*	*5 Minutes*	*No Entry*	*No Entry*
A2.3 -Sash Manipulation	*N/A*	*5 Minutes*	*No Entry*	*No Entry*