CONSTRUCTION REASEARCH LABORATORY, INC.
7600 N.W.79TH AVENUE MIAMI, FLORIDA 33166 Phone : 305-592-9222 FAX : 305-594-9148 crlmiami@bellsouth.net

Report 7444-13B-FBC **15 July 2013**

Tested: 9 July 2013

TESTING OF SAFTY RAILING

Client:

SĀFTRON

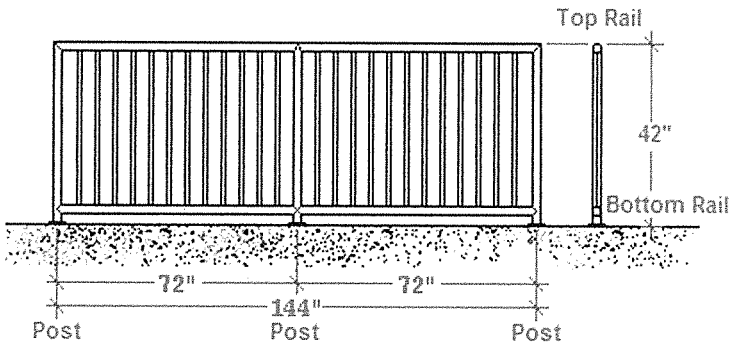
SĀFTRON Manufacturing, LLC
6012 33rd St E
Bradenton, FL 34203- USA
Phone: (305) 233-5511, Fax: (941) 751-2802

General: Load tests on Steel/ PCV Plastic Safety Railings to show conformance to requirements the Florida Building Code, FBC-2010.

Witness to Testing:
Robert Weise, SĀFTRON Manufacturing, LLC
George Dotzler, CRL Director of Operations

Yamil G. Kuri, P.E., Official Witness
Michael Lamborghini, CRL Test Engineer

Description of Specimen: The test specimen consisted of a composite structure of PVC pipe and aluminum pipe as shown in the below referenced drawings. The test specimen was also of the nominal dimensions as shown at right (as viewed from interior side, all diagrams are similar).



Statement of Conformance: The specimen is in conformance with drawings provided by the manufacturer. These drawings have been marked to indicate the portions descriptive of these tests.

Labeled:

2200 SERIES, 6' STEEL TEST RAIL, PLATE MOUNT
Date: 5/22/2013 Sheet 1 0f 1

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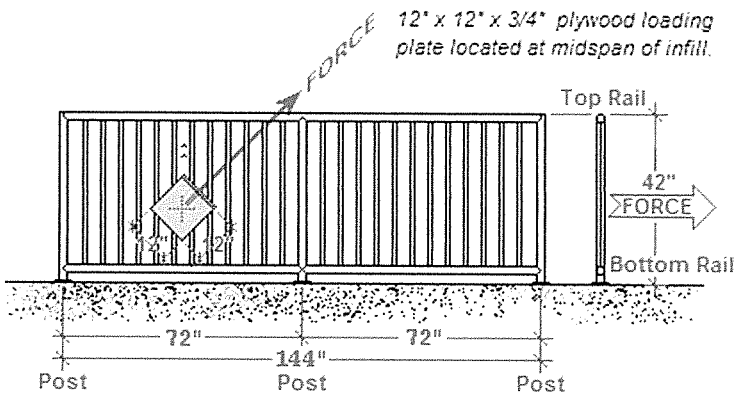
Test I – Load on Baluster:

A horizontal load was applied, for sixty seconds, to a 12" x 12" piece of ¾" plywood positioned at the mid-height of the baluster (as shown in the diagram at right). Results as follows:

Code	Load (Lbs.)	Results
FBC-2010	50.0	No Failure / Passed

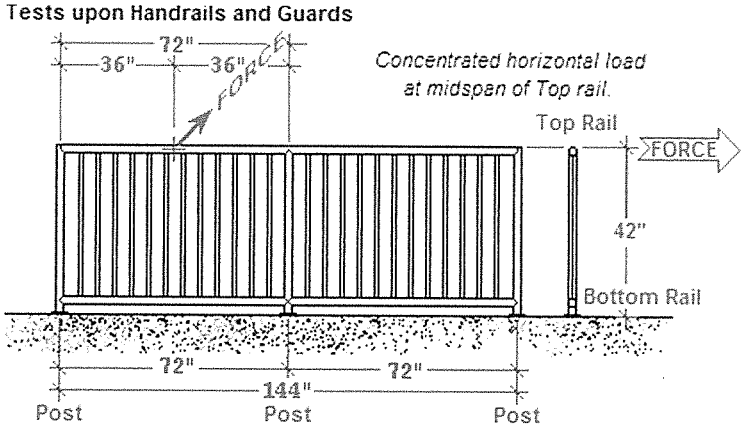
Tests upon Components



Test II – Horizontal Point Load on Top Rail:

A single load was applied, for sixty seconds, to the mid-span of the top rail of the specimen (as shown in the diagram at right). Deflection Gauges were placed at the top of each post adjacent to the load and at the center of the Top Rail between the load points to record deflections. Gauges were zeroed before each subsequent load. Results as follows:

Tests upon Handrails and Guards

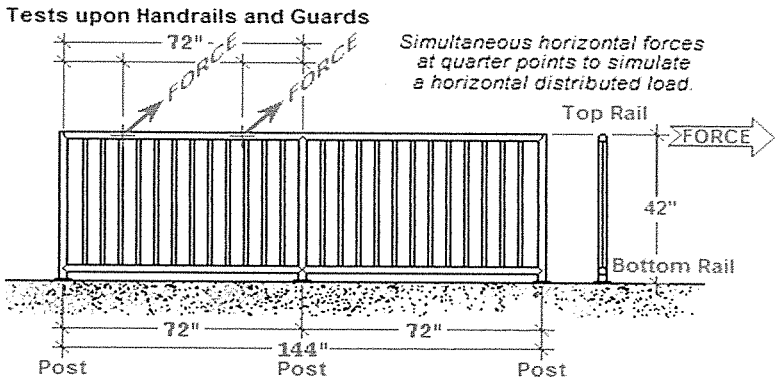


Code		Load (Pounds)	Defl'n / Set (In.) Top of post Lt.	Defl'n / Set (In.) Top Rail Center	Defl'n / Set (In.) Top of post Rt.
FBC-2010	200 Pounds @ mid rail	200.0	0.4375 / 0.0	1.750 / 0.1875	0.500 / 0.0

Test III –Distributed Horizontal Load : Top Rail:

Two equivalent and simultaneous loads were applied, for sixty seconds, to the top rail of the specimen (as shown in the diagram at right) at quarter points to simulate statically the equivalent conditions as a distributed load. Deflection Gauges were placed at the top of each post adjacent to the load and at the center of the Top Rail between the load points to record deflections. Gauges were zeroed before each subsequent load. Results as follows:

Tests upon Handrails and Guards



Code	Dist. load (PLF)	Load (Lbs.)	Total Load (Lbs.)	Defl'n / Set (In.) Top of post Lt.	Defl'n / Set (In.) Top Rail Center	Defl'n / Set (In.) Top of post Rt.
FBC-2010	50.0	150.0	300.0	0.750 / 0.0	2.0 / 0.125	0.875 / 0.0

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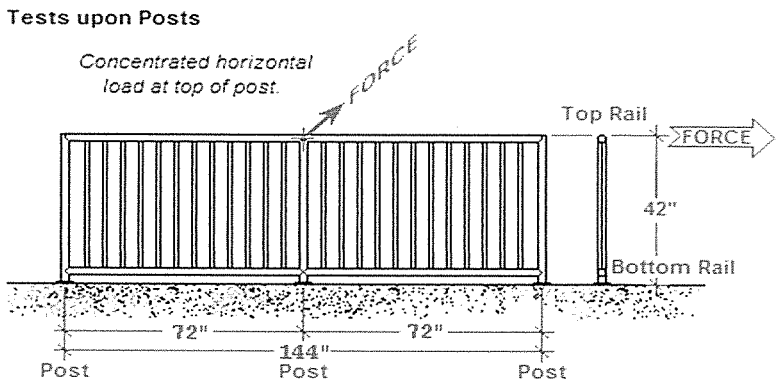
Test IV – Horizontal Point Load on Post:

A single load was applied, for sixty seconds, to the top of the central post of the specimen (as shown in the diagram at right). Deflection Gauges were placed at the top of this post to record deflections. Gauges were zeroed before each subsequent load. Results as follows:



Code		Load (Pounds)	Defl'n / Set (Inches) Top of post.
FBC-2010	Top Rail on Post	200.0	1.000/ 0.063
FBC-2010	Rail req. 6 Ft x 50 PLF	300.0	1.625 / 0.1875

Summary: Tests were conducted in accordance with the requirements of the Florida Building code with a safety factor of two and residual deflections at recovery of greater than or equal to 80% in all cases.

Respectfully submitted,

CONSTRUCTION RESEARCH LABORATORY, INC.

Report by Michael Lamborghini : _____

Test witnessed & report reviewed by Yamil G. Kuri, P.E.: _____

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