



Subject to Renewal: 02/25/2015
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Issued: 02/25/2014
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1. Subject

Fe²⁶ Traditional Railing

Fe²⁶ PLUS Traditional Railing

2. Research Scope

2.1 Building Codes:

2012 International Building Code (IBC)

2012 International Residential Code (IRC)

2.2 Properties:

Structural Performance

3. Description

3.1 General – The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* as described in this report are guardrails (guards) under the definitions of the referenced codes and are intended for use on elevated walking areas in buildings and walkways as required by the referenced codes.

3.2 Guard Assemblies – Railing systems are provided as level guards for level walking areas such as decks, balconies, and porches. See Table 1 for qualified guardrail dimensions.

3.3 Materials and Processes – The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* systems are pre-assembled steel railing systems consisting of pre-galvanized formed steel rails, pickets, and posts (see Figure 1). Systems consist of the following components:

3.3.1 The top and bottom rails of the *Fe²⁶ Traditional Railing* and the *Fe²⁶ PLUS Traditional Railing* are 1.00 inch and 1.25 inch square steel tubes, respectively. See Figure 2.

3.3.2 The balusters of the *Fe²⁶ Traditional Railing* and the *Fe²⁶ PLUS Traditional Railing* are 0.64 inch and 0.76 inch square steel tubes, respectively. See Figure 5. Balusters are permanently welded to top and bottom rails.

3.3.3 Top and bottom rails are connected to posts using cast steel mounting brackets. See Figure 3 and Figure 4.

3.3.4 The railings are attached to either conventional wood supports or steel supports. See Table 1 for configurations and Table 2 for fastening schedule.

4. Performance Characteristics

4.1 The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* systems described in this report have demonstrated the capacity to resist the design loads specified in Chapter 16 of the IBC, as well as Section R301 of the IRC when tested in accordance with ICC-ES AC273. The *Fe²⁶ Traditional Railing* is limited to use in One- and Two-Family Dwellings.

5. Installation

Installation shall be in accordance with the manufacturer's installation instructions and this report. Where differences occur between this report and the manufacturer's installation instructions, this report shall govern.

5.1 The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* are pre-assembled (welded) steel railing systems.

5.2 Top and bottom rails are secured to steel supports or conventional 4x4 wood posts with metal brackets and stainless steel screws. The wood in the supports and supporting structure shall have a specific gravity of 0.50 or greater (Southern Yellow Pine or better) and a minimum thickness to allow full penetration of the mounting screws. The steel support shall have a minimum wall thickness of 2.5 mm. Rail attachment shall be in accordance with Table 2.

6. Supporting Evidence

6.1 Manufacturer's drawings and installation instructions.

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

6.3 Quality control manual demonstrating compliance with ICC-ES AC10, Acceptance Criteria for Quality Documentation, dated January 2014.

7. Conditions of Use

The guardrail assemblies identified in this report are deemed to comply with the intent of the provisions of the referenced building codes subject to the following conditions:

7.1 *Fe²⁶ Traditional Railing* guards and *Fe²⁶ PLUS Traditional Railing* guards recognized in this report are regulated by the IBC and are limited to exterior use in all construction types where wood is permitted in accordance with Section 1406.3 of the IBC and in One- and Two-Family Dwellings regulated by the IRC. *Fe²⁶ PLUS Traditional Railing* guards recognized in this report are further limited to use in Type V-B (IBC) construction and structures constructed in accordance with the IRC. See Table 1.

7.2 Steel guardrail supports and conventional wood guardrail supports, including 4x4 posts, and framing are not within the scope of this report and are subject to evaluation and approval by the building official. Supports must satisfy the design load requirements specified in Chapter 16 of the IBC. Supports and framing must provide suitable material for anchorage of the rail brackets and supports, respectively. Where required by the building official, engineering calculations and details shall be provided.

7.3 Any component or configuration not identified in this report has not been evaluated for performance and/or compliance to the referenced codes. Identification of such components with the CCRR program mark and/or number is prohibited.

7.4 Only those types of fasteners and fastening methods described in this report have been evaluated for the installation of the railing systems described herein; other methods of attachment are outside the scope of this report.

7.5 Compatibility of fasteners and other installation hardware with the supporting construction, including treated wood, is not within the scope of this report.

7.6 The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* systems are manufactured in accordance with the manufacturer's approved quality control system with inspections by Architectural Testing (IAS AA-676).

8. Identification

The *Fe²⁶ Traditional Railing* and *Fe²⁶ PLUS Traditional Railing* systems produced in accordance with this report shall be identified with labeling on the individual components or the packaging that includes the following information:

8.1 The phrase: "For Use in One- and Two-Family Dwellings Only" for the applicable guardrail systems. See Table 1.

8.2 The Architectural Testing Code Compliance Research Report mark and number (CCRR-0192).

9. Code Compliance Research Report Use

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 Architectural Testing internet web site address at www.ati-es.com is recommended to ascertain the current version and status of this report.



Table 1 – Qualified Level Guardrail Systems

Railing System	Maximum Guardrail Dimensions ⁽¹⁾	Railing Bracket	Substrate for Railing Bracket	Code Occupancy Classification
<i>Fe²⁶ Traditional Railing</i>	93-1/2" x 36" ⁽²⁾ 93-1/2" x 42"	Collar Bracket	Steel Support	IBC: Type V-B IRC: One- and Two-Family Dwellings
		Universal Bracket	Steel Support -or- Conventional 4x4 wood post	
<i>Fe²⁶ PLUS Traditional Railing</i>	93-1/2" x 36" ⁽²⁾ 93-1/2" x 42"	Collar Bracket	Conventional 4x4 wood post	IBC: All Use Groups IRC: One- and Two-Family Dwellings

⁽¹⁾ Level rail lengths are maximum clear length between supports. Railing height is the minimum installed height from walking surface to top of top rail.

⁽²⁾ The use of these products shall be limited to exterior use as a guard system for balconies and porches for one- and two-family dwellings of Type V-B (IBC) construction and structures constructed in accordance with the IRC.

**Table 2 – Fastening Schedule**

Railing System	Railing Bracket	Connection	Fastener	Qty.
<i>Fe²⁶ Traditional Railing</i>	Collar Bracket	Rail Bracket to Steel Support ⁽¹⁾	1/4 inch x 1-1/4 inch stainless steel, self-drilling, flat-head sheet metal screw	2
		Rail Bracket to Rail ^{(1) (2)}	1/4 inch x 1-1/4 inch stainless steel, self-drilling, flat-head sheet metal screw	1
	Universal Bracket	Rail Bracket to Steel Support ⁽¹⁾	1/4 inch x 1 inch stainless steel, self-drilling, flat-head sheet metal screw	2
		Rail Bracket to Conventional 4x4 Wood Post	#12-10 x 2-1/2 inch stainless steel, flat-head wood screw	2
		Rail Bracket to Rail ⁽²⁾	1/4 inch x 1 inch stainless steel, self-drilling, flat-head sheet metal screw	1
<i>Fe²⁶ PLUS Traditional Railing</i>	Collar Bracket	Rail Bracket to Conventional 4x4 Wood Post	#9-9 x 2-1/2 inch stainless steel, flat-head wood screw	2
		Rail Bracket to Rail ⁽²⁾	1/4 inch x 1-1/4 inch stainless steel, self-drilling, flat-head sheet metal screw	1

⁽¹⁾ Pre-drill a 7/32 inch diameter hole⁽²⁾ Located on the interior side of the deck (i.e. facing the walking surface) - see Figure 3

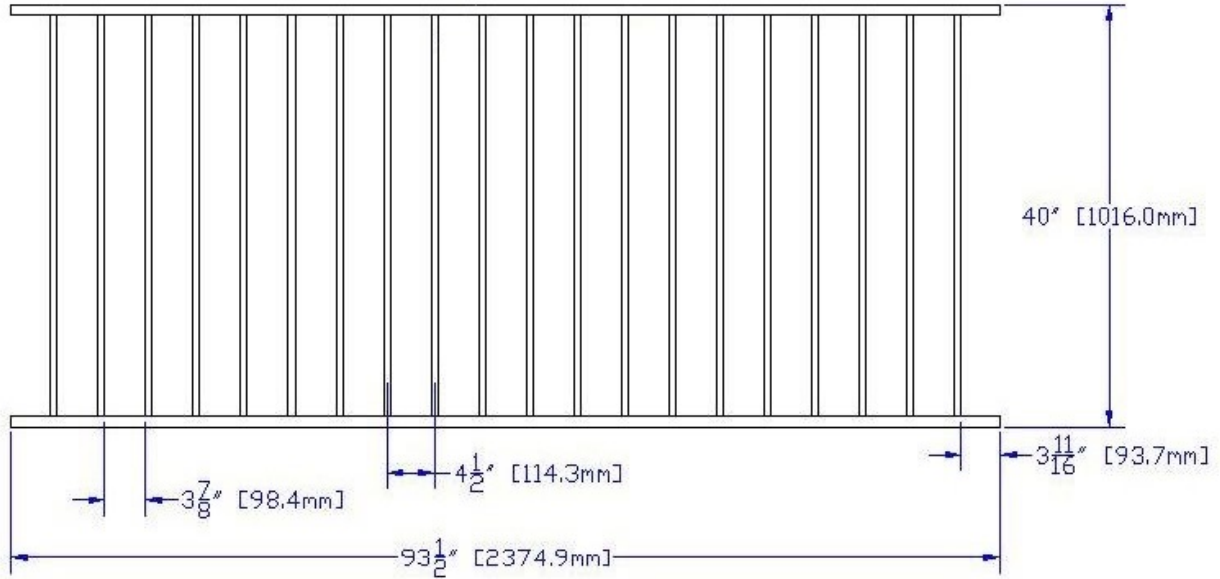
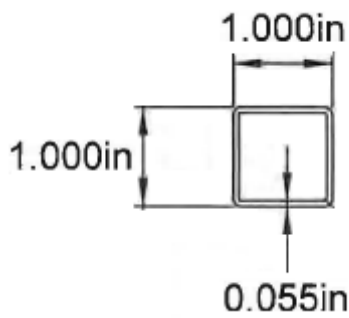
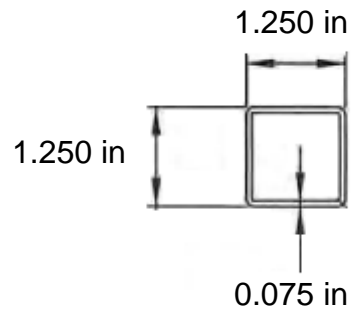


Figure 1
42" Railing Assembly



Fe²⁶ Traditional Railing Rail



Fe²⁶ PLUS Traditional Railing Rail

Figure 2
Railing Profiles

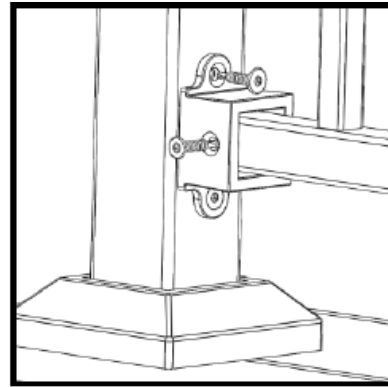
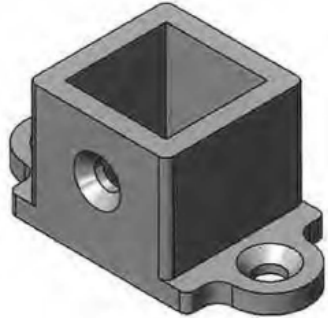


Figure 3
"Collar Bracket" Rail Bracket and Installation Detail

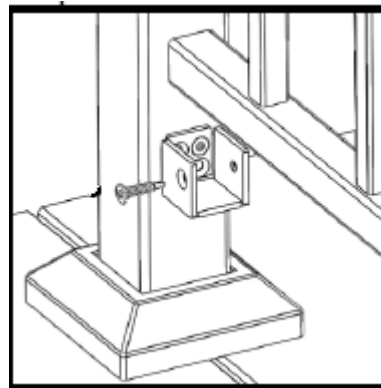
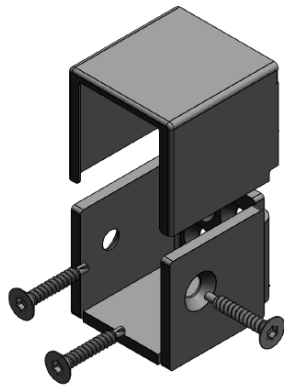
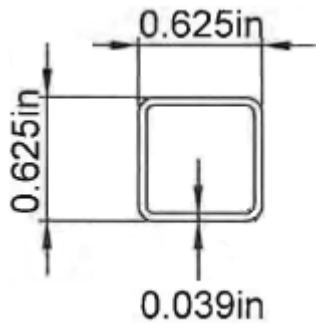
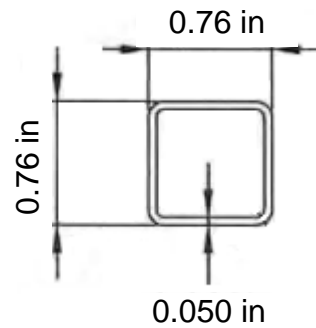


Figure 4
"Universal Bracket" Rail Bracket and Installation Detail



Fe²⁶ Traditional Railing Baluster



Fe²⁶ PLUS Traditional Railing Baluster

Figure 5
Baluster Profiles