



Notice

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HURRICANE ENGINEERING & TESTING INC.

Computer Controlled Product Testing & Design,
.....Wind Load Analysis

Large Missile (4 lbs) Impact & Cyclic Wind Pressure Tests SSTD 12-99 (90 mph < Windspeed ≤ 100 mph)

January 8th, 2002

REPORT NUMBER: **HETI-02-1128**
MANUFACTURER: Bekaert Specialty Films, LLC
2400 West Copans Road, Suite 7, Pompano Beach, Florida 33069

TEST LOCATION: Hurricane Engineering & Testing Inc.
8532 NW 64 Street Miami, FL 33166

LAB. CERTIFICATION NUMBER: 01-0417.03 (MIAMI-DADE COUNTY, FLORIDA)
SBCCI LISTING No.: TL - 9596A

PRODUCT: **Fixed Glazed System. Group #3**
MODEL: 8 mil clear lamination

MATERIAL: 6063-T5 glazed aluminum frame
PRODUCT SIZE: 49" w x 95" h (overall frame size)

DRAWING: none provided.
NOTE: HETI stamped drawing is an integral part of this report.

DESIGN LOADS (psf): **S-1: ±50,**
S-2: ±50,
S-3: ±50 and ±80.

TEST WITNESSED BY: (full or Partial)
Syed Waqar Ali, Ph. D. (HETI)
Mr. Eddy Philippe (HETI)
Mr. Leonardo D. Savini, E.I. (HETI)
Mr. Arshad Viqar, P.E. (HETI)

Construction Details

PRODUCT: Fixed Glazed System. Group #3

DESCRIPTION OF UNIT

model designation 8 mil clear lamination
overall size 49" w x 95" h (overall frame size)
configuration O
No. & size of vents none, fixed
Special Note: General description: The unit consisted of a painted sliding glass door sash. The head or sill was the sash, the rails and the jambs were the stiles. The terms jam, head and sill will be used because the unit tested was not operable.. The frame was mounted directly on a wood substratum. The anchors were installed from the opposite wall side of the substratum.

MATERIAL CHARACTERISTICS

Frame Construction (material used to construct frame):

COMPONENT	OVERALL DIMENSION (INCHES)	EXTERIOR † WALL THICKNESS (INCHES)	INTERIOR † WALL THICKNESS (INCHES)	*
JAMBS	1.94 x 1.03	0.065	0.061	53
HEAD / SILL	1.92 x 0.87	0.058	0.060	54

*All painted aluminum frames. * % of IACS conductivity. † reversible.*

Corner Construction (4) the jambs were notched at the ends to receive the head / sill. One #8 x 1" PH SMS per corner was used.

Sash see special note.

glazing material 3/16" tempered glass with 8 mil clear lamination (interior side). Armorcoat and Armorgard: 8 mil (0.008") Safety and Security Film (polyethylene teraphthalate) coated with a self cross-linking acrylic pressure sensitive adhesive for mounting to glass.

film installation methods: S-1: own method.
S-2: conventional method.
S-3: 3-step cross squeegee method.

glazing method
The film was glazed in rubber gasket with Dow Corning 995 used in wet glazing film to frame.

bead 1/2" over rubber gasket partially trimmed back.

glass bite 1/2"

weatherstripping none.

reinforcements none.

sealant white caulk was used around the perimeter of the frame.

screen none.

INSTALLATION.

SCREWS/METAL CLIPS AND METHOD OF ATTACHMENT

substrata wood
mullions none.
shimming gap none.

Location	Type	Size	Spacing	Quantity
JAMBS	WOOD SCREW	#14 X 3"	DISTRIBUTED EQUALLY ±2" STARTING 4" FROM THE CORNER	9 PER EACH JAMB
HEAD & SILL	WOOD SCREW	#14 X 3"	DISTRIBUTED EQUALLY ±2" STARTING 4" FROM THE CORNER	5 PER SILL 5 PER HEAD

Test Results

Large Missile Impact Test

<i>Impact Location</i>	<i>Speed (fps)</i>	<i>Observations (in)</i>	<i>Description of Result</i>
S-1			
1) Center	40	---	NO PENETRATION
2) Corner	40	---	NO PENETRATION
S-2			
1) Center	40	---	NO PENETRATION
2) Corner	40	---	NO PENETRATION
S-3			
1) Center	40	---	NO PENETRATION
2) Corner	40	---	NO PENETRATION

The samples were impacted with a #1 Southern Yellow Pine S4S, 2 x 4 missile, 4 lbs, 46" long.

Cyclic Wind Pressure Test Results

Samples 1, 2 and 3

Cycles	Pressure (psf)	Deflection (in)	Set (in)	Recovery (%)	Duration (sec)
Positive Pressure Cycles					
3500	+25	N/A	----	----	1
300	+30	N/A	----	----	1
600	+40	N/A	----	----	1
100	+50	N/A	0.01		1
Negative Pressure Cycles					
50	-50	N/A	----	----	2
1050	-40	N/A	----	----	1
50	-30	N/A	----	----	2
3350	-25	N/A	N/A	N/A	1

Sample 3

Cycles	Pressure (psf)	Deflection (in)	Set (in)	Recovery (%)	Duration (sec)
Positive Pressure Cycles					
3500	+40	N/A	----	----	1
300	+48	N/A	----	----	1
600	+64	N/A	----	----	1
100	+80	N/A	0.01		1
Negative Pressure Cycles					
50	-80	N/A	----	----	2
1050	-64	N/A	----	----	1
50	-48	N/A	----	----	2
3350	-40	N/A	N/A	N/A	1

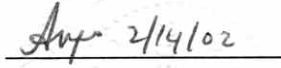
Conclusion

The sample was tested in accordance with SSTD 12-99 for up to 100 mph windspeeds. The samples were structurally intact with all parts securely in place at the conclusion of each test.

NOTE: The above results were obtained using the designated test methods, which indicates compliance with the performance requirements of the referenced specifications. This report does not constitute certification of the specimens tested.



Syed Waqar Ali, Ph. D.
President



Arshad Viqar, P.E.
Engineer of Record



BSF

TEST NUMBER:

HETI-02-1128

SAMPLE TG3: S-3

JANUARY 08 2002