



# Code Compliance Research Report CCRR-0233

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**DIVISION: 05 50 00 – Metal Fabrications**  
**Section: 05 52 00 - Metal Railings**

**Trex Company, Inc.**  
**160 Exeter Drive**  
**Winchester, VA 22603**  
**(540) 542-6300**

[www.trex.com](http://www.trex.com)

## REPORT SUBJECT:

*Trex® Aluminum Surface Mount Post*

## 1.0 SCOPE OF EVALUATION

This research report addresses compliance with the following Codes:

2012 International Residential Code (IRC)

*Trex® Aluminum Surface Mount Post* has been evaluated for the following properties:

Structural Performance

## 2.0 USES

**2.1.** The *Trex® Aluminum Surface Mount Post* supports guards or guardrails under the definitions of the referenced codes. It is intended for use at or near the open sides of elevated walking areas of buildings and walkways as required by the codes

## 3.0 DESCRIPTION

**3.1.** The *Trex® Aluminum Surface Mount Post* is designed for installation on the surface of the supporting structure. Rail components of the guardrail assembly can be attached directly to the structural aluminum post or to aluminum spacers designed to accommodate guardrail systems that include a nominal 4x4 post sleeve.

**3.2.** Materials and Processes - The *Trex® Aluminum Surface Mount Post* is an assemblage of plate and extruded aluminum materials.

**3.3.** Components – *Trex® Aluminum Surface Mount Post* is a 2-1/2 inch square by 0.125 inch wall of aluminum tubular extrusion available as a 36 or 42 inch post length. The extrusion is 0.25 inch continuous fillet welded to a 4 inch square by 1/2 inch thick aluminum base plate. The base plate has four 0.4 inch diameter holes for anchors located at the corners and one 0.40 in diameter center hole. See Figure 1.

**3.3.1.** For guardrail systems that incorporate a nominal 4x4 post sleeve, the *Trex® Aluminum Surface Mount Post* is fitted with two 3.75 inch square by 7 inch long by .07 inch wall post spacers. Spacers are an aluminum extrusion with internal longitudinal ribs. See Figures 1 and 2.

## 4.0 PERFORMANCE CHARACTERISTICS

**4.1.** The surface mount post described in this report has demonstrated the capacity to resist the design loadings specified in Section R301 of the IRC when tested in accordance with ICC-ES AC273.

## 5.0 INSTALLATION

The *Trex® Aluminum Surface Mount Post* must be installed in accordance with the manufacturer's published installation instructions, the applicable Code and this Research Report. The manufacturer's published installation instructions and this Research Report must be strictly adhered to, and a copy of the instructions must be available on the jobsite during installation.

**5.1.** Four shim plates are utilized under the base of the aluminum post mount. The shim plates line the perimeter of the post base. Shim plates are 3.5 inches long by 0.75 inches wide by 0.01 inch thick stainless steel plates. See Figure 3.

**5.2.** The *Trex® Aluminum Surface Mount Post* may be mounted to a wood deck in accordance with the details in Figure 3.

**5.2.1.** A minimum of four 3/8 inch diameter, 6 inch long anchor bolts must be used and located in the four pre-drilled holes in the structural post base plate.

**5.2.2.** Pressure-treated 2x8 Southern Yellow Pine (specific gravity 0.50 or better) boards are used as blocking under the post location and are fastened between the joists with #10 x 3 inch wood screws in accordance with the National Design Specification for Wood Construction (ANSI/AWC NDS-2012). See Figure 3 for spacing and quantities.

**5.2.3.** A 3/8" thick, 4.5 inch square aluminum back plate is installed on the underside of the wood blocking as illustrated in Figure 4. This aluminum plate shall be factory painted or given a heavy coat of alkali-resistant bituminous paint to provide separation between the aluminum and any wood, fiberboard, or other porous material that absorbs water.

**5.2.4.** Stainless steel shim plates are used to prevent direct contact between the structural post base plate and supporting structure.

**5.3.** Top and bottom rails of the guardrail assembly are attached directly to the structural aluminum post or to the aluminum spacers when the guardrail system includes a nominal 4x4 post sleeve. Attachment is made with brackets and mechanical fasteners which are evaluated separately with the guardrail system.

**5.3.1.** For guardrail systems that incorporate a nominal 4x4 post sleeve, *Trex® Aluminum Surface Mount Post* spacers are attached to the post using two 10"x1" square flat stainless screws. See Figure 2.

## 6.0 SUPPORTING EVIDENCE

**6.1.** Drawings and installation instructions submitted by Trex Company, Inc.

**6.2.** Reports of testing demonstrating compliance with the performance requirements of ICC-ES AC273, Acceptance Criteria for Handrails and Guards, revised Jan. 2012.

**6.3.** A quality control manual that is in accordance with the ICC-ES AC10, Acceptance Criteria for Quality Documentation, dated June 2014.

## 7.0 CONDITION OF USE

The *Trex® Aluminum Surface Mount Post* described in this Research Report complies with, or is a suitable alternative to, what is specified in those Codes listed in Sections 1.0 and 2.0 of this report, subject to the following conditions:

**7.1.** Compatibility of fasteners and other metallic components with the supporting structure, including chemically treated wood, is outside the scope of this report.

**7.1.1.** The *Trex® Aluminum Surface Mount Post* is qualified for use with guardrail systems that comply with ICC-ES Acceptance Criteria AC174 *Acceptance Criteria for Deck Board Span Ratings and Guardrail System* or AC273 *Acceptance Criteria for Handrails and Guards*. The guardrail assembly including post sleeves and attachment to the *Trex® Aluminum Surface Mount Post* must be tested and evaluated separately.

**7.1.2.** Self-threading screws used for attachment to the *Trex® Aluminum Surface Mount Post* must be 300 series stainless steel or aluminum.

**7.2.** The *Trex® Aluminum Surface Mount Post* is manufactured in accordance with an approved quality control system that includes independent third party inspections by NTA, Inc. (IAS AA-682).

## 8.0 IDENTIFICATION

The *Trex® Aluminum Surface Mount Post* described in this Research Report are identified by a marking bearing the report holder's name, Trex Company, the Intertek Mark and the Code Compliance Research Report number (CCRR-0233) as shown below and the following statement: "For Use in One- and Two-Family Dwellings Only."

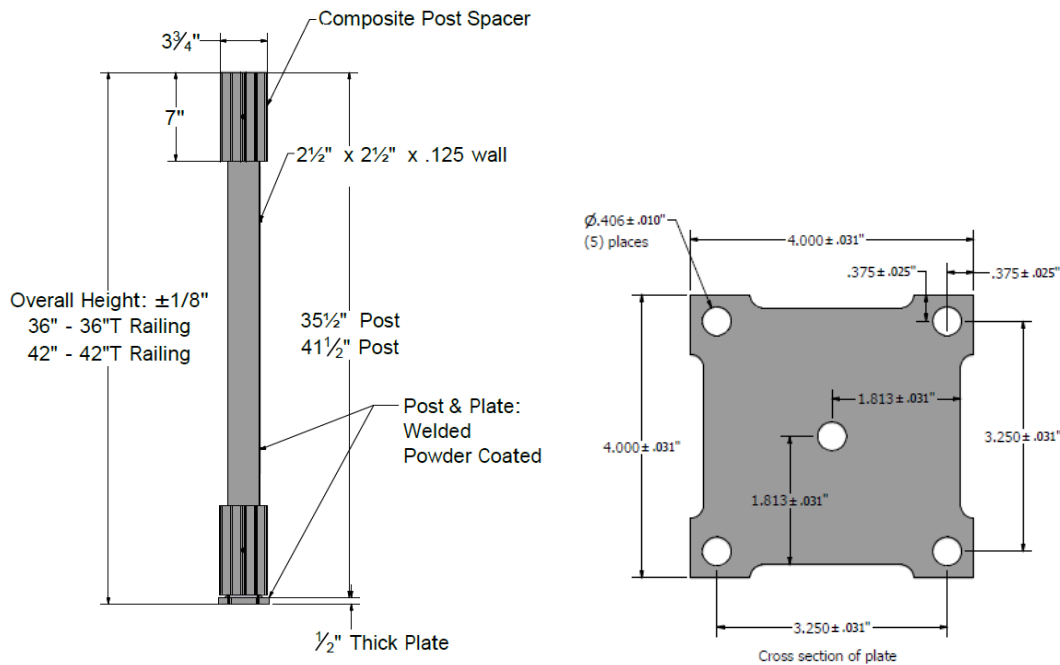


## 9.0 CODE COMPLIANCE RESEARCH REPORT

**9.1.** Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

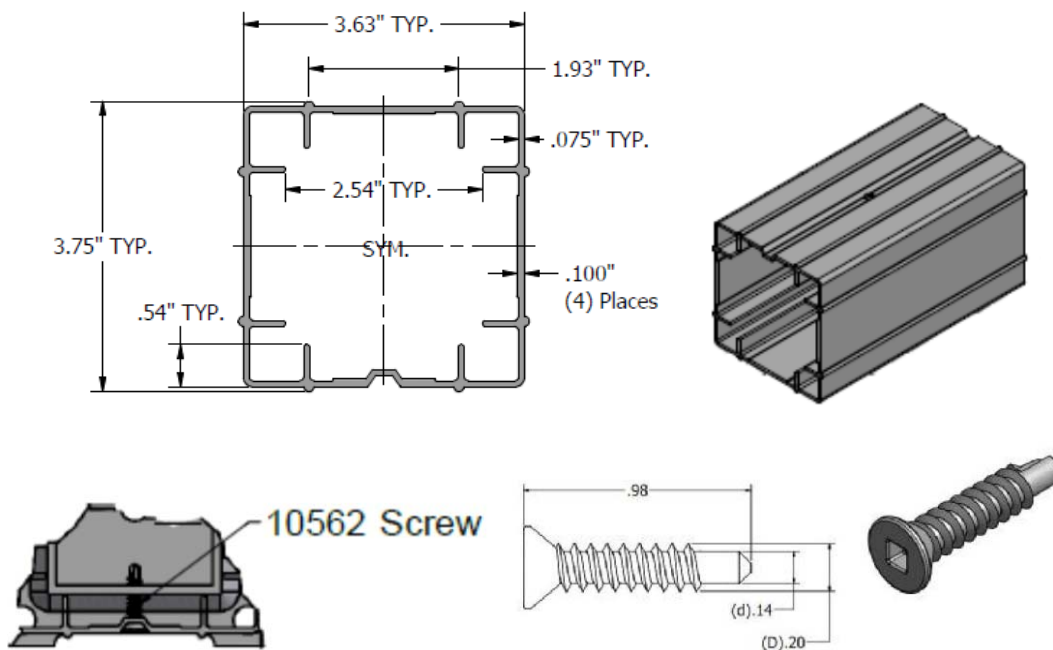
**9.2.** Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Architectural Testing.

**9.3.** Reference to the Intertek website address: [whdirectory.intertek.com](http://whdirectory.intertek.com) is recommended to ascertain the current version and status of this report.

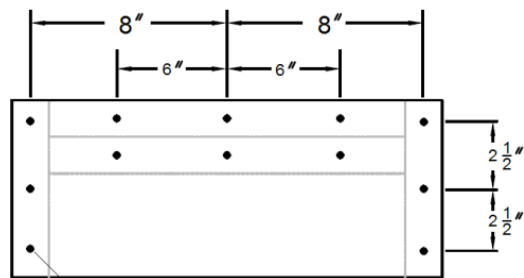
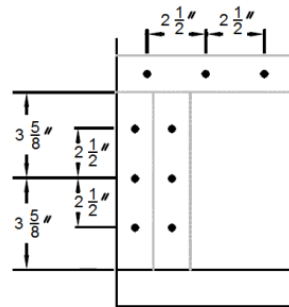
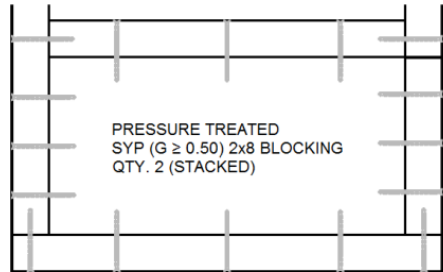
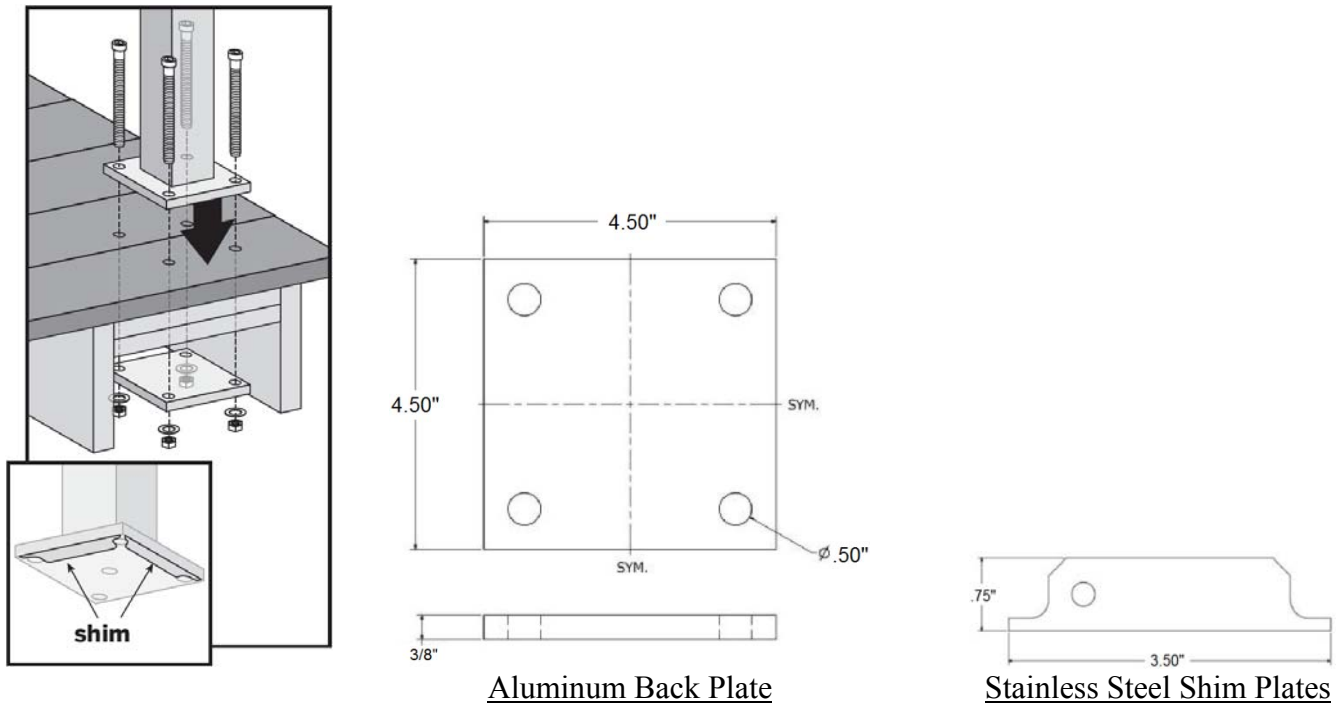


**Figure 1 - Trex® Aluminum Surface Mount Post**  
(Shown with optional post sleeve spacer)

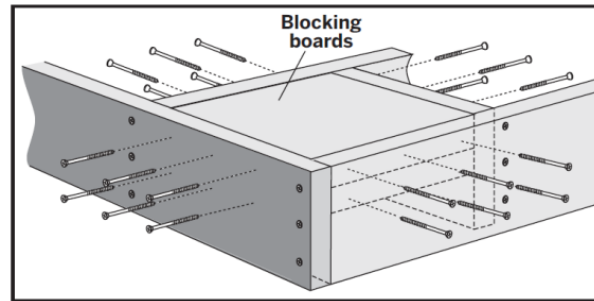
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**Figure 2 – Trex® Aluminum Surface Mount Post Spacer**



#10 x 3" WOOD SCREWS



Wood blocking detail

**Figure 3 – Trex® Aluminum Surface Mount Post Installation on Wood Deck**