

Report 7440-13 –ICC

26 April 2013

Tested: 26 April 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

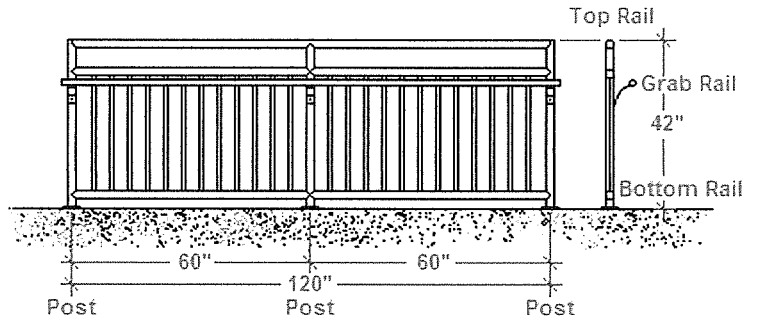
General: Load tests on Aluminum / PCV Plastic Safety Railings to show conformance to requirements for the International Code Council, ICC ES AC 174.

Witness to Testing:

Robert Weise, SĀFTRON Manufacturing, LLC
George Dotzler, CRL Director of Operations

Yamil G. Kuri, P.E., Official Witness
Robert Vilan, 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:

2400 SERIES ALUMINUM TEST RAIL, PLATE MOUNT

Date: 4/22/2013 Sheet 1 of 1

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APR 26 2013

CONSTRUCTION RESEARCH LABORATORY, INC.

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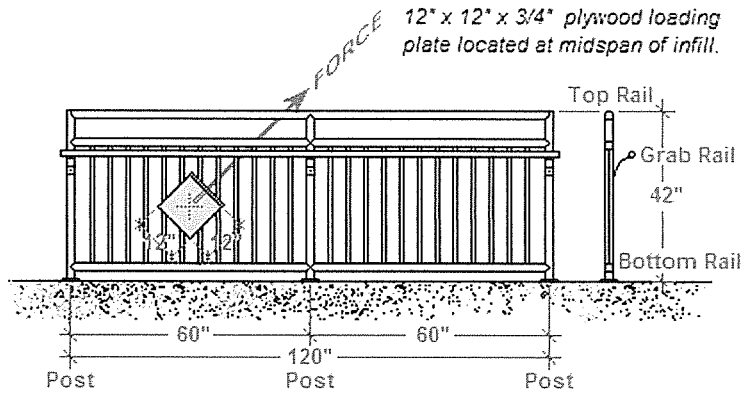
Test I – Load on Baluster:

A horizontal load was applied, for sixty seconds, to a 12" x 12" piece of 3/4" plywood positioned at the mid-height of the baluster (as shown in the diagram at right).

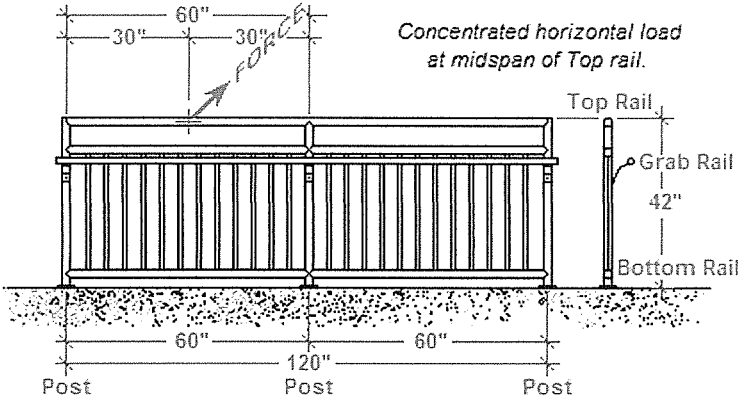
Results as follows:

Code	Load (Lbs.)	Results
ICC ES AC 174	125.0	No Failure / Pass

Tests upon Components



Tests upon Handrails and Guards

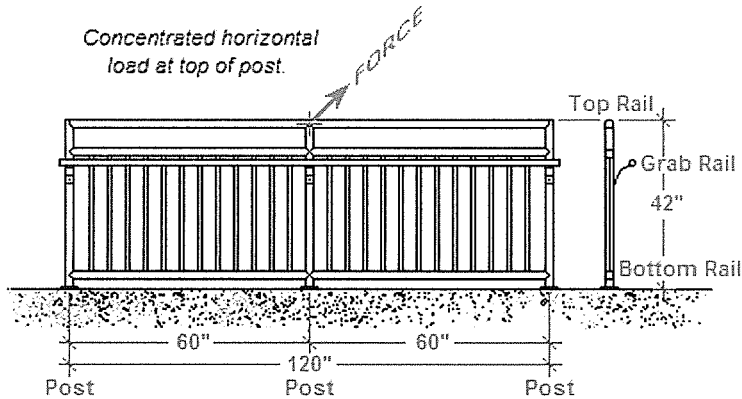


Test II – Horizontal Point Load on Top Rail:

A single load was applied, for sixty seconds, to the midspan 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:

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.
	0.0	0.000 / NA	0.000 / NA	0.000 / NA
ICC ES AC 174	200.0	0.730 / 0.010	1.440 / 0.020	0.765 / 0.005

Tests upon Posts



Test III – 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 (Lbs.)	Defl'n / Set (In.) Top of post.
	0.0	0.000 / NA
ICC ES AC 174	Top Rail on Post	200.0 / 1.220 / 0.020
	0.0	0.000 / NA
ICC ES AC 174	Rail req. 5 Ft x 50 PLF	250.0 / 1.580 / 0.025

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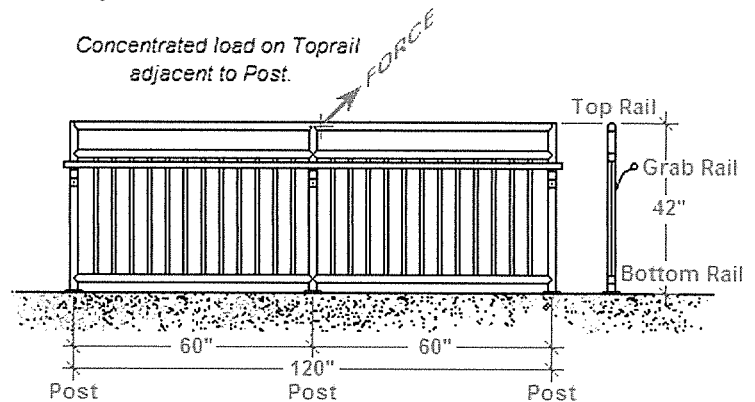
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Tests upon Handrails and Guards

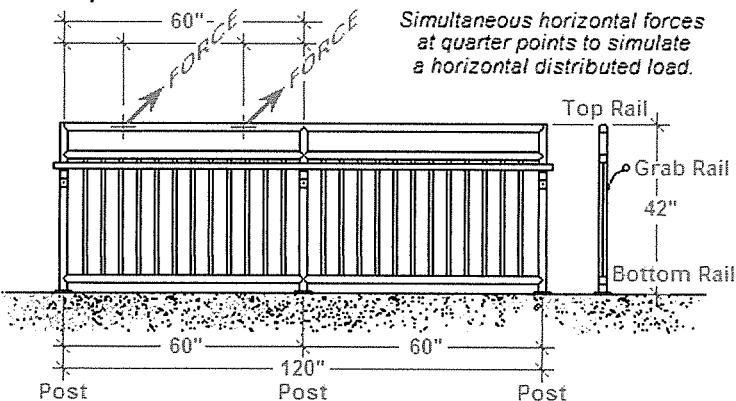
Test IV – Horizontal Point Load on Top Rail:

A single load was applied, for sixty seconds, to the top rail of the specimen immediately adjacent to the central post (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.
		0.0	0.000 / NA
ICC ES AC 174	Top Rail near Post	200.0	1.050 / 0.010
		0.0	0.000 / NA
ICC ES AC 174	Top Rail near Post	250.0	1.400 / 0.020

Tests upon Handrails and Guards



Test V – 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. Results as follows:

Code	Distributed load (Lbs.)	Eq. Load (Lbs.)	Total Load (Lbs.)	Results
ICC ES AC 174	125.0	312.5	625.0	No Failure / Pass

Summary: Tests were conducted in accordance with the requirements of the International Code Council, ICC ES AC 174 with recovery after deflections of greater than or equal to 80% in all cases.

Respectfully submitted,

CONSTRUCTION RESEARCH LABORATORY, INC.

Report by George Dotzler:

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

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