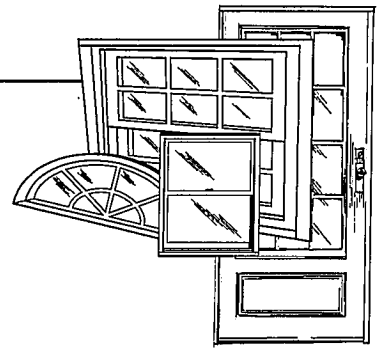


CERTIFIED TESTING LABORATORIES

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Report Number: CTLA 1753W-4
Report Date: October 25, 2007

STRUCTURAL PERFORMANCE TEST REPORT

Client: MGM Industries
287 Freehill Rd.
Hendersonville, TN 37075



Product Type and Series: Series 7010 Vinyl Fin Frame Picture Window Sash F-R25*
1118mm x 1626mm (44.00" x 64.00")

Test Specification: ASTM E 283-99 "Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors under Specified Pressure Differences across the Specimen."
ASTM E 547-00 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Differential."
ASTM E 330-02 "Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference."
ASTM F 588-04 "Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact."
ASTM D 618-00 "Standard Practice for Conditioning Plastics for Testing."
*Note: Specimen tested to: AAMA/WDMA/CSA 101/I.S.2/A440-05 "Standard/Specification for Windows, Doors and Unit Skylights" test methods but specimen does not qualify under minimum size requirements.

Frame: The extruded vinyl fin frame measured 1118mm (44.00") wide x 1626mm (64.00") high buck opening overall. Corners of frame sill and frame jambs utilized coped and butted corner construction and secured with three (3) #8 x 76mm (3.000") Phillips C.S S.M.S. fasteners in each corner. Corners of frame head and frame jambs utilized mitered and welded corner construction. The frame sill measured 110mm (4.342") wide x 23mm (.888") high. (Ref. Drawing # M-7004). The frame head and jambs measured 59mm (2.310") wide x 59mm (2.342") high. (Ref. Drawing # M-287). One (1) extruded aluminum slide on fin was utilized at the frame sill and measured 45mm (1.776") wide x 56mm (2.190") high. (drawing #A-127/8006 Nail Fin). The frame sill utilized an extruded aluminum sill adapter/tower that snapped on the vinyl sill. The sill adapter measured 3mm (.110") wide x 13mm (.526") high. Ref. Drawing # M-7007).

Configuration: One (1) fixed lite. O

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10/26/07

Sash Insert:

One (1) Fixed Sash measured 1041mm (41") wide x 1532mm (60.3125") high. Sash constructed from extruded vinyl with coped and butted corner construction and secured with one (1) per extrusion #8 x 25mm (1.00") Phillips P.H. S.M.S fastener. The top and bottom sash rails measured 043mm (1.690") wide x 059mm (2.330") high. The sash stiles measured 025mm (.984") wide x 041mm (1.628") high. Fixed lite had a day lite opening of 991mm (39") wide x 1418mm (55.8125") high.

Weather-stripping:

<u>Quantity</u>	<u>Description</u>	<u>Location</u>
Six (6) strips	Ultrafab woolpile w/fin 5mm (.187") x 6mm (.250")	Three (3) each side of sash stile.
One (1) strips	Ultrafab woolpile w/fin 5mm (.187") x 6mm (.250")	Exterior of sash head.
One (1) strips	Amesbury bulb vinyl closed cell Foam filled bulb 3/8"	Exterior of sash sill.

Hardware & Location: N/A

Glazing:

Insulated 19mm (.750") overall with 3mm (.125") Clear Annealed exterior lite, 13mm (.5") air space, 3mm (.125") Clear Annealed interior lite. Interior glazed with adhesive back bedding compound. Air space is comprised of galvanized steel "U" channel squiggle with Butyl seal. Glazing rested on rubber-setting blocks that measured 22mm (.850") wide x 22mm (.850") high x 17mm (.650") thick, with a 13mm (.500") glazing bite.

Sealant:

A narrow joint sealant was used on all frame corners, fixed meeting rail and vent corners

Weep System:

N/A

Reinforcement:

N/A

Additional Description:

Six (6) #8A x 51mm (2.00") Phillips P.H.S.M.S. were use to secure the sash to the main frame. Two (2) screws were applied threw each jamb. Two (2) screws were also applied through the sash header.

Screen:

N/A

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Installation:

Thirty-Eight (38) #10 x 25mm (1.000") Phillips P.H. S.M.S. were used to secure the specimen to the wooden buck in the following manner: Eight (8) in the frame head and sill located at 22mm (.875"), 191mm (7.500"), 348mm (13.6875"), 518mm (20.375"), 729mm (26.6875"), 843mm (33.1875"), 1013mm (39.875"), and 1165mm (45.875") measuring from left frame jamb to right frame jamb. Eleven (11) in each frame jamb located at 25mm (1.000"), 191mm (7.500"), 356mm (14.000"), 521mm (20.500"), 686mm (27.000"), 851mm (33.500"), 1016mm (40.000"), 1181mm (46.500"), 1346mm (53.000"), 1511mm (59.500"), and 1640mm (64.5625") measuring from frame sill to frame head. Reference drawing- Installation Detail Screw Location.

Surface Finish: White/Vinyl

Comment: Nominal 2-mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

Performance Test Results

<u>Paragraph</u>	<u>Title of Test</u>	<u>Method</u>	<u>Measured</u>	<u>Allowed</u>
5.3.2	Air Infiltration @ 1.57psf The tested specimen meets the performance levels specified in AAMA/WDMA 101.I.S.2/A440-05	ASTM E283-99	0.163 cfm/ft ²	.30 cfm/ft ²
5.3.3.2	Water Resistance 5.0 gph/ft ² WTP=3.75 psf The specimen was tested without an insect screen installed.	ASTM E547-00 Four (4) 5 min. cycles	No Entry	No Entry
5.3.4.2	Uniform Load Structural Permanent Deformation @ 37.5 psf Positive (D/P +25) @ 37.5 psf Negative (D/P -25)	ASTM E330-02 Ten (10) second duration Loc.1 Loc.1	Passed Passed	6mm (0.248") 6mm (0.248")

Location (1)-Max. Allowable Perm. Set after test load at center mid-span of fixed panel (0.4% of 1016mm (62.000") span) = 004mm (0.248")

5.3.5 Forced Entry Resistance ASTM F588-04 Passed
 Type "D" Window Assembly T₁ = 10 minutes
 Tools used: a spatula (10.1.1.1) and a piece of stiff wire (10.1.1.2).
 The test specimen meets the performance Grade 40.

5.3.6.2 Welded Corner Test ASTM D618-00 Passed
 Procedure "A"

Note: When loaded to failure, the break did not extend along the entire weld line.

[Handwritten Signature]
 10/29/07

Test Date: October 2, 2007

Test Completion Date: October 5, 2007

Comments: Testing was witnessed at MGM Industries at the Hendersonville, TN location. All equipment was calibrated in accordance with AAMA 103. Nominal 2-mil polyethylene film was used to seal against air leakage during structural loads. The film was used in a manner that did not influence the test results.

Remarks: Detail 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 CTL for a period of four (4) years. The results obtained apply only to the specimen tested.

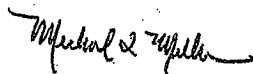
This test report does not constitute certification of this product, but only the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Certified Testing Laboratories assumed that all information provided by the client is accurate and that the physical and chemical properties of the components are as stated by the manufacturer.

Certified Testing Laboratories, Inc.

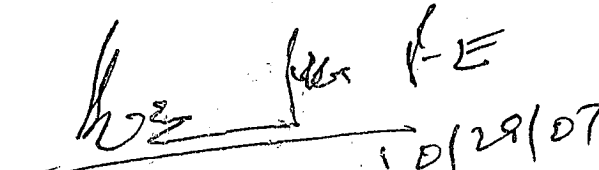
All Tests Witnessed by:

Gary Nations Certified Testing Laboratories
Ryan Blankenship- MGM Industries.



Michael Miller
Senior Lab Technician
Architectural Division
Certified Testing Laboratories, Inc.

cc: MGM Industries (2)
 A.L.I. (2)
 Ramesh Patel P.E. (1)
 File (1)



Ramesh Patel, P.E.
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10/29/07