MILCO BUILDING PRODUCTS

STRUCTURAL PERFORMANCE TEST REPORT

Series "5000/6000" Single Hung
Aluminum Prime Window

NCTL 210-2729-1

Gary D Parks
3/5/01

NATIONAL CERTIFIED TESTING LABORATORIES

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STRUCTURAL PERFORMANCE TEST REPORT

Report No: *NCTL-210-2729-1*
Test Date: *11/09/01*
Report Date: *11/26/01*

Client: *Milco Building Products*
307 Modoc Road
Swainsboro, GA 30401

Test Specimen: *Milco Building Products Series "5000/6000" Single Hung Aluminum Prime Window (H-R40).*

Test Specification: *AAMA/NWWDA 101/I.S.2-97, "Voluntary Specifications for Aluminum, Vinyl (PVC), and Wood Windows and Glass Doors."*

TEST SPECIMEN DESCRIPTION

General: *The test specimen was a one-over-one single hung aluminum prime window measuring 52-1/8" wide by 72" high overall. The fixed lite was glazed to the frame members, providing a viewing area of 49" wide by 35-1/2" high. The active sash measured 51" wide by 38-3/4" high. Frame and sash members were not thermally broken. The active sash was removable via a single spiral coiled spring balance with locking tilt shoe located in each interior jamb track. One (1) metal cam-type sweep lock was located at 10-1/2" from each end of the active interior meeting rail. A metal keeper was punched into the fixed meeting rail. One (1) plastic lockable tilt latch with thumb actuator was located at each end of the top rail of the active sash. A rigid vinyl balance cover was snap-fitted into the interior jamb tracks. The frame and active sash were of double screw butt-type corner construction.*

Glazing: *Both lites were interior glazed using 0.185" thick clear annealed glass with a silicone back-bedding and a snap-in rigid vinyl glazing bead.*

Weatherseals: *One (1) strip of polypile weatherstrip (0.330" high) was located at the exterior face of the active sash stiles. One (1) strip of polypile weatherstrip (0.190" high) was located on the active sash stile. One (1) strip of bulb-vinyl weatherstrip was located at the bottom rail. One (1) strip of center fin weatherstrip (0.190" high) was located at the interlock of the fixed rail.*

Weeps: *One (1) weep notch measuring 1.0 x leg height was located at each end of both sill legs.*

Interior & Exterior Surface Finish: *White painted aluminum.*

Sealant: *The frame and active sash corners were sealed with a silicone sealant.*

Insect Screen: *A nylon mesh insect screen measuring 49-3/4" wide by 39-1/2" high was of butt-type corner construction with plastic corner keys.*

TEST RESULTS

Par. No.	*Title of Test & Method*	*Measured*	*Allowed*
2.2.1.6.1	*Operating Force*		
	Active Sash Up	*16 lbf*	*30 lbf*
	Down	*7 lbf*	*30 lbf*
2.2.1.6.2	*Deglazing - ASTM E987*		
	Active Sash		
	Meeting Rail (70 lbf)	*3.2 % (0.016")*	*<100%*
	Bottom Rail (70 lbf)	*4.2 % (0.021")*	*<100%*
	Left Hand Stile (50 lbf)	*3.2 % (0.016")*	*<100%*
	Right Hand Stile (50 lbf)	*2.8 % (0.014")*	*<100%*
2.1.2	*Air Infiltration - ASTM E283*		
	1.57 psf (25 mph)	*0.12 cfm/ft²*	*0.3 cfm/ft²*
2.1.3 *	*Water Resistance - ASTM E547*		
	5.0 gph/ft²		
	WTP= 5.25 psf	*No Leakage*	*No Leakage*
2.1.4.2 **	*Uniform Load Structural - ASTM E330*		
	60.0 psf Exterior	*0.025"*	*0.196"*
	60.0 psf Interior	*0.019"*	*0.196"*
2.1.8	*Forced Entry Resistance - ASTM F588*		
	Grade 10 (See Appendix A for test results)	*Meets As Stated*	

OPTIONAL PERFORMANCE

4.3 *	*Water Resistance - ASTM E547/E331*		
	5.0 gph/ft²		
	WTP= 7.5 psf	*No Leakage*	*No Leakage*

* *Tested with and without screen*

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

TEST COMPLETED 11/09/01

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The tested specimen meets (or exceeds) the performance levels specified in Table 2.1 of AAMA/ NWWDA 101/I.S.2-97 for air infiltration. 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 H-R35 product designation.

Detailed drawings were available for laboratory records and comparison to the test specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimen tested. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen may be drawn from this test. This report does not constitute certification of the product which may only be granted by a certification program validator.

NATIONAL CERTIFIED TESTING LABORATORIES

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3/5/02

APPENDIX A

Forced Entry Resistance Test Results

Test Method: *ASTM F588-97, "Standard Test Method for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact".*

TEST RESULTS

Paragraph No.	*Loads*	*Duration*	*Measured*	*Allowed*
10.1-Lock Manipulation		*5 Minutes*	*No Entry*	*No Entry*
10.2.1.1-Test A1	*L1=150 lbf*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.2-Test A2	*L1=150 lbf* *L2=75 lbf interior*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.3-Test A3	*L1=150 lbf* *L2=75 lbf exterior*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.4-Test A4	*L1=150 lbf* *L2=75 lbf interior*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.5-Test A5	*L1=150 lbf* *L2=75 lbf exterior*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.7-Test A7	*L1=150 lbf* *L2=75 lbf interior* *L3= 25 lbf interior*	*1 Minute*	*No Entry*	*No Entry*
10.2.1.8 Lock Manipulation		*5 Minutes*	*No Entry*	*No Entry*
10.2.4.2 Fixed Lite Glazing/Panel Manipulation		*5 Minutes*	*No Entry*	*No Entry*

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