

The Hollaender Mfg. Co.

Originators and Manufacturers of:

Speed-Rail ®
 Nu-Rail ®
 Rackmaster ®
 Mend-a-Rail ®
 Interna-Rail ®
 Speed-Rail II ®
 Bumble Bee Safety Rail ®

**EXECUTIVE SUMMARY****HOLLAENDER Interna-Rail® VUE Structural Testing - IBC 2012**

Testing Performed 5/6/14 & 5/9/14

Loading Requirements

IBC 2012 1607.8.1 Handrails and guards. Handrails and guards shall be designed to resist a linear load of 50 pounds per linear foot (plf) (.073 kN/m) in accordance with Section 4.5.1 of ASCE 7.

IBC 1607.8.1.1 Concentrated load. Handrails and guards shall also be designed to resist a concentrated load of 200 pounds (0.89 kN) in accordance with Section 4.5.1 of ASCE 7.

IBC 1607.8.1.2 Intermediate rails. Intermediate rails (all those except the handrail), balusters, and panel fillers shall be designed to resist a concentrated load of 50 pounds (0.22 kN) in accordance with Section 4.5.1 of ASCE 7.

ASCE 7 4.5.1. Intermediate rails (all those except the handrail or top rail), and panel fillers shall be designed to withstand a horizontally applied normal load of 50 lb (0.22 kN) on an area not to exceed 12 in. by 12 in. (305 mm by 305 mm) including openings and space between rails and located so as to produce the maximum load effects.

Product Test Data

Test Sample: Interna-Rail® Vue Design, Consisting of 6005-T5 Sch. 80 Posts, Sch. 40 Rails, 3/8" Tempered Glass Infill Panel, Vue Panel Clips, #142 Base Flanges. Overall length of rail section 4'0".

Load Criteria per ASTM E935:

Rail - All loads were applied 42" (*Center of top rail*) above the mounting surface.
 A pre-load of 100 lbs. was applied to eliminate any residual deflection in the test system and the deflection was set to zero.
 A point load of 150 lbs. was applied and deflection was recorded by test system.
 The load was reduced to 100 lbs. and the permanent deformation was recorded by the test system.
 Process was repeated, increasing the load by 50 lbs each time and returning to the pre-load until a max load of 500 lb was reached.

Glass Panel - All loads were applied in the center of the glass infill panel over a 12" x 12" square area.
 A pre-load of 50 lbs. was applied to eliminate any residual deflection in the test system and the deflection was set to zero.
 A point load of 100 lbs. was applied and deflection was recorded by test system.
 The load was reduced to 50 lbs. and the permanent deformation was recorded by the test system.
 Process was repeated, increasing the load by 50 lbs each time and returning to the pre-load until a max load of 400 lb was reached.

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Maximum Allowable Deflection and Permanent Deformation per ASTM E985:

All dimensions in inches, to be measured at top of post.

Allowable Rail Deflection: $D_a = 3.5$

Allowable Rail Permanent Deformation: $D_p = .5$

Test Results

Load on Railing System

Test No.	Load (lb)	D_a (in)	D_p (in)	Pass
Test No. 1	450	2.80	.47	√
Test No. 2	450	2.83	.44	√

Load on 3/8" Glass Infill Panel

Test No.	Load (lb)	Pass
Test No. 1	400	√
Test No. 2	400	√

Conclusion

Based on the above stated test results and the performance criteria set forth by ASTM, this product meets the structural load requirements specified by the IBC 2012.

Interna-Rail Vue, 42" High Rail, 3/8" Glass Infill Test - IBC 2012

