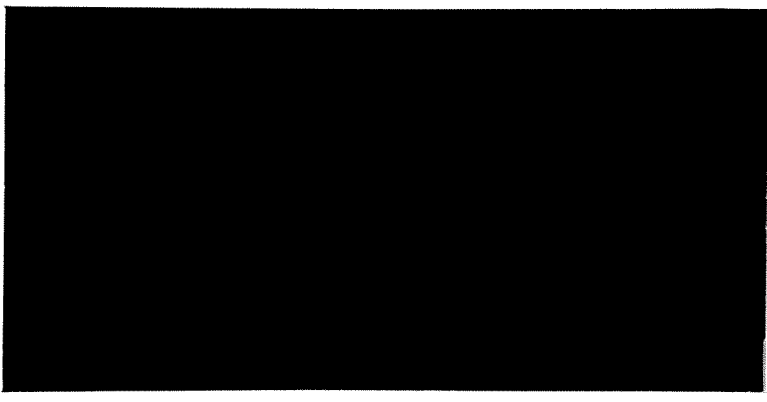
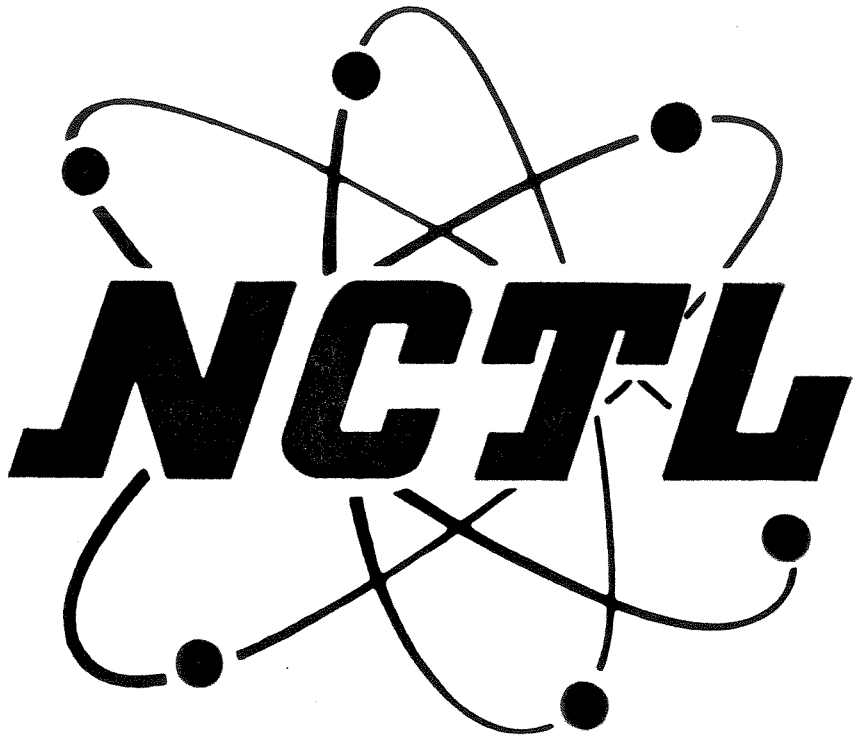


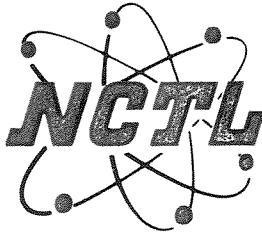
4



NATIONAL CERTIFIED TESTING LABORATORIES

**Builder's Choice
Structural Performance Test Report
NCTL 210-2683-2
Series "1000" Single Hung
Aluminum Prime Window
Test Date: 10/11/01**

*Raymond P. ...
11/6/01*



NATIONAL CERTIFIED TESTING LABORATORIES

1464 GEMINI BOULEVARD • ORLANDO, FLORIDA 32837
PHONE (407) 240-1356 • FAX (407) 240-8882

STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-2683-2

Test Date: 10/11/01

Report Date: 10/26/01

Client: Builders Choice
2625 Mercy Drive
Orlando, FL 32808

Test Specimen: Builders Choice Series "1000" 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 53-1/8" wide by 72" high overall. The active sash measured 50-1/8" wide by 36-1/8" high. The active sash was removable vi a single block-n-tackle balance system in each interior jamb track. Frame and sash members were not thermally broken. One (1) metal cam-type sweep lock was located at 6" from each end of the active meeting rail. Keeper was extruded onto the fixed meeting rail. A rigid vinyl sash stop was located at the top of each interior jamb track A rigid vinyl strike cap was used at each active stile. The fixed meeting rail was single screwed to each jamb. The frame was of double screw (#6 x 5/8" pan head) coped corner construction. The sash was of single screw (#6 x 1" pan head) coped corner construction. The frame was mounted to the test buck using seven (7) (#8 x 1" pan head) screw.

Glazing: The fixed lite and active sash were glazed using double strength annealed glass with an adhesive bedding and a rigid vinyl bead.

Weatherseals: One (1) strip of center fin weatherstrip (0.210" high) was located at the active meeting rail and each stile. One (1) strip of bulb-vinyl weatherstrip was located at the active bottom rail and the sill.

Weeps: One (1) weep notch measuring 1" x leg height was located at each end of the exterior vertical screen track leg and vertical sill leg.

Darryl Eastman
11/6/01

Interior & Exterior Surface Finish: White painted aluminum.

Sealant: Frame corners were sealed with a small joint sealant

Screen: An insect screen measuring 4'3-1/2" wide by 2'11-7/8" high was of butt type corner construction with staked-in-place nylon corner keys. The screen employed fiberglass mesh cloth with a hollow vinyl spline; two (2) pull tabs; two (2) retainer springs.

TEST RESULTS

<u>Par. No.</u>	<u>Title of Test & Method</u>	<u>Measured</u>	<u>Allowed</u>
2.2.1.6.1	Operating Force Active Sash Up Down	15 lbf 7 lbf	30 lbf 30 lbf
2.2.1.6.2	Deglazing - ASTM E987 Active Sash Meeting Rail (70 lbf) Bottom Rail (70 lbf) Left Hand Stile (50 lbf) Right Hand Stile (50 lbf)	3.6 % (0.018") 3.4 % (0.017") 4.2 % (0.021") 1.8 % (0.009")	<100% <100% <100% <100%
2.1.2	Air Infiltration - ASTM E283 1.57 psf (25 mph)	0.1 cfm/ft ²	0.3 cfm/ft ²
2.1.3	Water Resistance - ASTM E547 5.0 gph/ft ² WTP= 6.0 psf	No Leakage	No Leakage
2.1.4.2 **	Uniform Load Structural - ASTM E330 60.0 psf Exterior 60.0 psf Interior	0.165" 0.140"	0.194" 0.194"
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 5.0 gph/ft ² WTP= 9.0 psf	No Leakage	No Leakage
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** No glass breakage or permanent damage causing the unit to be inoperable

TEST COMPLETED 10/11/01

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-R40 product designation.

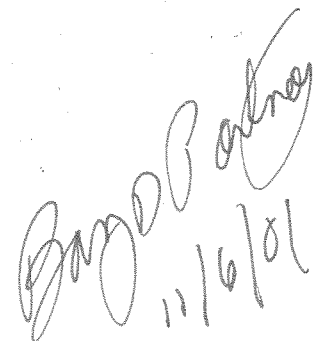
Handwritten signature and date:
11/6/01

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



DAN CONYERS
Laboratory Manager



11/6/01

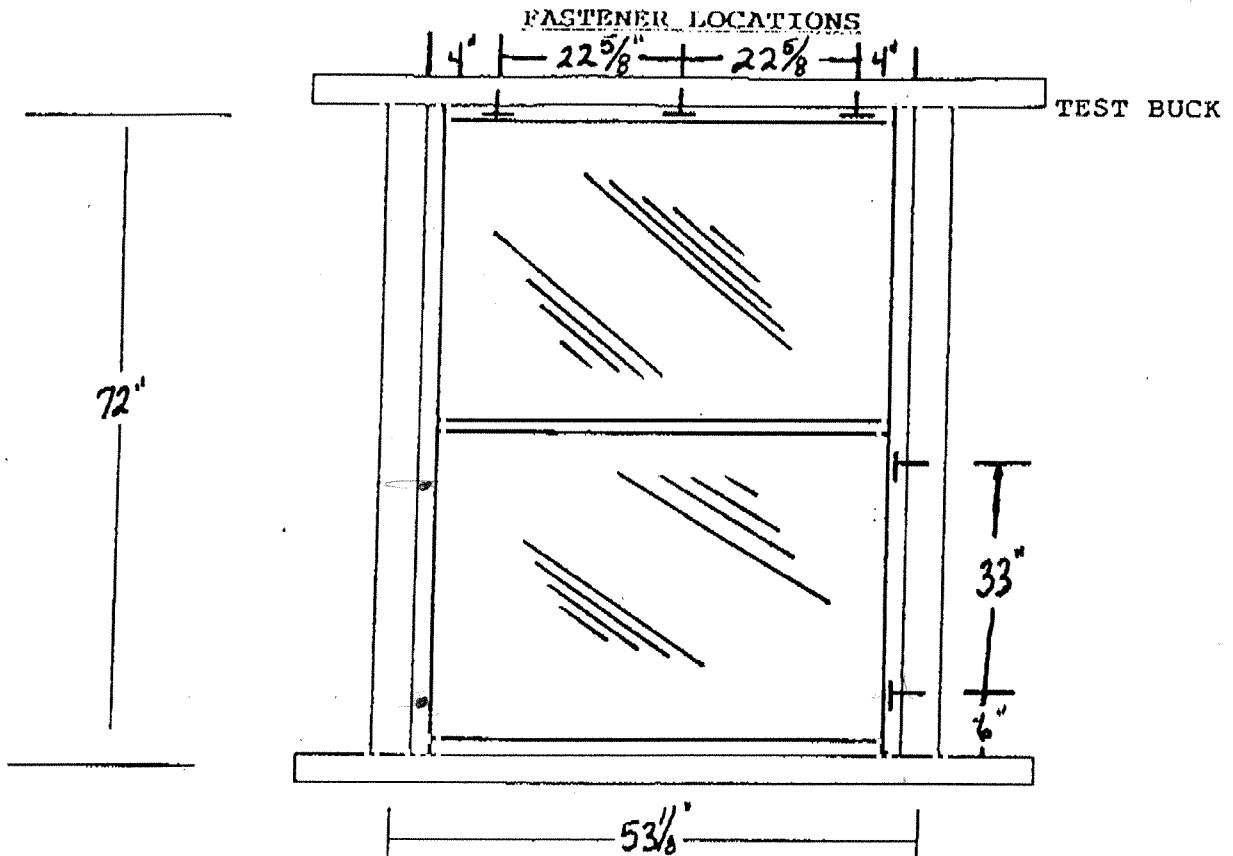
APPENDIX A
Forced Entry Resistance Test Results

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

TEST RESULTS

<u>Paragraph No.</u>	<u>Loads</u>	<u>Duration</u>	<u>Measured</u>	<u>Allowed</u>
10.1-Lock Manipulation		5 Minutes	No Entry	No Entry
10.2.1.1-Test A1	L1=200 lbf	1 Minute	No Entry	No Entry
10.2.1.2-Test A2	L1=200 lbf L2=100 lbf interior	1 Minute	No Entry	No Entry
10.2.1.3-Test A3	L1=200 lbf L2=100 lbf exterior	1 Minute	No Entry	No Entry
10.2.1.4-Test A4	L1=200 lbf L2=100 lbf interior	1 Minute	No Entry	No Entry
10.2.1.5-Test A5	L1=200 lbf L2=100 lbf exterior	1 Minute	No Entry	No Entry
10.2.1.7-Test A7	L1=200 lbf L2=100 lbf interior L3= 35 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

James Patton
11/6/07



NOTE: JAMB Fasteners are Identical

The test specimen was mounted to the test buck using Seven (7) (#8x1") screws located at location shown

METRO-DADE COUNTY REQUIRED

NATIONAL CERTIFIED
TESTING LABORATORIES

JOB NO.: NCTL-210-3683-2

COMPANY: Builders Choice

TEST DATE: 10-11-01

Raymond
11/6/01