



Quality Accuracy Assurance

Fenestration Testing Laboratory, Inc.

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Report Date: 9/21/2016
 Completion Date: 9/8/2016
 Expiration Date: 9/8/2020
 Page No. 1 of 6
 Lab. Number: 9136
 Project Number: 16-6665

OFFICIAL TEST REPORT

MANUFACTURER: Marretti
ADDRESS: Via del Crocifisso 489
 50058 Signa-Firenze Italy

SPECIFICATIONS: Florida Building Code
 Concentrated Load Test and ANSI Z97.1
PROJECT: Maretti

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Revision	Description	Author	Effective Date
0	Initial Release	Ms. Lusinda Delgado	9/21/2016
1	Updated remarks table to state the deviations of testing and changed manufactures name from Arredo Italiano to Marreti	Ms. Lusinda Delgado	5/22/2017

Notes

* designates measurements by laboratory
 ** as per manufacturer

Drawings referenced in this document are an integral part of this report, therefore, are required when distributing this test report. Test results obtained represent the actual value of the tested specimens and do not constitute opinion, endorsement, or certification by this laboratory.

This test report is considered the exclusive property of the client named herein and is applicable to the sample tested. This report may not be reproduced without the approval of Fenestration Testing Laboratory, Inc.

At conclusion of above tests, there was no apparent damage to the fasteners and after the impact the glass did not break. Test specimens were covered with 1.5 mil plastic sheeting to seal from air leakage when load test were performed, however this had no effect on above results.

Remarks

Detailed drawings will be retained by Fenestration Testing Laboratory for a period of one year from the original test date, and test report for a period of four years. Due to the code cycle change it is recommended that this report be evaluated during the lifespan of this document.

The glass railing was tested in accordance with ANSI Z97.1-15 (FBC section 1618.4.6.3) with no deviations and in accordance with the Florida Building Code section 1607.8.1/1607.8.1.1 with no deviations. The aluminum picket railing is not in accordance with the Florida Building Code section 1607.8.1/1607.8.1.1 due to the fact that only one sample was tested.

Testing was conducted as per instructions received from the manufacturer's company representative.

DESCRIPTION OF SAMPLE

Model Designation:	Glass Railing
Approximate Overall Size:	4'-8" (56") by 3'-4 1/2" (40 1/2") high
Sample A-1	

Glazing

Glazing Location	Glazing Material	Glazing Compound	Compound Color
One lite of glass	*7/8" nominal laminated glass composed of (2) 3/8" **tempered glass	None	N/A
Interlaying Film: **0.060"(*0.090") **Reva BF PVB by Innovaglass		Laminator: **Guardian	
Glazing Method: The glass was secured to each tread using two 3/8-24 by 1 1/2" FH MS with drop in anchor and a vinyl washer on the interior and exterior.			



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Sample Installation

The glass was secured at the upper left corner using a 2 3/8" by 3 1/8" by 1 1/8" by 1/4" thick steel angle. The angle was fastened to a steel substrate using one 5/16-18 by 1" HH MS with two washers and one nut and fastened through the glass using one 8-1.25 by 5/8" FH MS with one vinyl washer on the interior and exterior and a decorative nut. The glass was secured at the lower right corner using a 14 1/8" long two piece steel shoe base. The shoe base was fastened to the concrete slab using two 3/8-16 by 1 1/2" FH MS with a 3 1/4" long drop in anchor.

Sample: A-1	Temperature: 89.1°F	Barometric Reading: 30.11 inches Hg		
Title of Test		Load	Notes	
Concentrated Load Test		200 lbs	As per FBC section 1607.8.1/1607.8.1.1. The load was applied at the corner of the glass.	
Reading#	Deflection	Permanent Set	Results	Add. Info
1	0.500"	None	Passed	

Sample: A-1	Temperature: 89.1°F	Barometric Reading: 30.11 inches Hg		
Title of Test		Load	Notes	
Concentrated Load Test		400 lbs	As per FBC section 1607.8.1/1607.8.1.1. The load was applied at the corner of the glass.	
Reading#	Deflection	Permanent Set	Results	Add. Info
1	0.878"	None	Passed	



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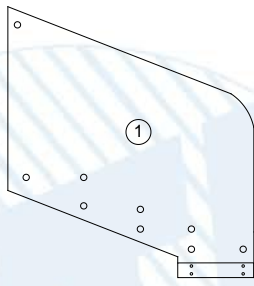
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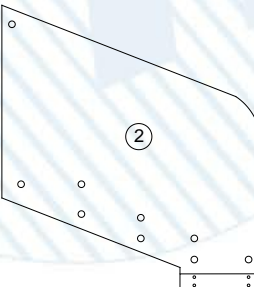
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Sample: A-1	Temperature: 90.1°F	Barometric Reading: 30.11 inches Hg
Title of Test		Notes
Drop Test		As per FBC section 1618.4.6.3
		
Drop #	Results	Add. Info
1	Passed	Impacted center of lite. After impact the glass did not break.

Sample: A-1	Temperature: 90.1°F	Barometric Reading: 30.11 inches Hg
Title of Test		Notes
Drop Test		As per FBC section 1618.4.6.3
		
Drop #	Results	Add. Info
2	Passed	Impacted center of lite. After impact the glass did not break.



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Sample: A-1	Temperature: 90.1°F	Barometric Reading: 30.11 inches Hg
Title of Test		Notes
Drop Test		As per FBC section 1618.4.6.3
Drop #	Results	Add. Info
3	Passed	Impacted center of lite. After impact the glass did not break.

DESCRIPTION OF SAMPLE

Model Designation:	Picket Railing
Overall Size:	3'-8" (44") by 3'-7" (43") high
Size and Location of Pickets:	Nine 41 1/4" long aluminum horizontal pickets located 4" on center
Size and Location of Posts	40 3/4" high vertical posted located one at each end
Sample B-1	

Additional Information

The sample was tested using one 44" long by 1 3/8" outside diameter hollow metallic handrail tube. The hand rail was fastened to each vertical post using one metallic saddle. The hand rail was fastened to the saddle using two No. 4 by 3/8" FH SMS and the saddle was fastened to the vertical post using one 1/4-28 by 3/4" FH MS.

The sample was tested using a two piece vertical post. The vertical post were fastened together using a single row of 1/4-28 by 1" set screws located 3/4", 2 1/8", 2 7/8", 7 1/8", 11 3/8", 15 3/8", 19 5/8", 24", 28", 32 1/8", 36 3/8" and 37 3/4" from bottom.

The horizontal pickets were not fastened, they are held in place in between the two piece vertical post.

The upper left side of the hand rail was fastened to a steel substrate using one metallic bracket and three 3/8-16 by 2 1/2" HH MS with washer and nut.

Sample Installation

The vertical post were fastened to the threads using two threaded rods.



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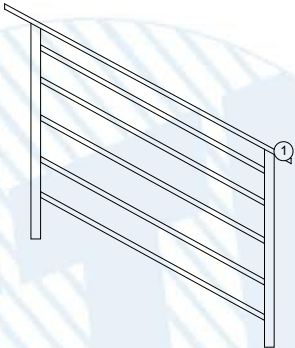
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Sample: B-1	Temperature: 89.0°F	Barometric Reading: 30.11 inches Hg		
Title of Test		Load	Notes	
Concentrated Load Test		200 lbs	As per FBC section 1607.8.1/1607.8.1.1. The load was applied at the corner of the hand rail.	
				
Reading#	Deflection	Permanent Set	Results	Add. Info
1	4.500"	0.500"	Passed	

Witnessed by:
Ms. Idalmis Ortega, FTL P.E.

FENESTRATION TESTING LABORATORY, INC.

Technicians:
Mr. Michael Chala

Mr. Manny Sanchez
Chief Executive Officer