ICC-ES Evaluation Report

ESR-5570

Reissued August 2026

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DIVISION: 06 00 00 — WOOD, PLASTICS AND COMPOSITES **Section: 06 50 00 — Structural Plastics** **Section: 06 63 00 — Plastic Railings**	**REPORT HOLDER:** **GALLAGHER VINYL PRODUCTS**	**EVALUATION SUBJECT:** **LONGEVITY RAILING GUARDRAIL SYSTEMS**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, and 2012 *International Building Code*® (IBC)
- 2021, 2018, 2015, and 2012 *International Residential Code*® (IRC)

Properties evaluated:

- Structural
- Durability
- Surface burning characteristics

2.0 USES

The Longevity Railing 1000, 2000, and 3000 Series guardrail systems described in this evaluation report are limited to exterior use as deck boards and guardrails for balconies, porches, and decks of Type V-B construction (IBC) and other types of construction in applications where untreated wood is permitted by 2021 and 2018 IBC Section 705.2.3.1 (2015 and 2012 IBC Section 1406.3), or in structures constructed in accordance with the IRC. The guardrail systems have been evaluated by testing for structural strength to meet the design loads and requirements of the IBC and IRC.

The Longevity Railing 4000 Series guardrail system described in this evaluation report is limited to exterior use as guardrails for balconies, porches, and decks of One and Two-Family Dwellings constructed in accordance with the IRC. The guardrail systems have been evaluated by testing for structural strength to meet the design loads and requirements of the IRC

3.0 DESCRIPTION

3.1 General:

The Longevity Railing 1000, 2000, and 3000 Series guardrail systems described in this report consist of top and bottom rails with various shapes, hollow pickets having square or round shapes, installation brackets with different shapes, “P,” “h” and “H” shaped aluminum inserts used as reinforcements for top rails, and installation self-drilling screws with different screws heads. The top and bottom rails; and pickets are co-extruded from rigid polyvinyl chloride (PVC) with a PVC cap stock. The guardrail systems are available in the following colors: White, Adobe, Tan, Mocha Walnut, Light Gray, Dark Gray, Green Teak, or Chai Gray, as depicted in Figure 1.

Figures 2 and 3 depict the guardrail components, inserts, and component materials. Tables 1 and 2 list the guardrail systems with the code limitations and the fastening requirements, respectively.

The Longevity Railing 4000 Series guardrail system described in this report consists of contoured top and rectangular bottom rails, square hollow pickets, installation brackets, contoured aluminum inserts used as reinforcements for top rails, and installation screws with different screws heads. The top and bottom rails and pickets are mono-extruded from rigid polyvinyl chloride (PVC) with a PVC capstock. The guardrail system is available in the following colors: White, Adobe, Tan, as depicted in Figure 1. Figure 4 depicts the guardrail components, inserts, and component materials. Table 2 lists the Longevity Railing 4000 Series guardrail system fastening requirements.

The guardrail systems comply with the requirements of ASTM D7032.

3.2 Durability: When subjected to weathering, insect attack, and other decaying elements, materials used to manufacture guardrail systems are equivalent in durability to preservative-treated or naturally durable lumber when used in locations described in Section 2.0. The guardrail systems have been evaluated for structural performance when exposed to temperatures from -20ºF (-29ºC) to 125ºF (52ºC).

3.3 Surface-burning Characteristics: When tested in accordance with ASTM E84, guardrail systems have a flame-spread index of no greater than 200.

4.0 INSTALLATION

Installation of Longevity Railing guardrail systems must comply with this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

5.0 CONDITIONS OF USE:

The Longevity Railing guardrail systems described in this report complies with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this evaluation report, the manufacturer's published installation instructions and the applicable code. A copy of the manufacturer's published installation instructions shall be available at the jobsite at all times. When the manufacturer's published installation instructions differ from this report, this report governs.

5.2 The Longevity Railing 1000, 2000, and 3000 Series guardrail systems described in this evaluation report are limited to exterior use as guards for balconies, porches, and decks of structures of Type V-B construction (IBC) and other types of construction in applications where untreated wood is permitted by 2021 and 2018 IBC Section 705.2.3.1 (2015 and 2012 IBC Section 1406.3), or in structures constructed in accordance with the IRC. The Longevity Railing 4000 Series guardrail system described in this evaluation report is limited to exterior use as guards for balconies, porches, and decks of One and Two-Family Dwellings constructed in accordance with the IRC.

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

5.4 Only those fasteners and fastener configurations described in this report have been evaluated for the installation of the guardrail systems.

5.5 The Longevity Railing 1000, 2000, and 3000 Series guardrail systems described in this report were load tested by using nominally 4x4 (88.9 mm x 88.9 mm) Douglas Fir or 4x4 (88.9 mm x 88.9 mm) treated Southern Pine posts. Where other lumber species are utilized, the fastener capacity shall be verified by the code official or a registered design professional, as applicable. The Longevity Railing 4000 Series guardrail system described in this report was load test by using nominally 4x4 (88.9 mm x 88.9 mm) treated Southern Pine posts. Where other lumber species are utilized, the fastener capacity shall be verified by the code official or a registered design professional, as applicable.

5.6 The guardrails systems described in this report have been evaluated to the design rating and requirements of Tables 1 and 2 of this report.

5.7 The guardrails systems are manufactured at manufacturing facilities located in under an approved quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Deck Board Span Ratings and Guardrail Systems (Guards and Handrails) (AC174), dated January 2012 (editorially revised April 2021).

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-5570) along with the name (Gallagher Vinyl Products), registered trademark, or registered logo of the report holder must be included in the product label.

7.2 In addition, the guardrail systems described in this report are identified on each package by a stamp bearing the report holder's name (Gallagher Vinyl Products), product name, the allowable span, and the date of manufacture.

7.3 The report holder's contact information is the following:

GALLAGHER VINYL PRODUCTS
1114 PARK LANE
DENTON, MARYLAND 21629
(302) 469-5466
www.gallaghervinyl.com
acasey@gallaghervinyl.com

TABLE 1—LONGEVITY RAILING GUARDRAIL SYSTEMS AND CODE LIMITATIONS

GUARDRAIL SYSTEM	INSERT	GUARDRAIL SPAN (ft.)	MAXIMUM HEIGHT (in.)	APPLICABLE CODE
Longevity Railing 1000 Series[4,5,6]	Inverted "h"	6	42	IRC[1,2]
Longevity Railing 1000 Series[4,5,6]	H,P	6 8	42	IRC[1,2] & IBC[3]
Longevity Railing 1000 Series[4,5,6]	P	10	42	IRC[1,2]
Longevity Railing 2000 Series[4,5,6]	Inverted "h"	6	42	IRC[1,2]
Longevity Railing 2000 Series[4,5,6]	P	6 8	42	IRC[1,2] & IBC[3]
Longevity Railing 3000 Series with Polymer Bracket[4,5,6]	Longevity Railing 3000 Series Aluminum Insert	6 8	42	IRC[1,2]
Longevity Railing 3000 Series with Aluminum Brackets[4,5,6]	Longevity Railing 3000 Series Aluminum Insert	6 8	42	IRC[1,2] & IBC[3]
Longevity Railing 3000 Series with Aluminum Brackets[4,5,6]	Longevity Railing 3000 Series (10-ft) Aluminum Insert	10	42	IRC[1,2]
Longevity Railing 3000 Series with Polymer & PVC Brackets[4,5,6]	Longevity Railing 3000 Series Aluminum Insert	6 8	42	IRC[1,2] & IBC[3]
Longevity Railing 3000 Series with Aluminum & PVC Brackets[4,5,6]	Longevity Railing 3000 Series Aluminum Insert	6 8	42	IRC[1,2] & IBC[3]
Longevity Railing 4000 Series[6,7,8]	Longevity Railing 4000 Series Aluminum Insert	8	42	IRC[1,2]

For **SI**: 1 in. = 25.4 mm and 1 ft. = 304.8 mm

[1] All guardrail systems have been tested at the maximum height noted in the above table, measuring from walking surface to top surface of top rail, and the maximum spans. A guardrail system less than 42 inches in height may be installed at the same maximum span as long as the local code requirements for guardrail heights are met.

[2] Applicable to One and Two-Family Dwellings in the IRC.

[3] Applicable to all Use Groups under the IBC.

[4] The top rail inserts for the Longevity 1000, 2000, and 3000 Series are manufactured from 6005A-T61 aluminum alloy. See Figure 2 for profile details.

[5] The installation brackets for the Longevity 1000, 2000, and 3000 Series guardrail systems are manufactured from either aluminum, polyethylene, or PVC materials.

[6] The "P" or Inverted "h" aluminum inserts shall be oriented the long leg of the "P" or the Inverted "h" towards the walking surface.

[7] The top rail inserts for the Longevity 4000 Series guardrail system are manufactured from 6063-T6 aluminum alloy. See Figure 4 for profile details.

[8] The installation brackets for the Longevity 4000 Series guardrail systems are manufactured from PVC materials.

TABLE 2—GUARDRAIL FASTENING REQUIREMENTS[1]

GUARDRAIL PROFILE	CONNECTION	BRACKET	FASTENER[2]	QUANTITY
Longevity Railing 1000 Series	Top Rail Brackets to Post	Longevity Railing 1000 Series Bracket	No. 9 x 1 1/2" SS, pan head, square drive, self-drilling screws	12
	Rail Bracket to Rail		No. 10 x 3/4" pan-head, square drive, self-starting screws	4
	Bracket to Top Guardrail	Longevity Railing 2000 Series Bracket	No. 9 x 1 1/2" SS, pan head, square drive, self-drilling screws	8
	Bracket to Bottom Guardrail		No. 10 x 3/4" pan-head, square drive, self-starting screws	4
Longevity Railing 2000 Series	Top/Bottom Rail Bracket to Post	Longevity Railing 2000 Series Bracket	No. 9 x 1 1/2" SS, pan head, square drive, self-drilling screws	16
	Rail Bracket to Rail		No. 10 x 3/4" pan-head, square drive, self-starting screws	8
Longevity Railing 3000 Series	Top/Bottom Brackets to Post	Longevity Railing 3000 Series Polymer Bracket	No. 9 x 1 1/2" flat head SS self-drilling screws	12
	Bracket to Top Guardrail		No. 9 x 7/8" pan head galvanized steel self-drilling screws	4
	Bracket to Bottom Guardrail		No. 9 x 7/8" pan head galvanized steel self-drilling screws	4
Longevity Railing 3000 Series	Top Rail Brackets to Post	Longevity Railing 3000 Series Aluminum Bracket	No. 9 x 1 1/2" flat head SS self-drilling screws	12
	Bottom Rail Bracket to Post		No. 9 x 7/8" pan head galvanized steel self-drilling screws	4
	Bracket to Top Guardrail		No. 9 x 7/8" pan head galvanized steel self-drilling screws	4
Longevity Railing 3000 Series	Top Rail Brackets to Post	Longevity Railing 3000 Series Polymer Bracket	No. 9 x 1 1/2" flat head SS self-drilling screws	6
	Bottom Rail Bracket to Post	Longevity Railing 3000 Series PVC Level Bracket	No. 9 x 1 1/2" flat-head SS self-drilling screws	6
	Bracket to Top Guardrail	Longevity Railing 3000 Series Polymer Bracket	No. 9 x 7/8" pan head galvanized self-drilling screws	4
	Bracket to Bottom Guardrail	Longevity Railing 3000 Series PVC Level Bracket	No. 9 x 7/8" pan head galvanized self-drilling screws	4
Longevity Railing 3000 Series	Top Rail Brackets to Post	Longevity Railing 3000 Series Aluminum Bracket	No. 9 x 1 1/2" flat head SS self-drilling screws	6
	Bottom Rail Brackets to Post	Longevity Railing 3000 Series PVC Level Bracket	No. 9 x 1 1/2" flat head SS self-drilling screws	6
	Bracket to Top Guardrail	Longevity Railing 3000 Series Aluminum Bracket	No. 9 x 7/8" pan head galvanized steel self-drilling screws	2
	Bracket to Bottom Guardrail	Longevity Railing 3000 Series PVC Level Bracket	No. 9 x 7/8" pan head galvanized steel self-drilling screws	2
Longevity Railing 4000 Series	Top Rail Brackets to Post	Longevity Railing 4000 Series Bracket	No. 10 x 2 ½" flat head, square drive Type 17 point SS screws	8
	Top Rail Brackets to Post		No. 8 x 1 ¼" pan head, square drive self-drilling screws	4
	Bottom Rail Brackets to Post	Longevity Railing 2000 Series Bracket	No. 8 x 1 ½" pan head, square drive Type 17 point SS screws	8
	Bottom Rail Brackets to Rail		No. 10 x ¾" pan head, square drive self-drilling screws	4

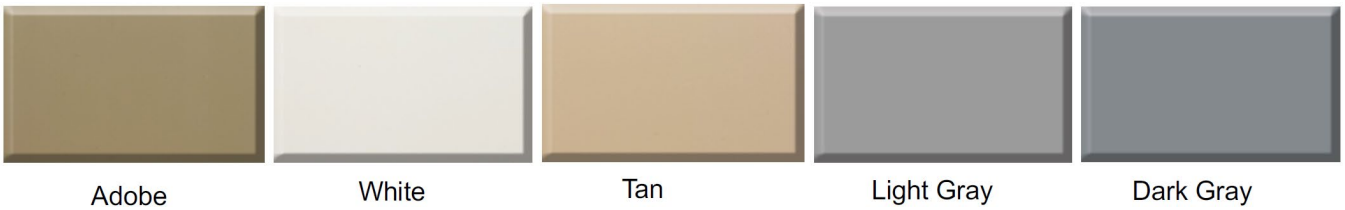
For **SI**: 1 in. = 25.4 mm

[1] Mechanical fasteners are not required to install the crush blocks underneath the bottom rails.

[2] SS is for Stainless Steel



LONGEVITY RAILING 1000 AND 2000 SERIES GUARDRAIL SYSTEMS

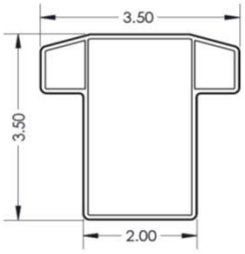


LONGEVITY RAILING 3000 SERIES GUARDRAIL SYSTEMS

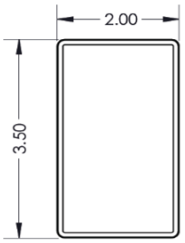


LONGEVITY RAILING 4000 SERIES GUARDRAIL SYSTEMS

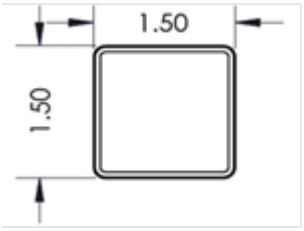
FIGURE 1—COLORS FOR LONGEVITY RAILING GUARDRAIL SYSTEMS



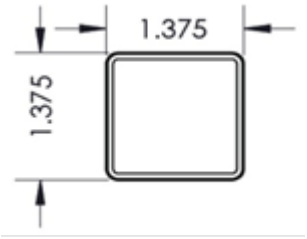
Longevity Railing 1000 Series (Top Rail)



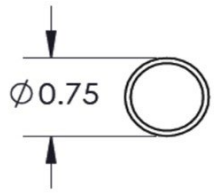
Longevity Railing 2000 Series (Top/Bottom Rail)



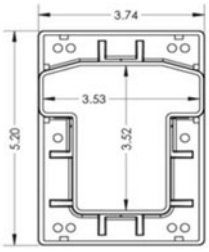
F42C 1-1/2" x 1-1/2" Co-Ex Std. Picket



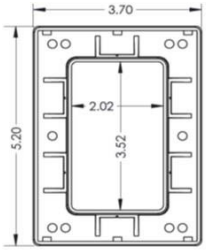
F43C 1-3/8" x 1-3/8" Co-Ex Std. Picket



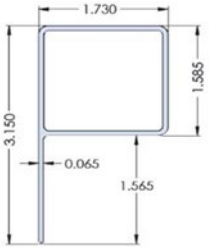
3/4" Round Aluminum Baluster



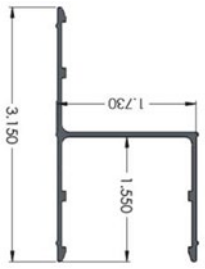
Longevity Railing 1000 Series Bracket



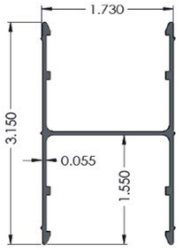
Longevity Railing 2000 Series Bracket



Longevity Railing 1000 and 2000 Series
"P" Aluminum Insert
(Top Rail)

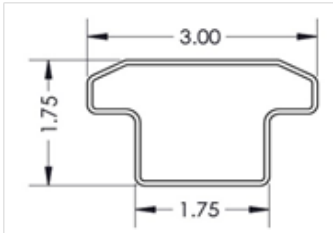


Longevity Railing 1000 and 2000 Series
"h" Aluminum Insert
(Top/Bottom Rail)

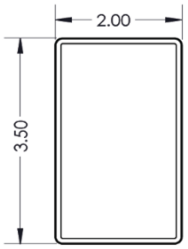


Longevity Railing 1000 and 2000 Series
"H" Aluminum Insert
(Top/Bottom Rail)

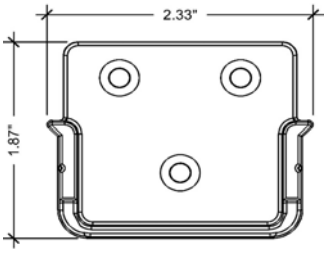
FIGURE 2—LONGEVITY RAILING 1000 AND 2000 SERIES GUARDRAIL SYSTEM COMPONENT PROFILES



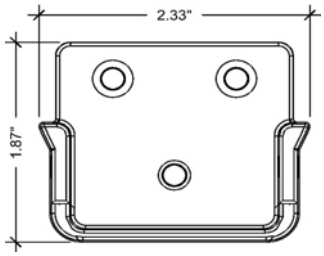
Longevity Railing 3000 Series (Top Rail)



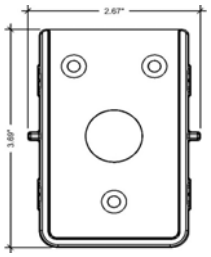
Longevity Railing 3000 Series (Top/Bottom Rail)



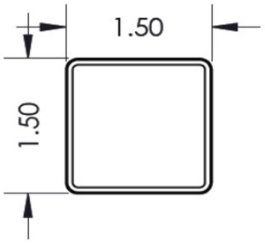
Longevity Railing 3000 Series Polymer Bracket (Top/Bottom Rail)



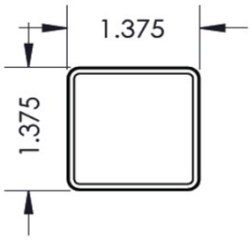
Longevity Railing 3000 Series Aluminum Bracket (Top/Bottom Rail)



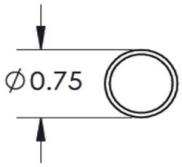
Longevity Railing 3000 Series PVC Level Bracket (Top/Bottom Rail)



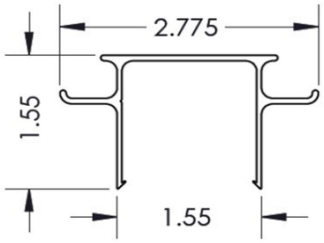
F42S 1-1/2" x 1-1/2" Co-Ex Std Picket



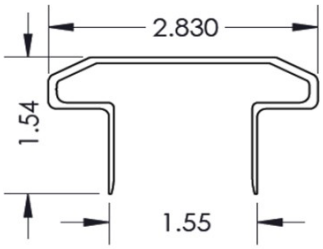
F43C 1-3/8" x 1-3/8" Co-Ex Std Picket



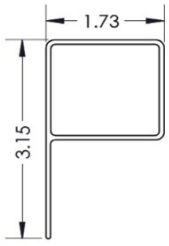
3/4" Round Aluminum Baluster



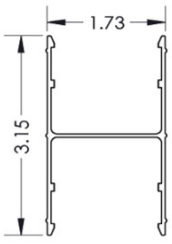
Longevity Railing 3000 Series Aluminum Insert (Top Rail)



Longevity Railing 3000 Series Aluminum Insert (Top Rail) 10-ft Nominal Length



Longevity Railing 3000 Series "P" Aluminum Insert

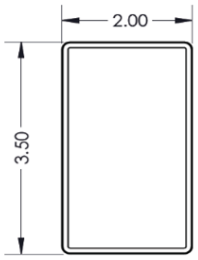


Longevity Railing 3000 Series "H" Aluminum Insert

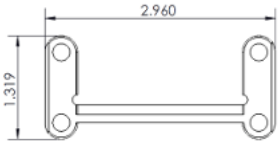
FIGURE 3—LONGEVITY RAILING 3000 SERIES GUARDRAIL SYSTEM COMPONENT PROFILES



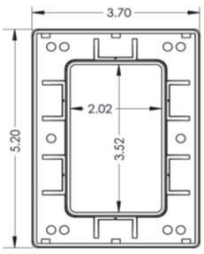
Longevity Railing 4000 Series (Top Rail)



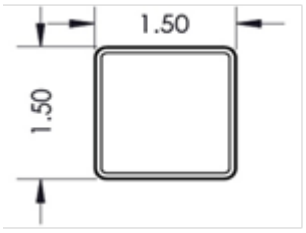
Longevity Railing 4000 Series (Bottom Rail)



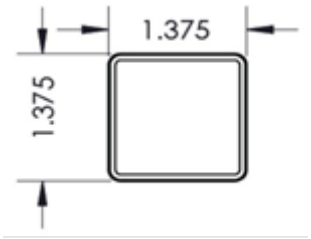
Longevity Railing 4000 Series Mounting Clip



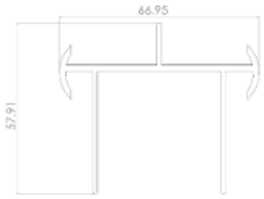
Longevity Railing 2000 Series Bracket



F42C 1-1/2" x 1-1/2" Co-Ex Std. Picket



F43C 1-3/8" x 1-3/8" Co-Ex Std. Picket



Longevity Railing 4000 Series Top Rail Insert

FIGURE 4—LONGEVITY RAILING 4000 SERIES GUARDRAIL SYSTEM COMPONENT PROFILES