Intertek | Architectural Testing

TEST SUMMARY

Rendered to:

FORTRESS RAILING PRODUCTS
1720 North 1st Street
Garland, Texas 75040

Project No.: F5647.01-119-19
Test Dates: 04/04/16
Through: 04/07/16
Test Summary Date: 05/26/16

Product: 8 ft by 42 in *Al[13] Traditional Aluminum Railing*

Scope: Architectural Testing, Inc., an Intertek company ("Intertek-ATI") recently conducted structural performance tests on the *Al[13] Traditional Aluminum Railing* with *Al[13] Evolve External* Brackets and *Al[13] Evolve P2* Brackets in a level (in-line) configuration. The guardrail systems had an overall top rail length (inside of post to inside of post) of 93-1/8 in and 93-5/8 in with an overall rail height (top of top rail to bottom of bottom rail) of 40 in. Top and bottom rails attached to a 3 in square aluminum post mount (*Al[13]*) on one end and a conventional 4x4 wood post on the other end via *Al[13] Evolve External* brackets and *Al[13] Evolve P2* brackets. Testing was performed in accordance with Section 4.2.1 of ICC-ES™ AC273 (March 1, 2008 - Editorial Revised February 2014), *Acceptance Criteria for Handrails and Guards.*

Limitations: Materials used for testing were not sampled in accordance with Section 2.4 of ICC-ES™ AC273. Anchorage of support posts to the supporting structure is not included in the scope of this testing and would need to be evaluated separately.

Test Results Summary Table:

Test	Target Load	Result	
		***Al[13] Evolve External* Bracket**	***Al[13] Evolve P2* Bracket**
Infill Load at Center of Two Balusters	2.5 x Design Load (125 lb)	Held in excess of one minute (PASS)	
Uniform Load on Top Rail (45° from Horizontal)	2.5 x 50 plf Design Load (975 lb / 970 lb)	Held in excess of one minute (PASS)	
Concentrated Load at Midspan of Top Rail	Design Load (200 lb)	1.21 in Avg Net Deflection vs. 2.73 in Deflection Allowed (PASS)	1.13 in Avg Net Deflection vs. 2.72 in Deflection Allowed (PASS)
	2.5 x Design Load (500 lb)	Held in excess of one minute (PASS)	
Concentrated Load at Both Ends of Top Rail (Brackets)[1]	2.5 x Design Load x 2 (1000 lb)	Held in excess of one minute (PASS)	
Concentrated Load at Top of Post Mount (42 in High)	2.5 x Design Load (500 lb) [2]	Held in excess of one minute (PASS)	
	Average Ultimate Load	685 lb	

[1] *Load was imposed on* both *ends of rail using a spreader beam; therefore, loads were doubled.*
[2] *Reference Intertek-ATI Report No. B7787.01-119-19.*

Conclusion: The 8 ft by 42 in guardrail assemblies described herein meet the structural performance requirements of Section 4.2.1 of ICC-ES™ AC273 for use in IBC - All Use Groups when attached to conventional wood posts or approved structural aluminum supports with a minimum wall thickness of 0.16 in.

Based on the average ultimate loads achieved from testing, the maximum rail length that the 3 in square *Al*[13] post mount can support is 5.5 ft (center-to-center of posts) for IBC - All Use Groups code occupancy classifications (Average ultimate load divided by 125 plf).

This is a summary of the testing for your information only. Please refer to Intertek-ATI Report No. F5647.01-119-19 for complete test results and detailed assembly description.

For INTERTEK-ATI:

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