Code Compliance Research Report
CCRR-0246

Issued: 11-02-2016
Renewal Due: 11-02-2018
Revised: 10-27-2017

DIVISION: 06 00 00 – WOOD, PLASTICS AND COMPOSITES
Section: 06 63 00 – Plastic Railings

American Choice Railing and Fencing LLC
5005 Belmar Blvd. Suite A-1
Wall Township, NJ 07727
732-793-1765
www.AmericanChoiceRailings.com

REPORT SUBJECT:
Vinyl T-Rail System

1.0 SCOPE OF EVALUATION

1.1 Building Codes:

2015, 2012 International Building Code (IBC)

2015, 2012 International Residential Code (IRC)

1.2 Properties

Structural Performance

Durability

Surface Burning

Termite Resistance

Decay Resistance.

2.0 USES

2.1. The *Vinyl T-Rail System* is a guardrail 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.

2.2. Railing systems are provided as a level guardrail for level walking areas such as decks, balconies and porches. Level guards with rai lengths up to 10 feet (120-inches) in length and a maximum installed height of 42-inches. A support block is required for assemblies of 10 feet, see Figure 8. See Table 1.

3.0 DESCRIPTION

3.1. Materials and Processes – The *Vinyl T-Rail System* is an assemblage of extruded and molded components utilizing Poly Vinyl Chloride (PVC) material and aluminum reinforcements. See Figure 1 for assembly. The system consists of the following components:

3.1.1. The PVC top rail, T-Rail, are extruded PVC at 0.09 inches thick with a profile having overall dimensions of 3.5“ wide by 3.5” tall. See Figure 2.

3.1.2. The PVC Baluster in the system are extruded 0.07” thick PVC square profile having overall dimensions of 1.5” wide by 1.5” tall. See Figure 3.

3.1.3. The PVC Bottom rail are extruded .095” thick PVC rectangular shape profile having overall dimensions of 2.0“ wide by 3.5” tall. See Figure 4.

3.1.4. Full length extruded aluminum 6063-T6 inserts provide reinforcement for both the top and bottom rails of the referenced railing system. See Figure 5.

3.1.5. Top and bottom rails are attached to the conventional 4x4 wood posts. The top and bottom attachment is made utilizing a straight PVC molded bracket socket which is secured to the post and rail. See Figure 6.

3.1.6. A non-structural PVC post sleeve can be provided as a cladding over conventional 4x4 wood posts. See Figure 7.

4.0 PERFORMANCE CHARACTERISTICS

4.1. The American Choice LLC Guardrail System described in this report have demonstrated the capacity to resist the design loadings specified in Chapter 16 of the IBC, and Section R301 of the IRC, when tested in accordance with ICC-ES AC174.

4.2. Structural Performance has been demonstrated for a temperature range from -20° F to 125° F.

4.3. Materials used are deemed equivalent to preservative treated or naturally durable wood for resistance to weathering effects, decay and attack from termites

4.4. Materials used have a flame spread index not exceeding 200 when tested in accordance with ASTM E 84.

5.0 INSTALLATION

Vinyl T-Rail 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. Guardrails are attached to supports with PVC brackets that use self-drilling screws. See Table 2 for the fastening schedule and Figure 5 for bracket detail.

5.2. Railing systems may be attached to conventional wood posts or other suitable wood support structures. Wood in 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 bracket mounting screws. Conventional wood posts or other wood supports are not within the scope of this report.

6.0 SUPPORTING EVIDENCE

6.1. Manufacturer's drawings and installation instructions.

6.2. Reports of testing in accordance with ICC-ES AC174, Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails), Revised December 2014.

6.3. Reports of testing and engineering analysis demonstrating compliance with the performance requirements of ASTM D 7032-10 [08], Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Railing and Guardrail Systems (Guards or Handrails).

6.4. Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

7.0 CONDITION OF USE

The Vinyl T-Rail System 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. . Guardrail systems recognized in this report may be used in One- and Two-Family Dwellings regulated by the IRC and all construction types regulated by the IBC in accordance with IBC Section 1406.3, Exception 2. Guardrails less than 42 inches high are limited to use in One- and Two-Family Dwellings (IRC). See Table 1 for additional restrictions based upon Use and Occupancy classification.

7.2. Conventional wood guardrails 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. Conventional wood posts and structural support framing for post installations must satisfy the design load requirements specified in the Chapter 16 of the building code and must provide suitable material for anchorage. Where required by the building official, engineering calculations and details shall be provided.

7.3. Installation must comply with this Research Report, the manufacturer's published installation instructions and the applicable Code. In the event of a conflict between the manufacturer's instructions and this report, this report governs.

7.4. Only those types of fasteners and fastening methods described in this report have been evaluated for installation of the Vinyl T-Rail system; other methods of attachment are outside the scope of this report.

7.5. Compatibility of fasteners, brackets and other metallic components with the supporting structure, including chemically treated wood, is not within the scope of this report.

7.6. All products are manufactured by American Choice Railings and Fencing LLC.

8.0 IDENTIFICATION

The *Vinyl T-Rail* system described in this Research Report are identified by a marking bearing the report holder's name (American Choice Railings and Fencing LLC, the Intertek Mark, and the Code Compliance

Research Report number (CCRR-0246) and the following statement: "See CCRR-0246 at https://whdirectory.intertek.com for uses and performance levels."

CODE COMPLIANCE
Intertek
CCRR-0246

9.0 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 Intertek website address: whdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – PROPERTIES EVALUATED

Guardrail System	Maximum Guardrail Dimensions [1]	Guardrail Type	Baluster	Code Occupancy Classification
Vinyl T-Rail	8 ft. (96 in.) by 42 in.	Level / In-Line Application	1 ½" x 1 ½" Square PVC	IBC one- and two-family dwellings only and, IRC
	10 ft. (120 in.) by 36 in. (Support Block required)	Level / In-Line Application		IRC Only

TABLE 2 – FASTENING SCHEDULE

Connection	Fastener
Top Rail Bracket to Post	Six #10-10 x 1-1/2" (0.117 in minor diameter) self-drilling, Phillips drive, pan-head, coated carbon steel screws
Bottom Rail Bracket to Post	Four #10-10 x 1-1/2" (0.117 in minor diameter) self-drilling, Phillips drive, pan-head, coated carbon steel screws
Top/Bottom Rail Bracket to Rail	Two #10-12 x 1" (0.137 in minor diameter) self-drilling, Phillips drive, pan-head, coated carbon steel screws
Support Block to Deck Surface	One #10-12 x 3/4" (0.129 in minor diameter) Type A point, Phillips drive, pan-head, stainless steel screw
Support Block to Support Block (Height Adjustment)	
Support Block to Bottom Rail	
Baluster to Top/Bottom Rail	Slip fit - No Mechanical Connection

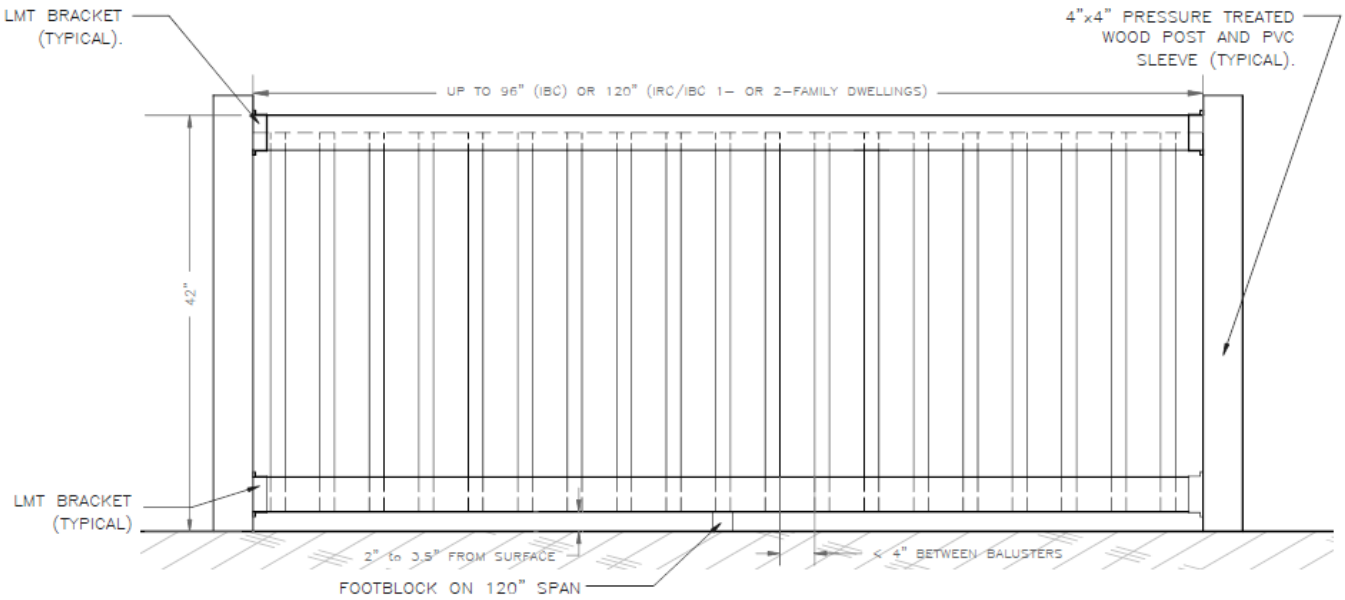


FIGURE 1 – Rail Assembly

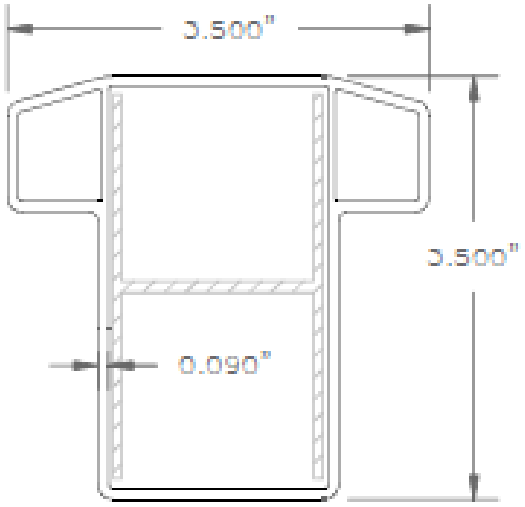


FIGURE 2 -Top Rail Profile

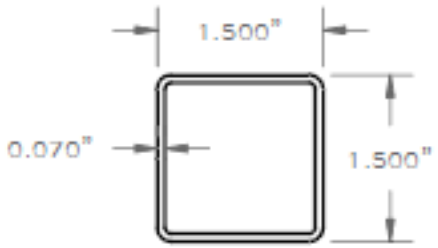


FIGURE 3 – Baluster

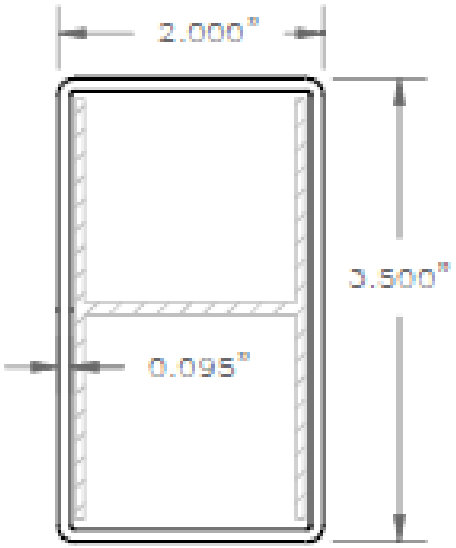


FIGURE 4 - Bottom Rail Profile

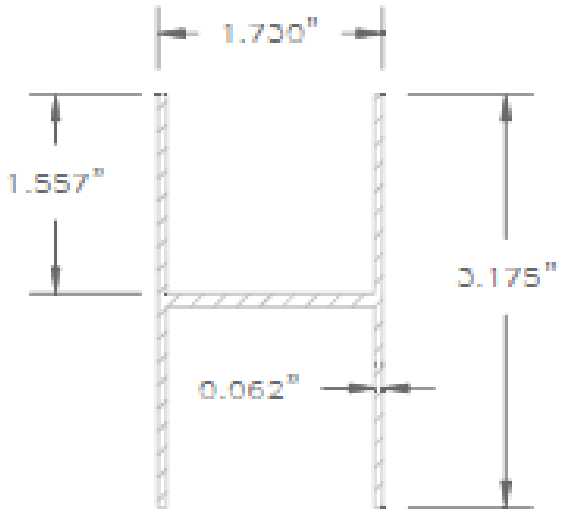
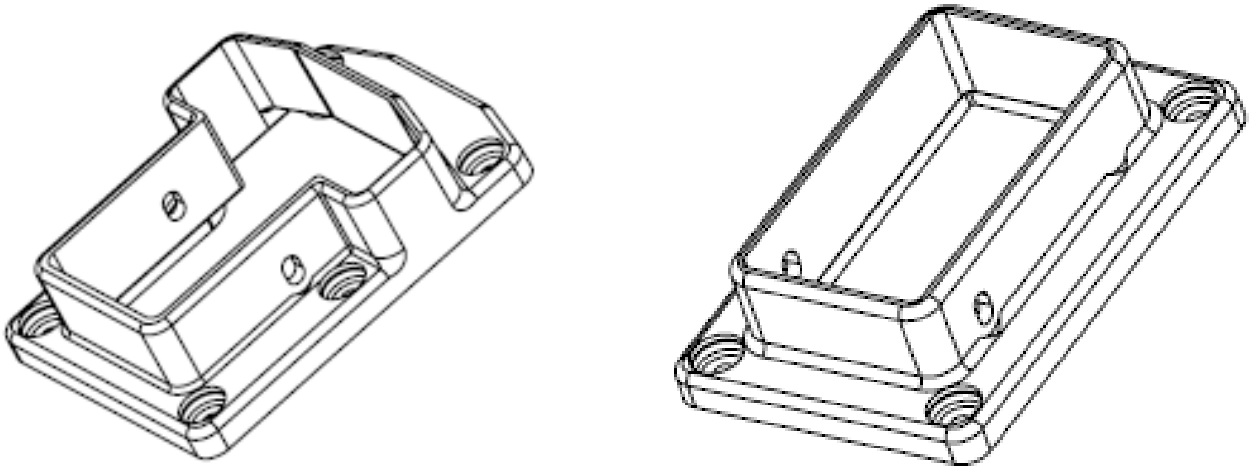


FIGURE 5 – Aluminum Insert



Top Rail Socket **Bottom Rail Socket**

FIGURE 6 – Rail to Post Connections

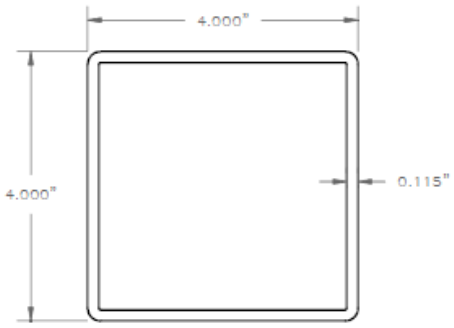


FIGURE 7 – Post Sleeve

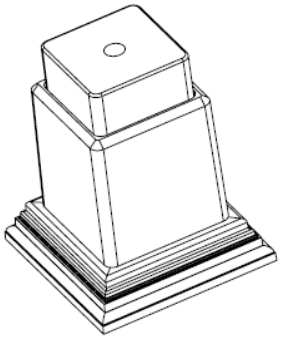


FIGURE 8 –Support Block