

# NATIONAL CERTIFIED TESTING LABORATORIES

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## STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-2696-1  
Test Date: 8/27/01  
Report Date: 9/13/01

**Client:** Custom Windows  
91 N.E. 16th Street  
Ocala, FL 32670

**Test Specimen:** Custom Window's Series "7000 SPS" Type XOX Horizontal Sliding Aluminum Prime Window (HS-C40).

**Test Method:** 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 type XOX horizontal sliding aluminum prime window measuring 121-3/8" wide by 67-1/4" high overall. Both active panels measured 40-1/4" wide by 63-3/4" high. The fixed lite was glazed to the frame members, providing a viewing area of 37-1/4" wide by 62-3/4" high. Frame and panel members were not thermally broken. One (1) metal cam-type sweep lock was located at 7" from each end of the interior active meeting stile. The metal keeper was extruded onto the fixed meeting stile at the lock positions. A plastic roller and metal keeper were located at each end of the active panel bottom rail. The frame was of triple plastic housing were located at each end of the active panel bottom rail. The frame was of triple screw butt-type corner construction with closed cell foam gaskets. The active panels were of double screw butt-type corner construction. The fixed meeting stiles were fastened to the head and sill with one (1) screw.

**Glazing:** The active panel and fixed lite were exterior glazed using 0.185" thick annealed glass with a silicone back bedding and an exterior snap-in extruded aluminum glazing bead.

**Weatherseals:** One (1) strip of "Q-Lon" bulb vinyl weatherseal on the vertical leg of jamb stile. One (1) strip of weatherstrip 0.300" high was located on the interior and exterior perimeter of jamb stile. One (1) strip of weatherstrip 0.140" high was located on the interlock of the meeting stile. One (1) strip of weatherseal 0.180" high was located on the interior and exterior vertical leg of the top rail. One (1) 1/2" strip of polypile weatherstrip (0.230" high) was located at the interlock position of the head/fixed stile and sill/fixed stile location.

PROFESSIONALS IN THE SCIENCE OF TESTING

*Handwritten signature:* Gary Padua  
9/24/01

**Weeps:** One (1) weep hole measuring 1-3/8" x 1/8" and employing a plastic weep cover was located at 3" from each end of the exterior sill face. One (1) weep hole measuring 1-1/2" x 1/4" was located at 1-1/2" from each end of the interior sill track. Two (2) weep holes measuring 1/2" x 1/8" was located at mid-span of the exterior sill track. One (1) weep hole measuring 1-1/2" x 1/8" was located at each end of the sill track.

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

**Sealant:** Frame corners were sealed with silicone sealant.

**Screen:** N/A

### TEST RESULTS

| <u>Par. No.</u> | <u>Title of Test &amp; Method</u>  | <u>Measured</u>  | <u>Allowed</u>                   |
|-----------------|--|--|----------------------------------|
| 2.2.1.6.1       | Operating Force<br>Active Sash Up<br>Down  | 12 lbf<br>4 lbf  | 25 lbf<br>25 lbf                 |
| 2.2.1.6.2       | Deglazing - ASTM E987<br>Active Sash<br>Meeting Rail (70 lbf)<br>Bottom Rail (70 lbf)<br>Left Hand Stile (50 lbf)<br>Right Hand Stile (50 lbf) | 3.2 % (0.016")<br>4.2 % (0.021")<br>3.2 % (0.016")<br>2.8 % (0.014") | <100%<br><100%<br><100%<br><100% |
| 2.1.2           | Air Infiltration - ASTM E283<br>1.57 psf (25 mph)  | 0.09 cfm/ft <sup>2</sup>   | 0.3 cfm/ft <sup>2</sup>          |
| 2.1.3           | Water Resistance - ASTM E547/ASTM E331<br>5.0 gph/ft <sup>2</sup><br>WTP= 4.5 psf  | No Leakage   | No Leakage                       |
| 2.1.4.2 **      | Uniform Load Structural - ASTM E330<br>45.0 psf Exterior<br>45.0 psf Interior  | 0.030"<br>0.015"   | 0.256<br>0.256                   |
| 2.1.8           | Forced Entry Resistance - ASTM F588<br>Level 10<br>(See Appendix A for test results)   |  | Meets As Stated                  |

**Note:** After the first water test, a sill riser was added to the interior vertical sill leg, raising the sill from 1-1/2" to 2-1/2" high.

National Construction Testing Laboratory, Inc.
   
 12/24/02

**OPTIONAL PERFORMANCE**

| <u>Par. No.</u> | <u>Title of Test &amp; Method</u>   | <u>Measured</u> | <u>Allowed</u> |
|-----------------|---|-----------------|----------------|
| 4.3             | Water Resistance - ASTM E547/ASTM E331<br>5.0 gph/ft <sup>2</sup><br>WTP= 6.0 psf | No Leakage      | No Leakage     |
| 4.4.2           | ** Uniform Load Structural - ASTM E330  |                 |                |
|                 | 60.0 Exterior   | 0.150"          | 0.256          |
|                 | 60.0 Interior   | 0.110"          | 0.256          |

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

TEST COMPLETED 9/13/01

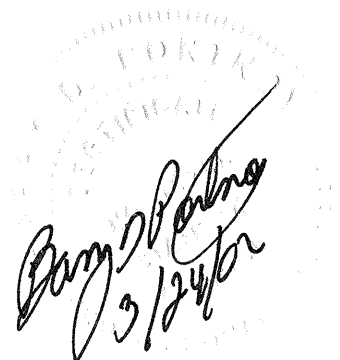
The tested specimen meets (or exceeds) the performance levels specified in Table 2.1 of AAMA/NWWDA 101/I.S.2-97 for air infiltration. The listed results were secured by using the designated test methods and indicate compliance with the performance requirements of the referenced specification paragraphs for the HS-C40 product designation.

Detailed drawings were available for laboratory records and compared 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* 

DAN CONYERS  
Laboratory Manager



*Dan Conyers*  
9/24/01

**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=150 lbf   | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.2-Test A2                         | L1=150 lbf<br>L2= 75 lbf interior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.3-Test A3                         | L1=150 lbf<br>L2= 75 lbf exterior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.4-Test A4                         | L1=150 lbf<br>L2= 75 lbf interior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.5-Test A5                         | L1= 150 lbf<br>L2= 75 lbf exterior                       | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.7-Test A7                         | L1=150 lbf<br>L2= 75 lbf interior<br>L3= 25 lbf interior | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.8<br>Lock Manipulation            |  | 5 Minutes       | No Entry        | No Entry       |
| 10.2.4.1 Fixed Lite<br>Lock Manipulation |  | 5 Minutes       | No Entry        | No Entry       |

A circular stamp is partially visible in the bottom right corner. Overlaid on it is a handwritten signature that reads "Danyal Bakhro" and a date "3/24/02".