# Evaluation Service®

*Pei* **Evaluation Service®** is an accredited **ISO Standard 17065** Product Certifier, accredited by the IAS. This **Product Evaluation Report** represents a product that *Pei* **ES** has Evaluated. This product has a Product Evaluation Service Agreement & Follow-up Inspection Service Agreement. This **Product Evaluation Report** in no way implies warranty for this product or relieves **Fiber Composites, LLC** of their liabilities for this product. This **PER** is an official document if it is within one year of the initial or re-approval date.

**PER-18121**

**Initial Approval**
November, 2018

**Re-Approved**

*See all Pei* **ES** *Listings at: www.p-e-i.com*

## Report Owner

**Fiber Composites, LLC**
181 Random Drive
New London, NC 28127

## Product

**Fiberon® Elements™ Aluminum Guardrail**

## Approved Manufacturing Locations

Century Aluminum Railings
9685 Agur Street
Summerland, BC

## Evaluation Report Information

Fiber Composites Contact Information:
**1-800-573-8841 or info@fiberondecking.com**

## General Details

The **Fiberon® Elements™ Aluminum Guardrail** has been tested and evaluated for structural strength to meet design loads and requirements of the building codes listed under the Code Compliance section of this **PER**. The plant location listed above has an approved Quality Control Manual to manufacture the product. Fiber Composites, LLC has a Product Evaluation Service Agreement with *Pei* **Evaluation Service** (*Pei* **ES**) and Follow-up Inspection Service Agreement with *Progressive Engineering Inc.* (*Pei*).

## Product Description

The **Fiberon® Elements™ Aluminum Guardrail** is an aluminum guardrail and stair guardrail system manufactured from 6063-T5 extruded aluminum with black powder coating. The guardrail system consists of the structural components as shown in Table 1 and is fastened together using the fasteners shown in Table 2.

## General Product Usage

1. All guardrails shall be installed in accordance with the manufacturer's installation instructions and the conditions of this **PER**. A copy of the manufacturer's installation instructions shall be made easily available to the installer.

2. All framing, wood posts, beams, joists, stringers and associated connections required to anchor the railing posts are outside the scope of this **PER**. All framing shall follow applicable codes or be designed by a licensed Engineer. Stairway handrail shall be designed and constructed in accordance with the applicable codes.

3. The guardrail system may be installed at a maximum span of 72-inches measured from the post center to post center as indicated in Figure 1. The guardrail system is rated for a maximum height of 36-inches.

4. This guardrail shall be limited to one and two family dwellings and occupancies where a minimum guard height is permitted to be 36" or lower in accordance with the 2012 IBC 1013.3, 2015 & 2018 IBC 1015.3.

## Code Compliance

| 2012 International Residential Code | 2012 International Building Code |
|---|---|
| Section R301.5 | Section 1607.8.1 |
| Section R312.1 | Section 1013 |
| **2015 International Residential Code** | **2015 International Building Code** |
| Section R301.5 | Section 1607.8.1 |
| Section R312.1 | Section 1015 |
| **2018 International Residential Code** | **2018 International Building Code** |
| Section R301.5 | Section 1607.8.1 |
| Section R312.1 | Section 1015 |

**Note:**
1. The Fiberon Elements™ Aluminum guardrail system is limited to a height of 36-inches from the walking surface to the top of the top rail. See Figure 1 for profile details.

## Tested To

**ASTM D7032 -** Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems

**Table 1 - Fiberon Elements™ Aluminum Rail Component Material Specifications**

| System Component | Fiberon Elements™ Aluminum Rail |
|---|---|
| Top Rail | Extruded 6063-T5 Aluminum Alloy |
| Top Rail Sleeve (Bracket) | Extruded 6063-T5 Aluminum Alloy |
| Top Rail Insert | Rigid PVC |
| Bottom Rail | Extruded 6063-T5 Aluminum Alloy |
| Bottom Rail Sleeve (Bracket) | Extruded 6063-T5 Aluminum Alloy |
| Bottom Rail Straight Cap | Extruded 6063-T5 Aluminum Alloy |
| Bottom Rail Insert | Rigid PVC |
| Guardrail Post | Extruded 6063-T5 Aluminum Alloy |
| Post Base Plate | 6061 Aluminum Alloy |
| Pyramid Guardrail Post Cap | Cast A838 Aluminum Alloy |
| Spacer Clip | Rigid PVC |
| Baluster | Extruded 6063-T5 Aluminum Alloy |
| Hinged Stair Sleeve (Bracket) | Cast A838 Aluminum Alloy |
| Support Leg | Extruded 6063-T5 Aluminum Alloy |

## Fiberon® Elements™ Aluminum Railing Figures

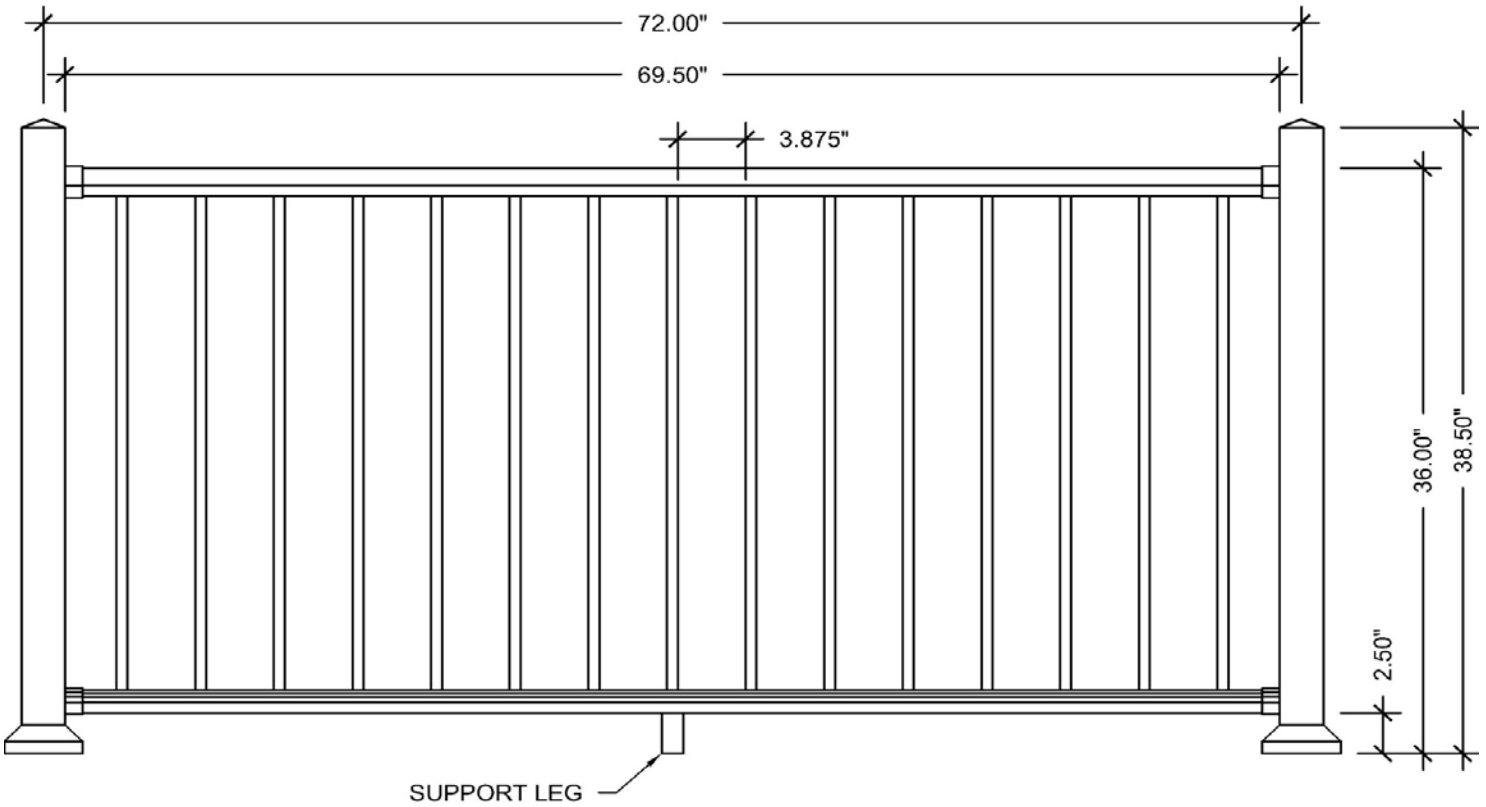


**Figure 1 - Fiberon® Elements™ Railing Assembly**

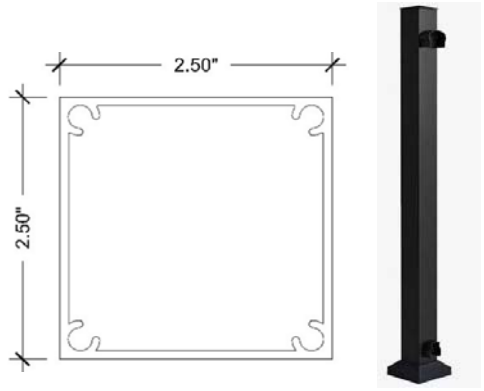


Figure 2 - Fiberon Elements End Post

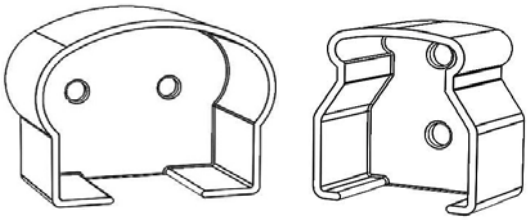

Figure 3 - Top and Bottom Rail Brackets

Figure 4 - Top and Bottom Rails

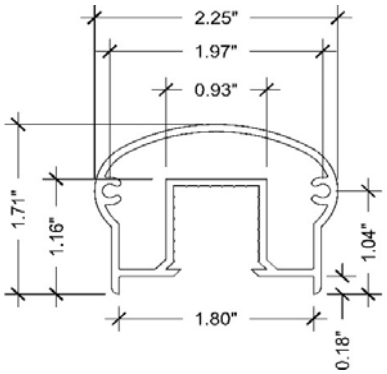


Figure 5 - Top Rail Profile

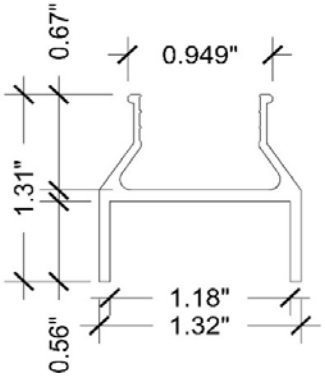


Figure 6 - Bottom Rail Profile

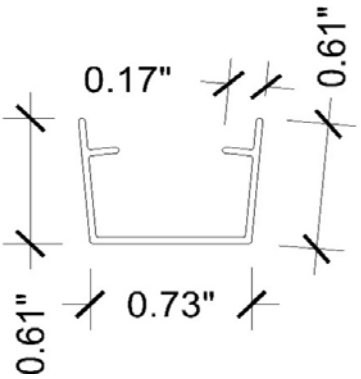


Figure 7 - Bottom Rail Insert

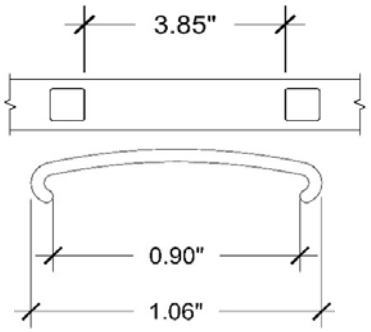


Figure 8 - Bottom Rail Cap

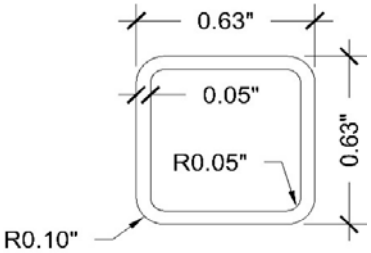


Figure 9 - Picket Profile

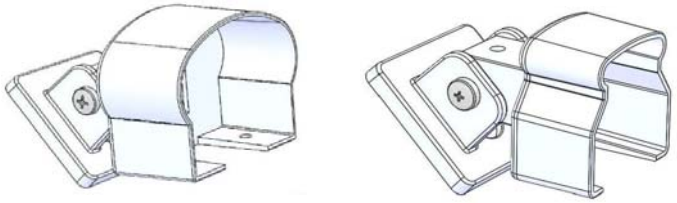

Figure 10 - Stair hinged brackets

**Table 2 - Fiberon Elements™ Aluminum Rail System Connection Fastening Requirements**

| System Connection | Approved Fastener | Quantity |
|---|---|---|
| Top Rail to Bracket | #10 x 3/4" lg self-drilling pan head screws | 2 screws |
| Top Bracket to Post | Welded **or** #10 x 3/4" lg. self-drilling pan head screws | 2 screws |
| Bottom Rail to Bracket | #10 x 3/4" lg self-drilling pan head screws | 2 screws |
| Bottom Bracket to Post | Welded **or** #10 x 3/4" lg. self-drilling pan head screws | 2 screws |
| Base plate to post | 1/4" x 2-1/2" lg. phillips head screw | 4 per plate |
| Support Leg to bottom rail | #10 x 3/4" lg self-drilling pan head screws | 1 screw |
| Stair bracket to post | Welded **or** #10 x 3/4" lg. self-drilling pan head screws | 2 screws |
| Stair bracket to top & bottom rails | #10 x 3/4" lg self-drilling pan head screws | 2 screws |

## Product Labeling

The **Fiberon® Elements™ Aluminum Rail** systems must be labeled with at least the following information:

1. The Guardrail Name
2. Date and Time Code
3. Fiber Composites, LLC Name, Logo or Website
4. This **PER** Number & *Pei* **ES** Name or Logo

## Acceptable Evaluation Marks

## Product Documentation

A Product Evaluation Service Agreement between *Pei* **Evaluation Service®** and **Fiber Composites, LLC**
A Follow-up Inspection Service Agreement between *Progressive Engineering Inc.* and **Fiber Composites, LLC**
A **Fiberon** Quality Control Manual - Dated: March 20, 2018
*Pei* test report no. 2017-6234(A) - ASTM D7032 Guardrail Test on Fiberon Elements 6' Aluminum Railing System w/ Welded Post Brackets - Dated: 5/4/2018
*Pei* test report no. 2017-6234(B) - ASTM D7032 Guardrail Test on Fiberon Elements 6' Aluminum Railing System w/ Fastened Post Brackets - Dated: 5/7/2018 - Revised: 9/28/2018
*Pei* test report no. 2017-6234(C) - ASTM D7032 Guardrail Test on Fiberon Elements 6' Aluminum Railing System w/ Swivel Brackets - Dated: 5/9/2018
*Pei* test report no. 2017-6234(D) - ASTM D7032 Guardrail Post Mount Test on Fiberon Elements Aluminum Post - Dated: 5/2/2018