



R & B Wagner, Inc

Series: Panel Grip 2 Aluminum Balustrade Railing
System

Client Package

Fenestration Testing Laboratory
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Medley, Florida 33166
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Quality Accuracy Assurance

Fenestration Testing Laboratory, Inc.

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Report Date:	10/1/2015
Completion Date:	8/27/2015
Expiration Date:	8/27/2025
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Lab. Number:	8659
Project Number:	15-5732

OFFICIAL TEST REPORT

MANUFACTURER: R & B Wagner, Inc

SPECIFICATIONS: California Building Code
ASTM E1996
ANSI Z97.1, concentrated load
PROJECT: R & B Wagner, Inc

ADDRESS: 10600 West Brown Deer Road
Milwaukee, Wisconsin 53224

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DESCRIPTION OF SAMPLE	
Model Designation:	Series: Panel Grip 2 Aluminum Balustrade Railing System
Overall Size:	12'-2 1/16" (146 1/16") by 3'-7 13/16" (43 13/16") high
Sample A-1	

Glazing			
Glazing Location	Glazing Material	Glazing Compound	Compound Color
All three lites	*13/16" nominal laminated glass composed of (2) 3/8" tempered glass	none	n/a
Interlaying Film: *0.060" **DuPont SentryGlas		Laminator: **Oldcastle	
Glazing Method: The glass was secured using a single row of **PanelGrip™ located 3 3/4", 11 1/8", 23 3/8", 32 1/2", 41 1/8", 53 1/4", 64 1/16", 74 11/16", 83 1/8", 92 15/16", 101 1/16", 111", 122 3/4", 131", and 141 3/8" from left. Each **PanelGrip™ is secured using one 1/4-20 by 1 1/2" long socket head machine screws with washer and nut.			
Pocket glazed at the top with a *1" glazing penetration using glazing tape on the interior, exterior and glazing pocket.			
Daylight Opening:	Right lite: 47 5/8" by 38 5/16" high	Left and center lite: 47 7/16" by 38 5/16" high	

Additional Information
The sample was testing using a 146 1/16" long stainless steel hand rail.

Sample Installation
The sample was installed into a 4,000 psi concrete test slab. The shoe base was installed using a single row 5/8" by 6 1/8" HWH wedge bolts located 2 1/8", 6 3/4", 12 3/4", 18 9/16", 24 3/4", 30 5/8", 36 3/4", 42 5/8", 48 5/8", 54 3/4", 60 3/4", 66 3/4", 72 3/4", 78 3/4", 84 3/4", 90 3/4", 96 7/8", 102 3/4", 114 5/8", 120 3/4", 126 3/4", 132 5/8", 138 5/8" and 143 5/8" from left.



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Sample: A-1		Temperature: 83°F		Barometric Reading: 29.98 inches Hg	
Title of Test		Load		Notes	
Concentrated Load Test		600.0 lbs		As per CBC section 1607.8.1. A horizontal load was applied on center of the hand rail	
Reading#	Deflection	Permanent Set	Results	Add. Info	
1	1.629"	None	Passed		
2	0.069"	0.018"	Passed		

Sample: A-1		Temperature: 83°F		Barometric Reading: 29.98 inches Hg	
Title of Test		Load		Notes	
Concentrated Load Test		200.0 lbs		As per CBC section 1607.8.1.1. A horizontal load was applied at the corner of the hand rail	
Reading#	Deflection	Permanent Set	Results	Add. Info	
1	1.062"	0.062"	Passed		



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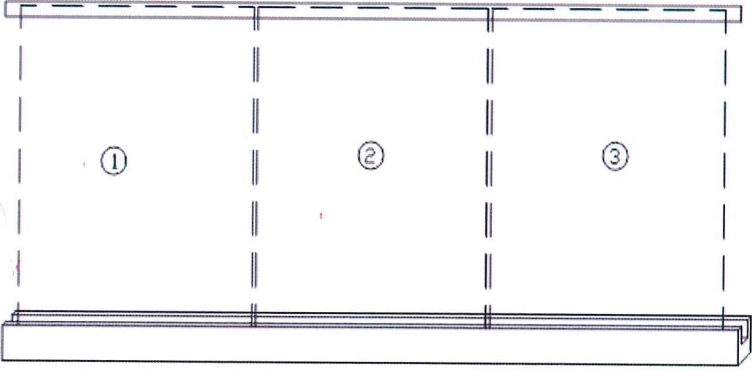
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Sample: A-1	Temperature: 79°F	Barometric Reading: 29.99 inches Hg
Title of Test		Notes
Drop Test		As per CBC section 2407.1.4.1
		
Drop #	Results	
1	Passed	Impacted center of lite. After impact the glass did not break.
2	Passed	Impacted center of lite. After impact the glass did not break.
3	Passed	Impacted center of lite. After impact the glass did not break.



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Sample: A-1	Temperature: 83.1°F	Barometric Reading: 30.01 inches Hg	
Title of Test	Notes		
Large Missile Impact Test			
Missile Weight	Missile		
9.25 pounds	2" by 4" by 92" long		
Impact	Speed	Results	Add. Info
1	49.6 ft/sec	Passed	
2	49.8 ft/sec	Passed	
3	49.9 ft/sec	Passed	
4	50.0 ft/sec	Passed	
5	49.8 ft/sec	Passed	
6	49.9 ft/sec	Passed	

Revision	Description	Author	Effective Date
0	Initial Release	Ms. Iliana Sanchez	10/1/2015



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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 fasteners and after impact the glass did break, but remained in place and there wasn't any apparent tear in the inter layer film. 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.

This product was tested in accordance with the California Building Code (2013) concentrated load tests sections 1607.8.1, 1607.8.1.1 and 1607.8.1.2.

This product was tested in accordance with ANSI Z-97.1-09 (CBC section 2407.4.1) with no deviations.

This product was tested in accordance with the ASTM E1996-09 (CBC section 2407.1.4.2) with no deviations.

Testing was conducted as per instructions received from the manufacturers company representative.

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

FENESTRATION TESTING LABORATORY, INC.

Technicians:
Mr. Harold Anacona
Mr. Gerresse Lee

Mr. Manny Sanchez
Chief Executive Officer