



## **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-210-2716-2  
Test Date: 10/02/01  
Report Date: 10/19/01

Client: Kinco, Ltd.  
5245 Old King Rd.  
Jacksonville, FL 32205

Test Specimen: Kinco, Ltd.'s Series "TB-4/1" Single Hung Aluminum Prime Window (H-LC50).

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 tilt single hung aluminum prime window measuring 53" wide by 97" high overall. The active sash measured 49-5/8" wide by 49" high. The fixed lite was glazed to the frame members, providing a viewing area of 47-11/16" wide by 45" high. Frame and sash members were thermally broken. The active sash was removable via a single coiled spring balance with locking tilt shoe located in each interior jamb track. One rigid vinyl lock was located at 3" from each end of the active interior bottom rail. One (1) plastic tilt latch with thumb actuator was located at each end of the interior meeting rail. One (1) die cast pivot bar was fastened with one (1) screw at each end of the bottom rail. The frame and active sash was of single screw butt-type corner construction. The fixed meeting rail was fastened to the jambs at mid-span with one (1) screw.

**Glazing:** The active sash was exterior glazed and the fixed lite was interior glazed with 0.220" thick clear annealed glass using a silicone bedding and rigid vinyl glazing bead

**Weatherseals:** One (1) strip of center fin polypile weatherstrip (0.290" high) was located at the interior face of the top rail and both stiles. One (1) strip of centerfin polypile weatherstrip (0.290" high) was located at both stiles. One (1) strip of vinyl weatherstrip was located at the bottom rail.

**Weeps:** One (1) weep notch measuring 1-1/2" x 3/8" was located at 4" and 22-1/4" from each end of the sill face. One (1) weep notch measuring 1-1/2" x 3/8" was located at each end and at mid-span of the interior screen retainer sill leg.

**PROFESSIONALS IN THE SCIENCE OF TESTING**

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

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

### 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  | 28 lbf<br>9 lbf  | 35 lbf<br>35 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)  | 0.13 cfm/ft <sup>2</sup><br>(0.10 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= 7.5 psf  | No Leakage   | No Leakage                       |
| 2.1.4.2 **      | Uniform Load Structural - ASTM E330<br>75.0 psf Exterior<br>75.0 psf Interior  | 0.090"<br>0.075"   | 0.196"<br>0.196"                 |
| 2.1.8           | Forced Entry Resistance - ASTM F588<br>Grade 10 (See Appendix A for test results)  | Meets As Stated  |                                  |

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

TEST COMPLETED 10/02/01

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-LC50 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*

*DAN CONYERS  
Laboratory Manager*

**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<br>L2=100 lbf interior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.3-Test A3                                  | L1=200 lbf<br>L2=100 lbf exterior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.4-Test A4                                  | L1=200 lbf<br>L2=100 lbf interior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.5-Test A5                                  | L1=200 lbf<br>L2=100 lbf exterior                        | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.7-Test A7                                  | L1=200 lbf<br>L2=100 lbf interior<br>L3= 35 lbf interior | 1 Minute        | No Entry        | No Entry       |
| 10.2.1.8<br>Lock Manipulation                     |  | 5 Minutes       | No Entry        | No Entry       |
| 10.2.4.2 Fixed Lite<br>Glazing/Panel Manipulation |  | 5 Minutes       | No Entry        | No Entry       |