RDI Transform Guardrail Systems

Initial Acceptance: February 22, 2018

Expiration: February 26, 2028

Revision: February 16, 2026

Version: 3.0

TYPE OF ACCEPTANCE

Product Material – Wood and Plastics
CSI Specification Division: 06 50 00 (Structural Plastic) and 06 63 00 (Plastic Railing)

MANUFACTURER IDENTIFICATION:

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EVALUATION REPORT SUBJECT:

***Transform*™** Guardrail Systems for Exterior Applications
Installation on construction complying with the International Residential Code® (IRC®) or with the International Building Code® (IBC®), including IBC exceptions in Section 1015.3 of the IBC.

DESCRIPTION OF BUILDING COMPONENTS:

RDI guardrail system is identified by the name – ***Transform (Guardrail) System***. The guardrail system is for use in areas as referenced in the Applicable Codes. The guardrail system provides a protective barrier for walking areas, balconies, porches, stairs and ramps. The guardrail system is manufactured by the co-extrusion process, assembled with molded components and is produced in white and other colors.

1. Guardrail – *Transform*

(a) The ***Transform*** guardrail system consists of a top rail, bottom rail, balusters, and aluminum reinforcing inserts. The top rail, bottom rail, and balusters are manufactured with PVC (**Resalite™** Composite) material by the co-extrusion process except for the aluminum baluster and the molded brackets.

(b) The ***Transform*** guardrail system has a top rail that comes in three styles: Aspire, Presence and Emerge. The top rails have a highly-contoured configuration, are hollow in the center, have rounded edges and have an acrylic cap stock on the rails. The three top rails may have reinforcing stiffener inserts depending on the guardrail span. When a stiffener is required there is one stiffener design for both the Aspire and Presences top rails and one stiffener design for the Emerge top rail. The top rails have a U-shape profile sub-rail and are pre-routed for baluster connectors. There is a graspable top rail design that is only used for stair applications (see "2. Stairs" below). See Table 1 in this Report for drawings and dimensions of top rails, stiffeners and sub rail. See Table 2 for top rail stiffener installation requirements.

(c) The ***Transform*** guardrail system has a bottom rail that has a highly-contoured configuration with an attaching sub-rail, has rounded edges and is pre-routed for balusters. The bottom rail sub-rail has a U-shape profile. See Table1 in this Report for drawings and dimensions of the bottom rail and sub-rail.

(d) The ***Transform*** guardrail system has two optional baluster designs as follows: square and round. The square baluster

is manufactured with PVC material, is square in shape has rounded edges and is hollow in the center. The round baluster is circular in shape, is hollow in the center and is an extruded 6063-T52 Aluminum material. See Table 1 in this Report for baluster drawings and dimensions.

(e) The ***Transform*** guardrail system connections for the top and bottom rail to the supports are PVC molded brackets. The brackets are secured to the posts with steel screws (stainless, corrosion-resistant**,** or galvanized) suitable for use in preservative-treated wood. See Table 1 of this Report for drawing of the bracket and number of fasteners required.

(f) The ***Transform*** guardrail system connections for the balusters to the top and bottom rail are as follows: a PVC adaptor for the square shape baluster and a die-cast Aluminum adaptor that is circular in shape for the Aluminum baluster. See Table 1 of this Report for a drawing of the adaptors.

(g) See manufacturer's published installation instructions Transform Level Rail & Level Angle, Web Rev 6.21 for additional installation details.

2. Stairs – *Transform*

(a) The ***Transform*** guardrail system can be used as stair guards. The top rail has a highly-contoured configuration, hollow in the center, has rounded edges and has an acrylic cap stock on the rail. The top rail has an attached U-shape profile sub-rail that is pre-routed for baluster connectors. See Tables 1, 2 and 3 in this Report for the stair top and bottom rail, for sub-rail, for stair maximum length between posts, bottom rail supports, top and bottom rail connection brackets and fasteners required.

(b) When the guardrail is used with stairs, the guardrail must be installed in accordance with the manufacturer's published installation instructions, and information located in Tables 1, 2 and 3 in this Report. When the manufacturer's published installation instructions differ from this Report, this Report governs. Additionally, in order to comply with the IBC or IRC graspability requirements, a separate handrail complying with IBC Section 1014.3 or IRC Section R311.7.8.3 must be provided. Specific details regarding the construction installation and attachment to the stair guardrail and/or posts have not been evaluated and are outside the scope of this Report. Specific details when required must be furnished to the authority having jurisdiction.

(c) See manufacturer's published installation instructions Transform Stair Rail, Web Rev 6.21 for additional installation details.

3. Posts – *Transform*

(a) The ***Transform*** guardrail system has post sleeves and post sleeve spacer. The post sleeves are manufactured with PVC material, are square in shape, hollow in the center and have rounded edges. The post sleeves are non-structural and can be installed over conventional wood posts. The post sleeve spacer is manufactured with HDPE material, is square in shape, hollow in the center and has rounded edges. Specific details regarding the construction installation for the post sleeves, post sleeve spacer and/or posts have not been evaluated and are outside the scope of this Report. Specific details when required must be furnished to the authority having jurisdiction. See Table 1 of this Report for post sleeve and post sleeve spacer drawings and dimensions.

APPLICABLE CODES:

- 2015, 2018, and 2021 International Building Code (IBC)
- 2015, 2018, and 2021 International Residential Code (IRC)

APPLICABLE CHARACTERISTICS REVIEWED:

1. Structural Performance:

(a) RDI ***Transform*** guardrail system has been reviewed for maximum spans as indicated in Table 2. Table 2 in this Report also indicates the limitations of use evaluated for each design (style).

2. Temperature:

(a) RDI ***Transform*** guardrail system has been reviewed and evaluated for temperature range of -20 °F (-29 °C) to 125 °F (52 °C).

3. Flame Spread Index:

(a) RDI ***Transform*** guardrail system flame spread rating was between 26-75 for Resalite and PVC material when tested in

accordance with ASTM E84, *Standard Test Method for Surface Burning Characteristics of Building Materials*.

4. **Decay Resistance:**

   (a) The material used in the RDI ***Transform*** guardrail system in this Report does not contain any wood and has been deemed comparable to naturally resistant wood or to preservative-treated wood for resistance to fungal decay.

5. **Termite Resistance:**

   (a) The material used in the RDI ***Transform*** guardrail system in this Report does not contain any wood and has been deemed equivalent to naturally resistant wood or to preservative-treated wood for resistance to termite attack.

6. **UV Testing:**

   (a) The UV testing was conducted, and an appropriate adjustment factor was applied in accordance with ASTM D7032, *Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite Deck Boards and Guardrail Systems (Guards or Handrails).*

7. **Fastening:**

   (a) RDI ***Transform*** guardrail system top and bottom rails must be fastened to posts with PVC molded brackets using steel (stainless, corrosion-resistant, or galvanized) screws. See Table 1 of this Report for drawing of the bracket. See Table 3 of this Report and manufacturer's installation instructions for fastening details.

   (b) The fasteners and brackets are supplied by the manufacturer and must be used in the installation of the RDI ***Transform*** guardrail system. Use of other brackets and fasteners is not covered under this Report.

8. **Posts:**

   (a) Wood posts or other wood support framing members are not covered under this Report. However, wood posts and other wood support framing members must be designed to meet load and other requirements in the applicable building code(s), have a minimum specific gravity of 0.50 (Southern Pine or better), and of sufficient thickness to allow full penetration of bracket mounting screws.

APPLICABLE USES:

The RDI ***Transform*** guardrail system evaluated in this Report are for installations on construction complying with IRC or IBC. See Table 2 for guardrail system limitations.

LIMITATIONS OF ACCEPTANCE:

The RDI ***Transform*** guardrail system described in this Report complies with those codes listed in the Applicable Codes section above and is subject to the following conditions.

1. RDI ***Transform*** guardrail system is limited to exterior construction complying with the IRC and the IBC. The guardrail systems provide a protective barrier for walking areas, balconies, porches, stairs and ramps.
2. Installation of the guardrail system must comply with this Report; the manufacturer's published installation instructions, and the applicable code. When the guardrail installation instructions differ from this Report, this Report governs.
3. The fasteners described in this Report have been evaluated for the installation of the RDI ***Transform*** guardrail and handrail only. Material necessary for anchorage of the guardrail system(s) and compatibility of the fasteners to the treated wood supporting construction have not been evaluated.
4. The RDI ***Transform*** guardrail system indicated in the Report must be fastened to the supporting construction as indicated in the manufacturer's published installation instructions and as outlined in this Report. When guardrail fastening instructions differ from this Report, this Report governs.
5. The top rail component for the RDI ***Transform*** guardrail system does not meet the graspability requirements when used as a handrail for stairs. See Description of Building Components 2(b) in this Report for additional requirements.
6. When required, the guardrail system, including a stair (see Description of Building Components 2(b)), in this Report must be designed by a professional and submitted to the authority having jurisdiction for final acceptance.
7. The RDI ***Transform*** guardrail system has not been evaluated as a member of a fire-resistance-rated assembly.
8. RDI has a third-party inspection program provided by PFS TECO.

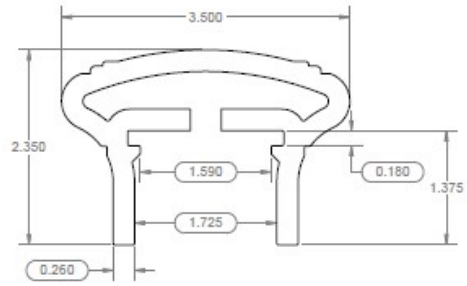
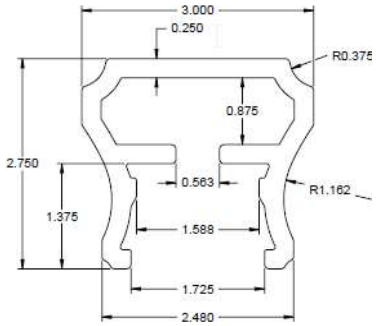
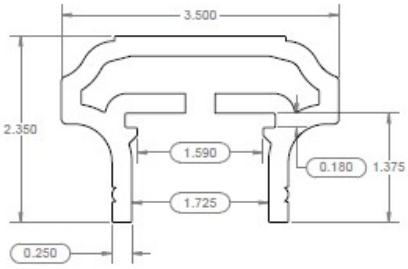
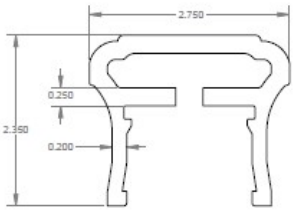
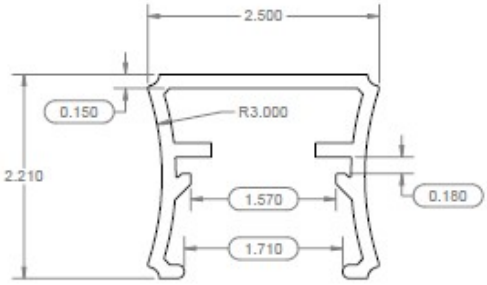
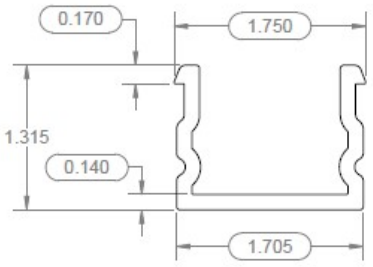
DOCUMENTATION SUBMITTED:

Submitted data was provided in accordance with PFS TECO Certification and Inspection Program: Deck Boards and Guardrails (Quality Control Manual, Specifications, Manufacturer's published installation instructions, Test data and Descriptive information). The products have been evaluated in accordance with ASTM D7032 *Standard Specification for Establishing Performance Ratings for Wood-Plastic Composite and Plastic Lumber Deck Boards, Stair Treads, Guards, and Handrails*.

PRODUCT IDENTIFICATION:

The RDI guardrail assembly system must be identified with a label on each component or the packaging. The information required is as follows: Oldcastle, product identification ***(Transform)***, compliance to ASTM D7032 including the maximum guardrail span and loading, the PFS TECO Building Product Evaluation number (BPER 0113), and the PFS Certification Mark (see image below). Guardrails that are 36" high require a label indicating, "Guardrail installation in residential (1 & 2 Family) units only." Guardrails without this information are not covered under this Report.

Table 1: Schematics of Transform Guardrail System Components

Description	***Profile***
Top Rail	 *Presence*  *Emerge*  *Aspire*  *Graspable*
Bottom Rail	
Sub Rail	

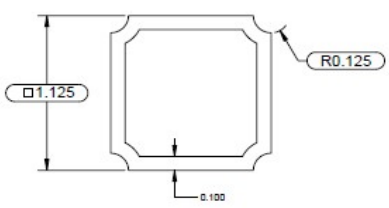
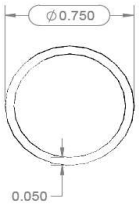
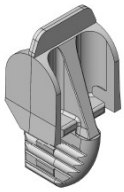
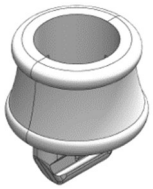
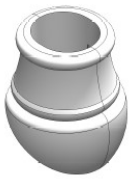
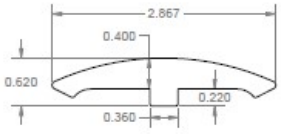
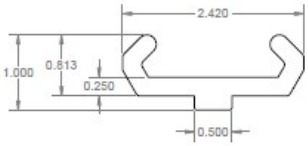
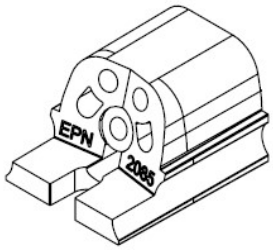
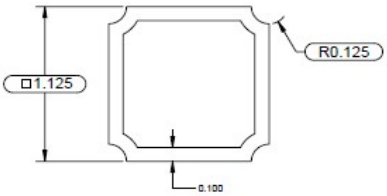
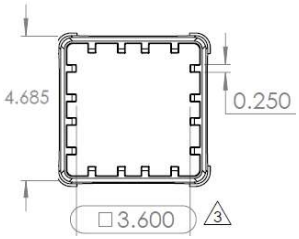
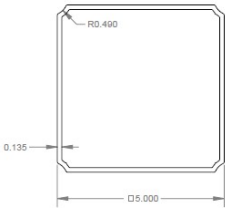
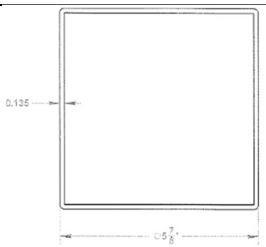
Description	***Profile***
Balusters	 *1-1/8" Square Resalite™*  *Round Aluminum*
Baluster Adaptors	 *Square Baluster*  *Round Baluster-Level*  *Round Baluster-Stair*
Top Rail Insert	 *Aspire/Presence*  *Emerge*
Bracket	
Bottom Rail Support Block	
Post Sleeve	 *5x5" Post Sleeve Insert*  *5x5" Post Sleeve*  *6x6" Post Sleeve*

Table 2 Span Table for Transform Guardrail System

Guardrail Type	***Top Rail***	***Top Rail Stiffener***	***Baluster***	***Max Guardrail Span***
Maximum Guardrail Height 36 in. for IRC Residential One- and Two-Family Residential Dwellings				
Level / In-Line Level / 45º	Presence	No	¾" Aluminum 1-1/8" Square Resalite	96-in.
	Emerge			
	Aspire			
Stair	Presence	No	¾" Aluminum 1-1/8" Square Resalite	92-in.
	Emerge			
	Aspire			
	Graspable	No	1-1/8" Square Resalite	69-in.
Maximum Guardrail Height 42 in. for IBC				
Level / In-Line	Presence	Yes	¾" Aluminum 1-1/8" Square Resalite	96-in.
	Emerge			
	Aspire			
	Presence	No		91-in.
	Emerge			
	Aspire			
Stair	Presence	No		72-in.
	Emerge			
	Aspire			

for SI conversion: 1 in = 25.4 mm, 1 psf = 47.9 Pa, 1 lbf = 0.0044 kN
Refer to Table 3 for fastening schedule.
Maximum span is clear length between posts measured parallel to top/bottom rail.

Table 3: Fastening Schedule for Transform Guardrail Assembly

Location	***Connection***	***Fasteners***
Top Rail	Bracket to Post	Three #10 x 2-1/2" pan-head, square drive, 410 SS 1000 h plated screw
	Bracket to Sub Rail	One #6 x 3/4" trim-head, Philips drive, 18-8 SS screw
	Sub-Rail to Bracket to Rail-Cap	Two #10 x 2" pan-head, square drive, 410 SS 1000 h plated SS screw
	Baluster Adaptors to Rail	Slip Fit
	Baluster to Baluster Adaptors	Slip Fit
Bottom Rail	Bracket to Post	Three #10 x 2-1/2" pan-head, square drive, 410 SS1000 h plated screw
	Bracket to Sub Rail	One #6 x 3/4" trim-head, Philips drive, 18-8 SS screw
	Sub-Rail to Bracket to Rail-Cap	Two #10 x 2" pan-head, square drive, 410 SS 1000 h plated screw
	Baluster Adaptors to Rail	Slip Fit
	Baluster to Baluster Adaptors	Slip Fit
	Rail to Support Block	One #12 x 5" trim-head, square drive, bugle head, 18-8 SS screw [1]

[1] *Pre drill with 1/4" drill bit*