



NATIONAL CERTIFIED TESTING LABORATORIES

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STRUCTURAL PERFORMANCE TEST REPORT

Report No: NCTL-210-2716-1
Test Date: 10/02/01
Report Date: 10/19/01
Revision Date: 03/04/02

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

Test Specimen: Kinco Ltd. Series "TW-4/1" Single Hung Aluminum Prime Window (H-LC35).

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

Revision Note: Added Insect Screen description and "*Tested with and with out screen on page 2"

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 not 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 was a double screw butt-type corner construction 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 fixed lite was interior glazed using a silicone back bedding and a rigid vinyl glazing bead. The active sash was exterior glazed using a silicone back bedding and a rigid vinyl glazing bead. The overall glass thickness measured 3/16" (0.185") thick clear annealed glass.

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.

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Interior & Exterior Surface Finish: White painted aluminum.

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

Insect Screen: A 6.18 fiberglass mesh insect screen measuring 48-7/8" wide by 47-13/16" high was of roll form channel frame with two (2) tension springs on one (1) side and two (2) stainless steel retractable lift handles with four (4) plastic corner keys.

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	22 lbf 7 lbf	35 lbf 35 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)	3.2 % (0.016") 4.2 % (0.021") 3.2 % (0.016") 2.8 % (0.014")	<100% <100% <100% <100%
2.1.2	Air Infiltration - ASTM E283 1.57 psf (25 mph)	0.11 cfm/ft ² (0.10 cfm/ft ²)	0.3 cfm/ft ²
2.1.3	* Water Resistance - ASTM E547 & ASTM E331 5.0 gph/ft ² WTP= 7.5 psf	No Leakage	No Leakage
2.1.4.2	** Uniform Load Structural - ASTM E330 52.5 psf Exterior 52.5 psf Interior	0.090" 0.050"	0.196" 0.196 "
2.1.8	Forced Entry Resistance - ASTM F588 Grade 10 (See Appendix A for test results)		Meets As Stated

* Tested with and without screen

** 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-LC35 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.

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*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 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