

Product Evaluation

MC14 | 0222

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: MC-14

Effective Date: February 1, 2022

Re-evaluation Date: February 2026

Product Name: Aluminum Guard Rail System, AFCO-Rail™ Railing System

Manufacturer: AFCO Industries, Inc.
3400 Roy Street
Alexandria, LA 71307
(877) 563-4251

General Description:

The AFCO Rail™ railing system is a 120" wide by 42" high aluminum stair guard rail system. The guard rail system is comprised of aluminum rails, balusters, brackets, and posts produced by an extrusion process. Components of the system are:

Top Rail: 2" high by 2.3" countered 6063-T aluminum extrusions with 0.08" wall.

Bottom Rail: 1.5" wide by 1.25" deep 6063-T6 aluminum extrusion with 0.08" wall.

Pickets (in-fill): 0.75" square 6063-T6 aluminum extrusion with 0.05" wall.

Baluster Connector: 0.63" diameter (at bottom) by 0.67" high glass filled nylon connector with one 0.19" diameter hole in the center for attachment to the rail using a No. 10 x 3/4" pan head sheet metal screw.

Top Rail Bracket: 2" wide by 1.3" high 6005A-T612 aluminum extruded saddle bracket with separate 2.5" wide by 1.2" high 6005A-T61 aluminum extruded saddle bracket cover, both of which were mitered to fit stair rails.

Bottom Rail Bracket: 1.7" wide by 1.8" high 6063-T6 aluminum extruded bracket mitered to fit stair rails.

Posts: 3 in square are 6005A-T61 aluminum extrusion with 0.125" wall.

Fasteners: No. 10 x 2" self-drilling, pan head stainless steel, sheet metal screw (two in bracket/post.). No. 8 x 3/4" self-drilling pan head, sheet metal screw (one in rail/bracket).

Limitations

All tests performed were to evaluate structural performance of the guardrail assembly to carry and transfer imposed loads to the supporting structure. The test specimens evaluated include the infill, rails, and rail brackets and attachment of the rail brackets to the support structure (posts). Testing of the support posts was not within the scope of the test and the posts are not a tested component and are included in the test setup only to facilitate the rail bracket anchorage.

Design Wind Pressures: The maximum allowable load is a 200 lb. concentrated load at the mid-span and ends of the top rail.

Table 1. Fastening Schedule

Connection	Quantity	Quantity
Top and Bottom Rail Bracket to Post	No. 10 x 1-1/2" stainless steel self-drilling screw (16 TPI with a 0.186" major diameter, 0.132" minor diameter, 0.367" head diameter, square drive button head).	2
Top Rail Bracket to Rail	No. 10 x 1-1/2" stainless steel self-drilling screw (16 TPI with a 0.186" major diameter, 0.132" minor diameter, 0.367" head diameter, square drive button head).	1
Baluster Connector to Top and Bottom Rail	No. 10 x 1-1/2" stainless steel self-drilling screws (16 TPI with a 0.186" major diameter, 0.132" minor diameter, 0.367" head diameter, square drive button head).	1

Note: The railing system must be installed in accordance with the manufacturer's installation instructions and this product evaluation report. Keep the manufacturer's installation instructions available on the job site during installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.