

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-210-2191-2

TEST DATE: 04-28-99

REPORT DATE: 05-12-99

EXPIRATION DATE: 05-31-03

CLIENT: Energy Saving Products
537 North Blythe St.
Gallatin, Tennessee 37066

TEST SPECIMEN: Energy Saving Products, Series "140/141" Single Hung Aluminum Prime Window.
(H-R50 37 x 63)

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

TEST SPECIMEN DESCRIPTION

GENERAL: The specimen tested was a one-over-one tilt single hung aluminum prime window measuring 3'1" wide by 5'3" high overall. The fixed lite was glazed to the frame members providing a viewing area of 2'8-5/8" wide by 2'4-1/2" high. Frame and sash members were not thermally broken. The active sash measured 2'10-1/2" wide by 2'7-7/16" high. The active sash was removable via a single spiral balance with locking tilt shoe located in each interior jamb track. One metal cam-type sweep lock was located at 8-1/2" from each end of the interior meeting rail. The keepers were extruded onto exterior meeting rail at lock positions. One plastic tilt latch with thumb actuator was located at each end of the interior meeting rail. One U-shaped metal pivot bar was fastened with one (1) screw at each end of the bottom rail. The frame was of double screw coped corner construction. The active sash was of single screw coped corner construction. The fixed meeting rail was fastened to the jambs with one (1) screw.

INSTALLATION: The frame was flange mounted to the test buck using six (6) screws.
(See fastener diagram)

GLAZING: Both fixed and active sash were interior glazed using 1/8" annealed glass with a silicone back-bedding and a rigid vinyl glazing bead.

PROFESSIONALS IN THE SCIENCE OF TESTING

Greg D. Parham
3/18/02

WSTP: Double strips of centerfin weatherstrip (0.200" high) was located at each active sash stile. A single strip of centerfin weatherstrip (0.200" high) was located at the fixed meeting rail. A single strip of bulb-vinyl weatherstrip was located at the bottom rail.

WEEPS: One (1) weep notch measuring 1" x leg height was located at each end of the sill's vertical screen retainer leg. One (1) weep notch measuring 2-1/2" x leg height was located at each end of the sill's interior vertical leg.

INTERIOR & EXTERIOR SURFACE FINISH: Brown painted aluminum.

SEALANT: The jamb/sill corners were sealed with a small-joint sealant.

SCREEN: An insect screen measuring 2'11-1/2" wide by 2'7" high was of mitered type corner construction with nylon corner keys. The screen employed fiberglass mesh cloth with a hollow vinyl spline, two pull tabs.

TEST RESULTS

<u>PARAGRAPH NO.</u>	<u>TITLE OF TEST</u>	<u>MEASURED</u>	<u>ALLOWED</u>
**2.2.1.6.1	Operating Force	15# Max.	30#
**2.1.2	Air Infiltration 1.57 psf	0.11 CFM/FT	0.30 CFM/FT
**2.1.3	* Water Penetration (5.0 GPH/FT ²) WTP = 2.86 psf	No Entry	No Entry
2.1.4.2	Uniform Structural Loads 22.5 psf exterior 22.5 psf interior	0.004" 0.007"	0.126" 0.126"
**2.2.1.6.2	Deglazing Test Active Sash		
	Meeting Rail (70#)	11.0% (0.055")	< 100%
	Bottom Rail (70#)	12.2% (0.061")	< 100%
	Left Stile (50#)	6.6% (0.033")	< 100%
	Right Stile (50#)	4.8% (0.024")	< 100%

DP
3/18/02

OPTIONAL PERFORMANCE

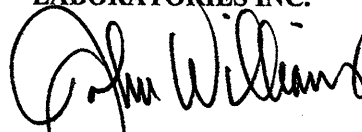
**4.3	* Water Penetration (5.0 GPH/FT ²) WTP = 7.25 psf	No Entry	No Entry
4.4.2	Uniform Load Structural		
	105.0 psf exterior	0.124"	0.126"
	105.0 psf interior	0.122"	0.126"

TEST COMPLETED: 04-28-99

*Tested with and without insect screen.

This test specimen meets the performance criteria level of H-R50 37 x 63 of the AAMA/NWWDA/101/I.S. 2-97 specification.

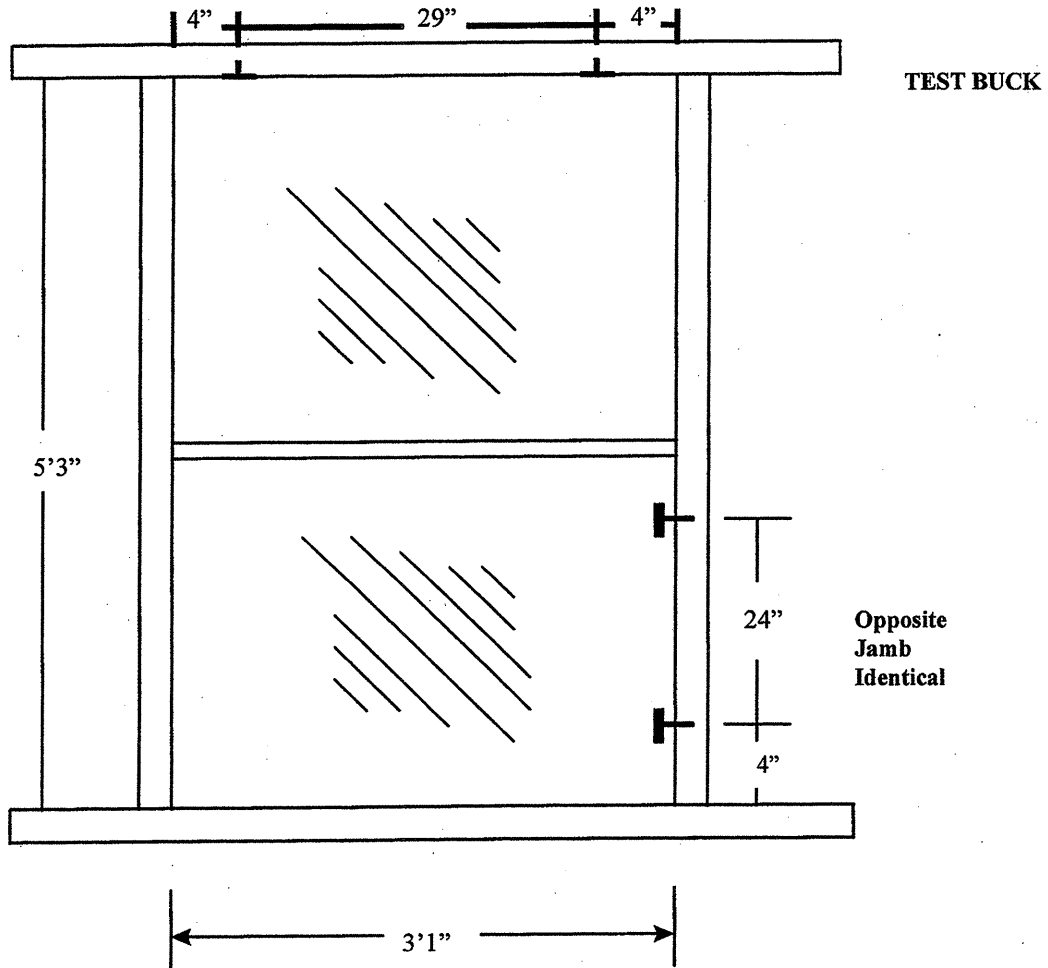
Detailed drawings were available for laboratory records and compared to the specimen at the time of this report. A copy of this report along with representative sections of the test specimen will be retained by NCTL for a period of four (4) years. The results obtained apply only to the specimen tested.


**NATIONAL CERTIFIED TESTING
LABORATORIES INC.**
JOHN WILLIAMS
Technician
5/17/99

JW/ld


3/18/02

FASTENER LOCATIONS



The test specimen was mounted to the test buck using six (6) (# 8 x 2") flat head screws  at locations shown.

METRO-DADE COUNTY REQUIRED

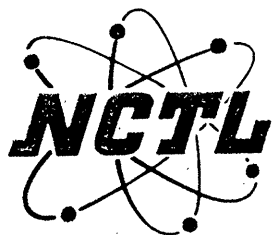
NATIONAL CERTIFIED TESTING LABORATORIES

JOB NO.: NCTL-210-2191-2

COMPANY : Energy Saving Product

TEST DATE: 04-28-99

Bay D Perkins
3/18/02



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STRUCTURAL PERFORMANCE TEST REPORT

REPORT NO.: NCTL-210-2191-1

TEST DATE: 04-27-99

REPORT DATE: 05-12-99

EXPIRATION DATE: 05-31-03

CLIENT: Energy Saving Products
537 North Blythe St.
Gallatin, Tennessee 37066

TEST SPECIMEN: Energy Saving Products, Series "140/141" Single Hung Aluminum Prime Window.
(H-R35 53 x 74)

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

TEST SPECIMEN DESCRIPTION

GENERAL: The specimen tested was a one-over-one tilt single hung aluminum prime window measuring 4'5-1/8" wide by 6'4" high overall. The fixed lite was glazed to the frame members providing a viewing area of 4'0-3/4" wide by 2'10" high. Frame and sash members were not thermally broken. The active sash measured 4'2-5/8" wide by 3'0-7/8" high. The active sash was removable via a single spiral balance with locking tilt shoe located in each interior jamb track. One metal cam-type sweep lock was located at 12-1/2" from each end of the interior meeting rail. The keepers were extruded onto exterior meeting rail at lock positions. One plastic tilt latch with thumb actuator was located at each end of the interior meeting rail. One U-shaped metal pivot bar was fastened with one (1) screw at each end of the bottom rail. The frame was of double screw coped corner construction. The active sash was of single screw coped corner construction. The fixed meeting rail was fastened to the jambs with one (1) screw.

INSTALLATION: The frame was flange mounted to the test buck using eight (8) screws.
(See fastener diagram)

GLAZING: Both fixed and active sash were interior glazed using 1/8" annealed glass with a silicone back-bedding and a rigid vinyl glazing bead.

Ray D. Parina
3/18/02

WSTP: Double strips of centerfin weatherstrip (0.200" high) was located at each active sash stile. A single strip of centerfin weatherstrip (0.200" high) was located at the fixed meeting rail. A single strip of bulb-vinyl weatherstrip was located at the bottom rail.

WEEPS: One (1) weep notch measuring 1" x leg height was located at each end of the sill's vertical screen retainer leg. One (1) weep notch measuring 2-1/2" x leg height was located at each end of the sill's interior vertical leg.

INTERIOR & EXTERIOR SURFACE FINISH: Brown painted aluminum.

SEALANT: The jamb/sill corners were sealed with a small-joint sealant.

SCREEN: An insect screen measuring 4' 1-7/8" wide by 3' 10-1/2" high was of mitered type corner construction with nylon corner keys. The screen employed fiberglass mesh cloth with a hollow vinyl spline, two pull tabs.

TEST RESULTS

<u>PARAGRAPH NO.</u>	<u>TITLE OF TEST</u>	<u>MEASURED</u>	<u>ALLOWED</u>
2.2.1.6.1	Operating Force	15# Max.	30#
2.1.2	Air Infiltration 1.57 psf	0.11 CFM/FT	0.30 CFM/FT
2.1.3	* Water Penetration (5.0 GPH/FT ²) WTP = 2.86 psf	No Entry	No Entry
2.1.4.2	Uniform Structural Loads 22.5 psf exterior 22.5 psf interior	0.031" 0.036"	0.202" 0.202"
2.2.1.6.2	Deglazing Test Active Sash		
	Meeting Rail (70#)	11.0% (0.055")	< 100%
	Bottom Rail (70#)	12.2% (0.061")	< 100%
	Left Stile (50#)	6.6% (0.033")	< 100%
	Right Stile (50#)	4.8% (0.024")	< 100%

3/18/02

OPTIONAL PERFORMANCE

4.3	* Water Penetration (5.0 GPH/FT ²) WTP = 7.25 psf	No Entry	No Entry
4.4.2	Uniform Load Structural		
	52.5 psf exterior	0.062"	0.202"
	52.5 psf interior	0.076"	0.202"

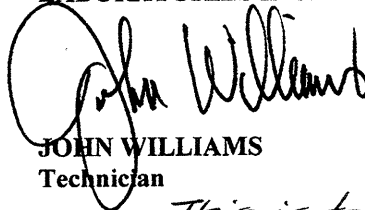
TEST COMPLETED: 04-27-99

*Tested with and without insect screen.

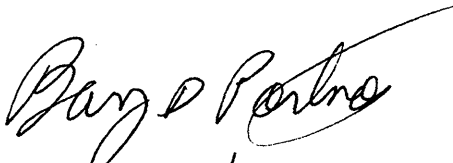
This test specimen meets the performance criteria level of H-R35 53 x 74 of the AAMA/NWWDA/101/I.S. 2-97 specification.

Detailed drawings were available for laboratory records and compared to the 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.

**NATIONAL CERTIFIED TESTING
LABORATORIES INC.**


JOHN WILLIAMS
Technician

JW/d

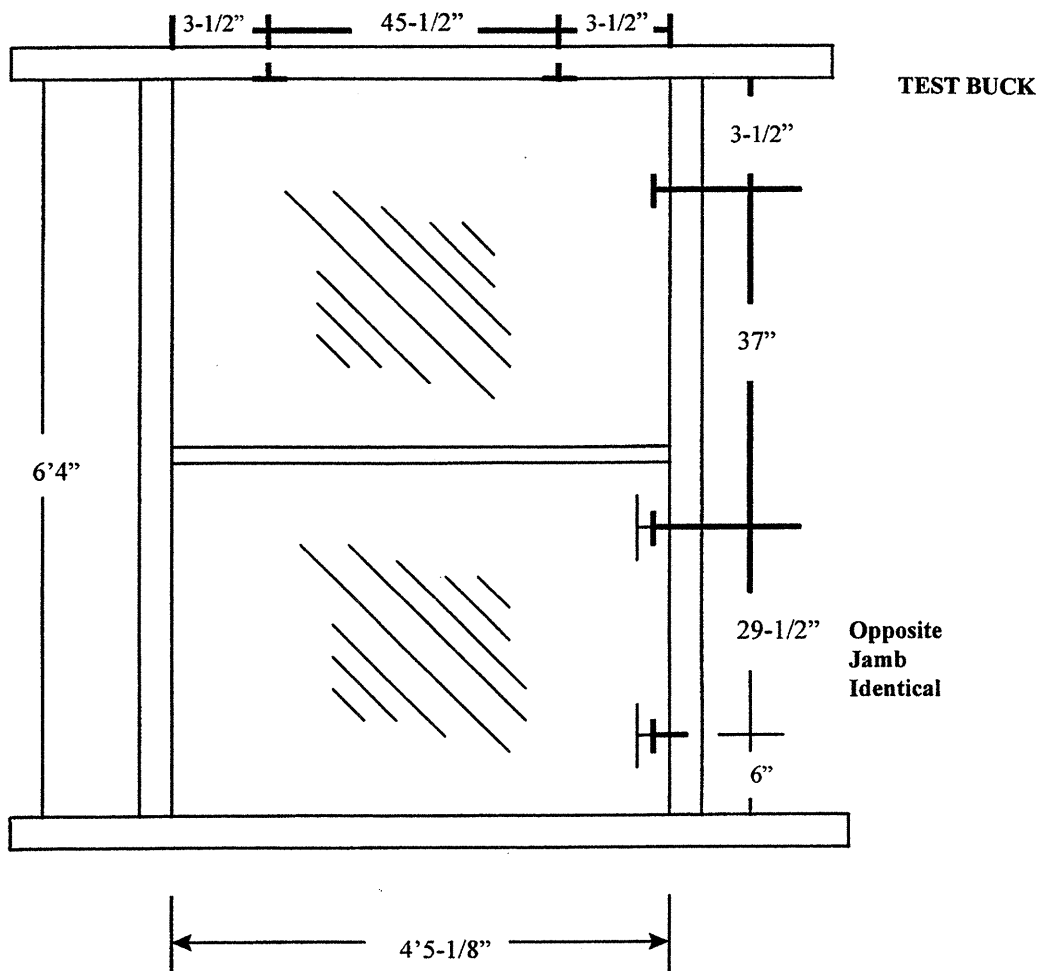

5/17/99


*This is to certify that I
have reviewed this report
and find the results are
in accord with the referenced
specifications.*



3/25/02


3/11/02

FASTENER LOCATIONS



The test specimen was mounted to the test buck using four (4) (# 8 x 2") flat head screws  at locations shown.

The test specimen was mounted to the test buck using four (4) (# 8 x 1") flat head screws  at locations shown.

METRO-DADE COUNTY REQUIRED

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JOB NO.: NCTL-210-2191-1

COMPANY : Energy Saving Product

TEST DATE: 04-27-99

Gary D. Portno
3/18/00