



Product Evaluation Report

PER-08036

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Progressive Engineering Inc.

Initial Listing
November, 2008

Re-Approved
June 27, 2011

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Goshen, Indiana 46528 www.p-e-i.com

Listed Products
Style 5A 8' Guardrail

Listed For
Royal Outdoor Products
P.O. Box 360
Milford, IN 46542

Approved Manufacturer
Royal Outdoor Products
401 S. Syracuse Street
Milford, IN 46542

Progressive Engineering Inc. is an accredited Testing Laboratory and Third Party Quality Control Agency. This **Product Evaluation Report** represents a product that Pei has a follow-up service agreement with. This **Product Evaluation Report** in no way implies warranty for this product or relieves **Royal Outdoor Products** of their liabilities for this product. Pei is accredited to ISO Standard 17020 and 17025. This **PER** is an official document if it is within one year of the initial or renewal date.

Listing Details

Style 5A8 Guardrails are used for exterior guards for balconies, porches, stairs and decks. The top and bottom railings are manufactured with openings spaced under 4" to accommodate the vertical balusters.

Style 5A8 Guardrails have been tested and evaluated for structural strength to meet design loads and requirements of the codes listed under Code Compliance of this PER.

Product Descriptions

Style 5A8 Guardrails are manufactured from pure virgin grade vinyl, with a UV inhibitor to prevent sun damage or color change along with impact modifiers to provide stability. The Style 5A8 Guardrail systems are designed for an installed height of 36" with a maximum length of 96" when measured from center-of-post to center-of-post. Each post is a sleeve over a 4x4 timber. Style 5A8 has a span of 92". The Style 5A8 Guardrailings are composed of Vinyl components, the top rails are strengthened with a .115" thick aluminum rail reinforcement. One crush blocks is used to reinforce the bottom rail.

General Product Usage 5A8

1. Style 5A8 Guardrails shall be installed in accordance with the Straight Bracket Railing Installation Instructions and subject to the conditions of this PER. A copy of the Straight Bracket Railing Installation Instructions shall be made easily available to the installer.
2. All framing, wood posts, beams, joists, stringers and associated connections needed to support the Style 5A8 Guardrails are outside the scope of this PER. All framing shall follow applicable codes or be designed by a licensed Engineer. Stairways shall be designed and constructed in accordance with the applicable codes.
3. For Wall Mount Systems Style 5A8 Guardrails should be installed and fastened to the wood framing using #12 by 2-1/2 inch long stainless steel screws or equal. The screws are driven through the wall mount securing the top and bottom rails in place. Two screws are then driven through the inner face of the bracket. One additional screw is then driven through the outer face of the bracket on the top rail. These screws are driven through the guardrail and the reinforcement. No screws are driven through the bracket on the bottom rail. One 2" high crush block is fastened to the bottom rail at the center of its length. Only the fasteners and fastener configurations specified for use have been evaluated for installation of the Style 5A8 Guardrail System.
4. For Post Mount Systems Style 5A8 Railings should be installed to framing with (2) steel post mounts. The steel post mounts are bolted to the deck section using 5/16" x 2-1/4" long carriage bolts. The routed post sleeves are then slid over the steel post mounts. One (1) #12 x 1-1/2" stainless steel screw is inserted in the hole found in the post plate and into the guardrail. The screw does not contact the reinforcement. One 2" high crush block is fastened to the bottom rail at the center of its length. Only the fasteners and fastener configurations specified for use have been evaluated for installation of Style 5A8 Railing Systems.

Test Documentation

Test Report FH-1448 - Per ASTM E84 Surface Burning Characteristics - Dated 2/13/2004
End Use Adjustment Factor Using PEI Test Report No.'s 2003-565 (D), 2003-565 (E) and 2003-565 (F)
PEI Test Report No. 2007-0755 - ASTM D638 Tensile Test on Xenon Arc Exposed Plastic- Dated 6/30/2007
PEI Test Report No. 2008-0837 (D) - ASTM D7032 Guardrail Test on Style IB8 Railing System with a .114" Thick Aluminum Rail Reinforcement - Dated 7/22/2008
PEI Test Report No. 2008-0837 (H) - ASTM D7032 Guardrail Post Mount Tests - Dated 9/15/2008
PEI Test Report No. 2008-0837 (I) - Guardrail Corner Connection Tests - Dated 10/09/2008

Tested to

ASTM E84-03a - Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM D638-03 - Standard Test Method for Tensile Properties of Plastic
ASTM D7032-04 - Standard Specification for Establishing Performance Ratings for Wood Plastic Composite Deck Boards and Guardrail Systems (Guards for Handrails)
ASTM G155-04 - Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

Quality Assurance Documentation

Straight Bracket Installation Instruction - From LMT Mercer Group Inc.
A Quality Control Manual for Railing Manufacturing - Dated 1/4/2010
A follow-up Listing & Inspection agreement between Pei and Royal Outdoor Products
A MSDS sheet for PVC Compounds dated 2/10/2005

Code Compliance for Style 5A8 Guardrail System

2003 International Residential Code
Section R312.1

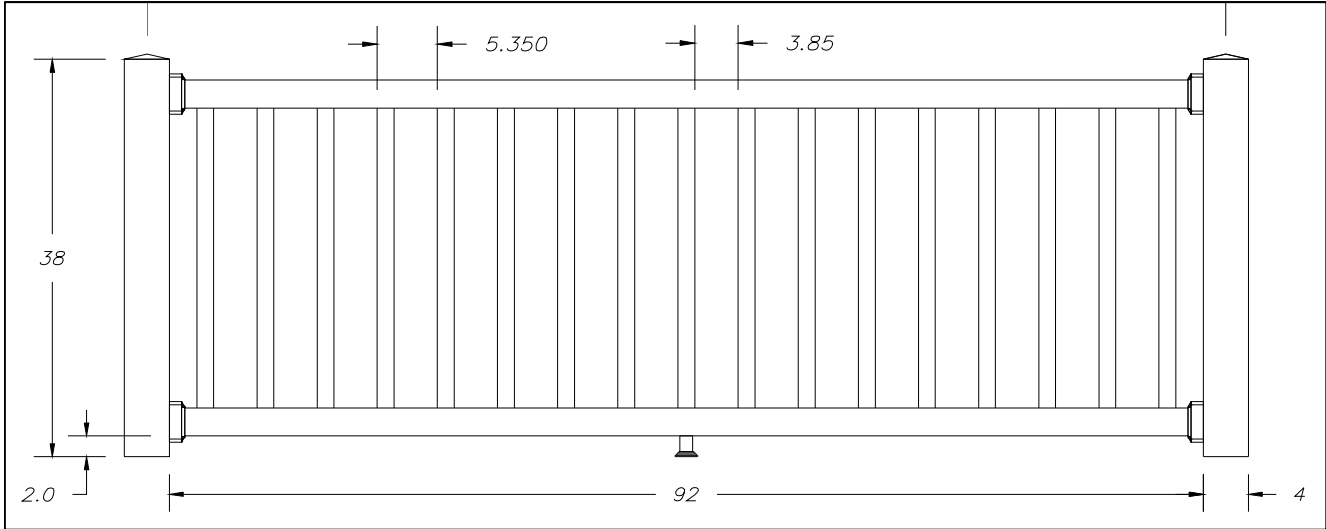
2006 International Residential Code
Section R312.1

Product Labeling

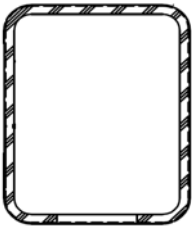
Style 5A8 Guardrail Systems must be labeled with at least the following information:

1. The Style 5A8 Guardrail name
2. Plant Identifier & Date Code
3. Manufacturer's name, Logo or website
4. This PER number & Pei's name or Logo

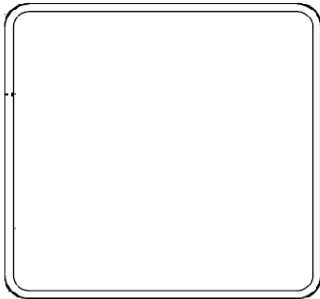
Style 5A8 Guardrail



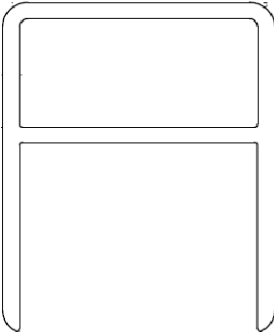
7/8" x 1-1/2" Picket



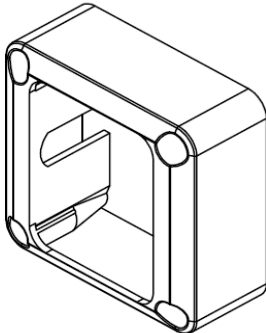
2.10" X 2.661" Rail



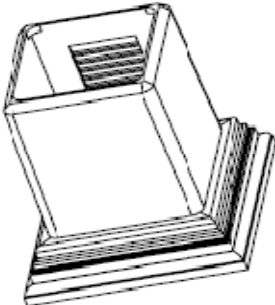
4" Square Post



Aluminum Reinforcement



Wall Mount



Foot Block

Approved Fabricators for Royal Outdoor PER-08036

The following is a list of approved Fabricators. The following Fabricators have an approved Q.C. Manual for this listed product and are inspected quarterly by PEI. Royal Outdoor Products has also approved this list of Fabricators.

Fabricator Name	Address	Website	Date Approved
USA Vinyl LLC	3830 Lacon Road, Hilliard, OH 43026	www.usavinyl.com	3/5/2009
Rafab Inc.	14544 Telegraph Road, Flat Rock, MI 48134	www.rafabinc.com	6/16/2011