

**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- BRITISH COLUMBIA**  
 Testing Performed 5/6/14 & 5/9/14

**Loading Requirements****British Columbia Building Code - 4.1.5.15 Load on Guards**

1) The minimum specified horizontal load applied inward or outward at the top of every required *guard* shall be:

(c) 0.75 kN/m (51 lb/ft) or a concentrated load of 1.0 kN (225 lb) applied at any point.

2) Individual elements within the guard, including solid panels and pickets, shall be designed for a concentrated load of 0.5 kN (113 lb) applied over an area of 100 mm (4 in) x 100 mm (4 in) located at any point in the element or elements so as to produce the most critical effect.

**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.

The load was increased to 130 lb 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 (lbs) to the following – 160, 190, 225, 250, 300, 350, 400, 450 & 500. After each increase, the load was returned to the to the pre-load and permanent deflection was recorded.

**Glass Panel** - All loads were applied in the center of the glass infill panel over a 4" x 4" 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.

The load was increased to 80 lb 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 (lbs) to the following – 80, 113, 140, 170, 200, 230, 260, 300, 350 & 400. After each increase, the load was returned to the to the pre-load and permanent deflection was recorded.

*Maximum Allowable Deflection and Permanent Deformation per ASTM E985:*

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

Allowable Rail Deflection:  $D_a = 3.5$

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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	2.71	.41	√
Test No. 2	450	2.70	.39	√

\* - Required Load 225 lb or 4 ft x 51 lb/ft = 204 lb.

Load on 3/8" Glass Infill Panel

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

^ - Required load 113 lb

## 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 BCBC 4.1.5.15



# Interna-Rail Vue, 42" High Rail, 3/8" Glass Infill Test - British Columbia Building Code

