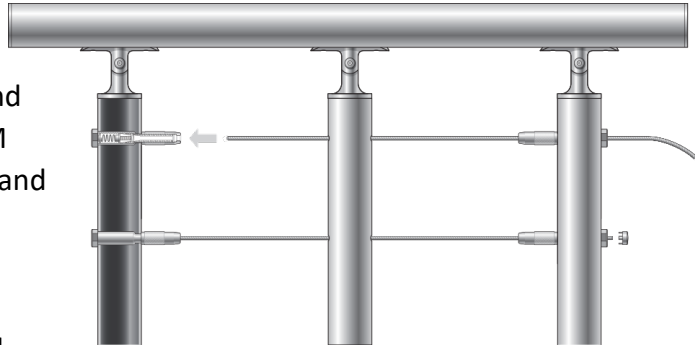


# LOAD TEST REPORT

Date: 09/12/2018

## GENERAL

One complete railing system, consisting of two round posts, was tested at maximum spacing to evaluate the performance of Captive Anchoring and Tensioning Cable railing system according to ATSM E935 to confirm with IBC 2012 Section 1607.7.1.1 and CBC 2010 Section 1607.7.1.1



## TEST SPECIMENS

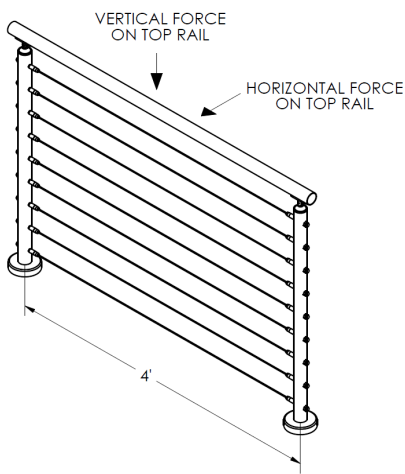
The railing system consisted of pre-fabricated infill cables and posts (49-CS424/36/F/E/SF). The infill cables consisted of 1/8-in Stainless steel cable. The post consisted of 1.67-in. round. The assembled railing system was 4-ft length with 36-in. top rail height.

## TEST PROCEDURE

The railing system was tested according to ASTM E985-00, Sec. 7.1.1 to confirm with the IBC 2012 and IRC 2012 load requirements of 200 lbs concentrated load. Considering factor of safety = 2.0, Here in the test, The Specimen is subjected to 400 lbs load. The posts of the railing assembly were rigidly bolted on to the test frame with four bolts. The assembly was then sequentially subjected to the following two loading configurations –

- 1) 400 lbs concentrated load applied at the top mid-span vertically,
- 2) 400 lbs concentrated load applied at the top mid-span horizontally.

The load was applied with a hydraulic cylinder and test fixture apparatus. The pressure from hydraulic cylinder simulates the force of someone putting their entire weight on a handrail. All the apparatus



and measurement devices were calibrated before the testing. A measuring device is firmly attached that allows measurement of movement of the handrail from its original preloaded position. The test force was measured with an electronic load cell positioned between the test specimen and hydraulic cylinder. The applied force value can be seen on the computer screen. The displacement is recorded using calibrated digital ruler. The reading of the ruler was indicated in the computer screen as well. The loading sequence consisted of applying the load gradually to the target load and hold for 2 min, then release to no load condition. The applied loads and the axial displacement/deformation of the top rail were measured and recorded continuously with approximately 25 lbs increment of the load applied and a load-deformation curve was developed at the end of each test sequence.

The test was considered completed once the target load has been reached or the specimen failed. The residual deformations at certain load increments were also noted after removal of the applied load in order to gauge permanent deflection of the system.

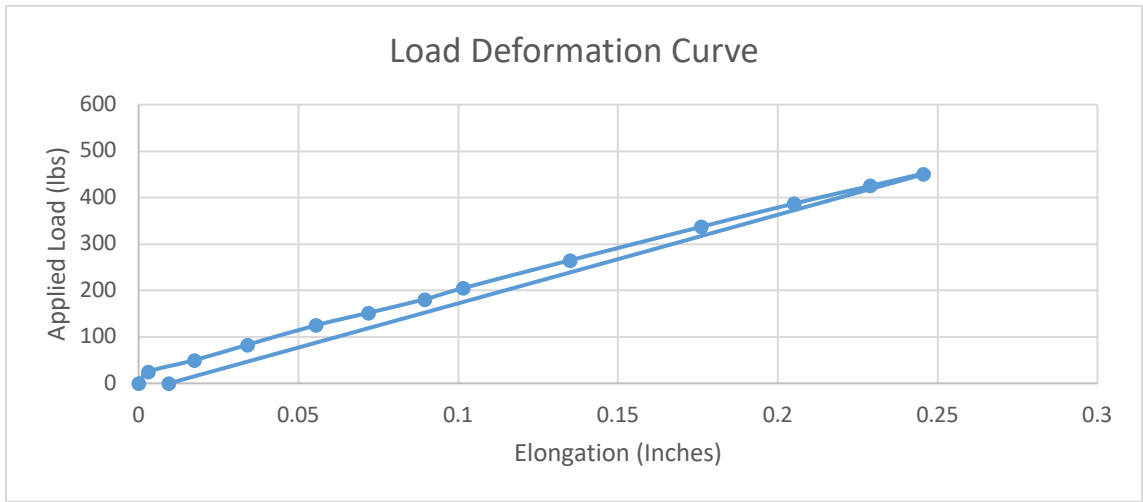
**RESULTS**

- 1. During the test, the railing assembly did not show any sign of failure at the prescribed loads.
- 2.

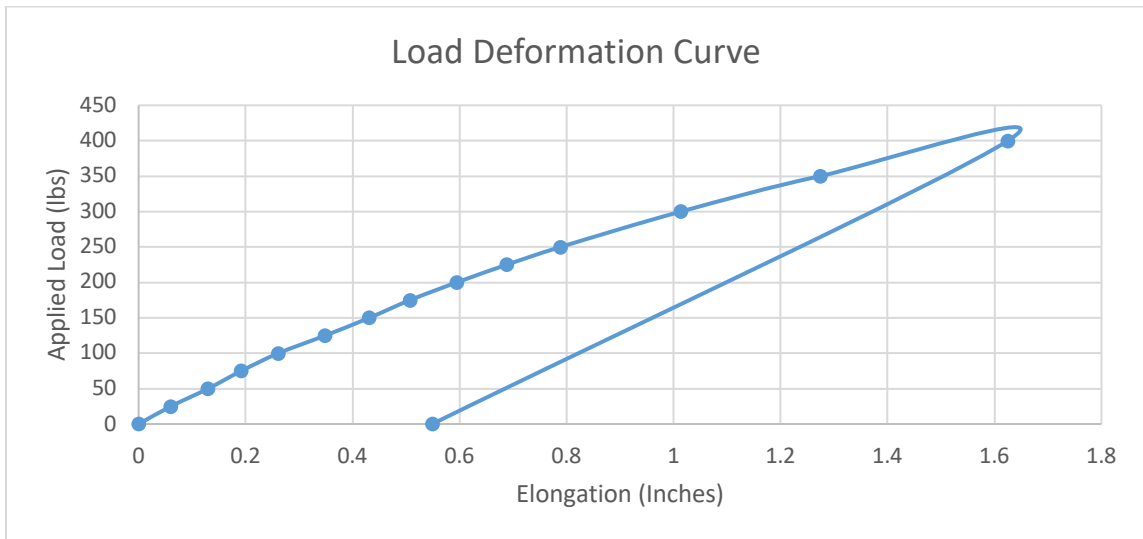
Assembly configuration	Residual Deflection Measured
400 lbs Vertical at top rail mid-span	0.0095 Inches
400 lbs Horizontal at top rail mid-span	0.5490 Inches

*Rail Span = 4 Ft., Rail height = 36 in.*

**400 lbs Vertical at top rail mid-span**



**400 lbs Horizontal at top rail mid-span**



**CONCLUSION**

The C.A.T. cable railing systems with round posts identified in this test report have complied with the loads specified in the 2012 International Building Code, Section 1607.7.1.1 as described.

Tested & Reported by: Samay\_Patel

Reviewed by: 