



# ICC-ES Evaluation Report

## ESR-4799

Issued December 2021

This report is subject to renewal December 2022.

**DIVISION: 05 00 00—METALS**  
**Section: 05 52 00—Metal Railings**  
**Section: 05 73 13—Glazed Decorative Metal Railings**

**DIVISION: 08 00 00—OPENINGS**  
**Section: 08 81 00—Glass Glazing**  
**Section: 08 88 00—Special Function Glazing**

**REPORT HOLDER:**

**IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)**

**EVALUATION SUBJECT:**

**BASE RAIL, TALON AND UNIVERSAL GLASS PIN GUARDRAIL SYSTEMS**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

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

For evaluation for compliance with codes adopted by Los Angeles Department of Building and Safety (LADBS), see [ESR-4799 LABC and LARC Supplement](#).

**Property evaluated:**

- Structural
- Durability

**2.0 USES**

The Base Rail guardrail system is intended for use in interior and exterior locations of all construction types under the IBC or IRC. The Talon and Universal Standoff Pin guardrail systems are intended for use in interior locations under the IRC.

**3.0 DESCRIPTION**

**3.1 General:** The Base Rail system utilizes continuous aluminum base shoes with glass clamp dry glazing

mechanisms to secure the glass panels (See Figures 3 through 8). The Talon system utilizes Talon surface mounts to secure the glass panels (See Figures 9 through 13). The Universal Standoff Pin system utilizes standoff pin assemblies to secure the glass panels (See Figures 14 through 21). All systems require the top rails and glass panels described in Sections 3.1.1 and 3.1.2.

**3.1.1 Top Rails:**

The top rails are required for all installations and are manufactured from ASTM B221 6063-T6 aluminum. The dimensions of the top rail comply with the graspability requirements outlined in 2021, 2018, and 2015 IBC Section 1014.3.1 and 2021 and 2018 IRC Section R311.7.8.5 (2015 IRC Section R311.7.8.3). See Figure 1.

**3.1.2 Glass Panels:**

The monolithic glass panels must be fully tempered (FT) glass complying with ASTM C1048, ANSI Z97.1 Class A and Category II of CPSC 16 CFR 1201 (procured separately). The glass panels must have a minimum Modulus of Rupture (Fr) ≥ 24,000 psi (165 MPa).

The glass panels must have a nominal thickness of ½-inch, and the minimum thickness of the glass panels must be at least 0.492 inch (12.5 mm).

Glass panels used with the Talon and Universal Standoff Pin systems are prefabricated with holes, which are used for mounting with the associated hardware.

**3.2 Base Rail System:** In addition to the components described in Section 3.1, the Base Rail system is composed on the following components.

**3.2.1 Base Rail:** The Base Rail base shoes are 54 inches (1372 mm) long sections manufactured from ASTM B221 6061-T6 aluminum. See Figure 4.

**3.2.2 Glass Clamp Dry Glaze Mechanism:** The glass clamp dry glaze mechanism supports consist of two metal plates containing 7/16-14 threaded extensions with 7/16-14 nuts factory-bonded to a Polyethylene Terephthalate Glycol (PETG) acrylic isolator. The metal plates are 3.75 inches by 2.55 inches by 0.12 inch thick (95 mm by 65 mm by 3 mm) and are composed of ASTM A240 316 stainless steel. See Figure 5.

**3.2.3 Joining Pins:** The joining pins are 0.185-inch (4.7 mm) diameter by 1.8 inches (45.7 mm) long and are constructed of ASTM B221 6061-T6 aluminum. See Figure 6.

**3.2.4 Shims:** The plastic shims measure 3.75 inches by 2.5 inches by 0.040 inch thick (95 mm by 63.5 mm by 1.0 mm) and are constructed from PETG material.

### 3.3 Talon System:

In addition to the components described in Section 3.1, the Talon system are composed of the following components.

**3.3.1 Base:** The Talon base measures 3.75 inches x 3.75 inches x 6.50 inches (95 mm by 95 mm by 165 mm) and is manufactured from ASTM B221 6061-T6 aluminum. See Figure 10.

**3.3.2 Glass Gasket:** The glass gasket measures 9.8 inches x 1.63 inches x 0.93 inch thick (249 mm by 41 mm x 2.4 mm) EPDM rubber. See Figure 11.

**3.3.3 Clamp Bolt:** The Talon clamp bolt is manufactured from ASTM B221 6061-T6 aluminum. It is 2 inches (50.8 mm) long and 0.5 inch (12.7mm) in diameter, with 1/2-13 UNC threads. See Figure 12.

### 3.4 Universal Standoff Pin System:

In addition to the components described in Section 3.1, the Universal Standoff Pin system is composed of the following glass pin assembly components. See Figure 15.

**3.4.1 Standoff Pin Base:** The standoff pin base is 1.98 inches (50.3 mm) in diameter, 1.15 inches (29.2 mm) long and manufactured from ASTM B221 6061-T6 aluminum. See Figure 16.

**3.4.2 Standoff Pin Cover:** The standoff pin cover is 1.98 inches (50.3 mm) in diameter, 1.925 inches (49 mm) long and manufactured from ASTM B221 6061-T6 aluminum. See Figure 17.

**3.4.3 Standoff Pin End Cap:** The standoff pin cover is 1.98 inches (50.3 mm) in diameter, 0.988 inch (25.1 mm) long and manufactured from ASTM B221 6061-T6 aluminum. See Figure 18.

**3.4.4 Standoff Pin Drywall Skirt:** The standoff pin drywall skirt is a cosmetic cover 2.73 inch (69.3 mm) in diameter, 0.188 inch (4.8 mm) long with a 2 inch (50.8 mm) diameter opening to slide over the standoff pin cover. The skirt is manufactured from ASTM B221 6061-T6 aluminum. See Figure 19.

### 3.5 Durability:

The Base Rail, Talon and Universal Standoff Pin system materials supplied by Iron Baluster (dba Viewrail, dba Stairsupplies) are inherently corrosion-resistant. The material type specified must be appropriate for the environment of the installation. Information verifying the durability must be submitted to the code official, when requested.

## 4.0 DESIGN AND INSTALLATION

**4.1 Installation:** Installation of the guardrail systems, including the top rails, must comply with the manufacturer's published instructions, this report, and the IBC, as applicable.

The manufacturer's published installation instructions must be available at the jobsite at all times during installation. In the event of a conflict between this report and the manufacturer's instructions, this report governs.

**4.1.1 Top Rails:** The top rail must be installed for all situations. The maximum panel widths in Tables 1, 2, 3 and 4 account for the capacities of the top rails. For the Universal Standoff Pin System, Talon System, specific Base Rail System assemblies noted in Table 1 and all Base Rail System assemblies noted in Table 2, the ends of the top rail must be supported by a wall or post, and the design of the attachment to the end support is outside of the scope of this report.

The top rail is secured to the glass panel with a rubber U channel (see Figure 2).

**4.1.2 Base Rail System:** The Base Rail system is a dry glazing system where the glass panel is clamped inside the base shoe by the plastic shim and glass clamp dry glaze mechanism. The base shoes are surface mounted to the building substrate in accordance with the approved design, and adjacent base shoes are attached via joining pins. The glass is held in place by the compressive forces created by the shims and glass clamp dry glaze mechanisms; one shim is installed with each glass clamp dry glaze mechanism. Compressive forces are developed by tightening the glass clamp dry glaze mechanisms to the manufacturer's specifications using the Custom Base Rail Wrench, which is supplied by the manufacturer.

The glass clamp dry glaze mechanism is compatible with the base shoe and glass panel thickness listed in this report.

The glass clamp dry glaze mechanisms must be spaced as shown in Figure 7 for installations governed by the IBC; for installations governed by the IRC, the glass clamp dry glaze mechanisms must be spaced as shown in Figure 8. See Table 1 for installations governed by the IBC and Table 2 for installations governed by the IRC.

**4.1.3 Talon System:** The Talon system is a dry glazing system where the glass panel is clamped inside of the Talon assemblies. The Talon clamp assemblies are surface mounted to the building substrate in accordance with the approved design. The glass panel is installed into the clamp assemblies and the bolts are installed through the holes in the prefabricated glass panels. The bolts are tightened to 40 lb-ft (54.2 N-m) of torque.

A minimum of two Talon clamp assemblies must be used on for each glass panel, and the clamps must be spaced 4 inches (102 mm) on centerline from the edge of the glass. See Table 3 and Figure 13.

**4.1.4 Universal Standoff Pin System:** The Universal Standoff Pin system is a dry glazing system where the glass panel is clamped inside of the Universal Standoff Pin assemblies. The Universal Standoff Pin assemblies are fascia mounted to the building substrate in accordance with the approved design. The holes in the prefabricated glass panels are installed over the bushings in the Universal Standoff Pin assemblies and the glass pin caps are tightened to the outer face of the glass panels. The glass pin caps are tightened to the manufacturer's specifications using the Glass Pin Spanner Wrench, which is supplied by the manufacturer.

Glass panel widths between 42 and 54 inches (1067 and 1372 mm) in width require a minimum of 3 sets of standoff pins (6 total); glass panel widths less than 42 inches (1067 mm) require a minimum of 2 sets of standoff pins (4 total). See Table 4, Figure 20 and Figure 21.

### 4.2 Design:

**4.2.1 Live Loads:** The following project specific live loads must be identified while limiting edge stresses within the

glass panels to 6,000 psi (41.3 MPa), surface stresses within the glass panels to 7,875 psi (54.3 MPa) and the deflection to 1 inch (25.4 mm) or less:

A live load of 50 plf (730 N/m) applied in any direction along the top rail (IBC only).

A single concentrated live load of 200 pounds (0.89 kN) applied in any direction at any point on the top of glass panel (IBC and IRC).

A horizontally applied normal live load of 50 pounds (0.22 kN) applied perpendicular to the glass panel on an area not to exceed 12 inches-by-12 inches (305 mm-by-305 mm) [IBC and IRC].

**4.2.2 Wind Loads:** The allowable stress for the Base Rail System due to wind loading is 10,600 psi (66.2 MPa) for edge stresses and 13,500 psi (93.1 MPa) for surface stresses. The required wind load must be determined by a registered design professional based on the project-specific conditions, taking into account the balustrade location on the structure, and must not exceed the values shown in the tables of this report. The Base Rail guardrail systems allowable wind load capacities are provided in Table 1 for installations governed by the IBC and in Table 2 for installations governed by the IRC.

## 5.0 CONDITIONS OF USE

The Base Rail, Talon and Universal Standoff Pin guardrail systems described in this report comply with, or are a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The Standoff Pin System, Talon System and Base Rail System assemblies described in Table 2 are limited to installations governed by the IRC.
- 5.2 The Standoff Pin System and Talon System are limited to interior installations.
- 5.3 Installation of the Base Rail System assemblies in installations governed by the IBC are restricted to locations in which there is no walking surface beneath them or locations in which the walking surface is permanently protected from the risk of falling glass as outlined in Section 2407.1 of the IBC.
- 5.4 The products are limited to installation where they are not subject to vehicle impacts.
- 5.5 The supporting structure and anchorage of the systems to the supporting structure is outside of the scope of this report and must be designed by a registered design professional and constructed to support the loads imposed by the guards in accordance with the applicable code.
- 5.6 Drawings and design details for the Base Rail, Talon and Universal Standoff Pin guardrail systems, using the information noted in this report, must be included on construction plans submitted to the code official for approval where required by the local jurisdiction. The drawings and details must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.7 When installed where the system anchors are exposed to moisture, the system anchors must be of a material intended for the use and identified by the manufacturer as acceptable for exterior applications.
- 5.8 All metals in contact with aluminum must either be an alloy approved for direct aluminum contact, or isolated from the aluminum by an approved coating.
- 5.9 For the Universal Standoff Pin System, Talon System, specific Base Rail System assemblies noted in Table 1 and all Base Rail System assemblies noted in Table 2, both ends of the top rails must be supported by a wall or post, and the attachment must be capable of supporting a concentrated horizontal load of 200lbs (0.89 kN).
- 5.10 Glass sand-blasted or etched on surfaces 1 (outside face) or 2 (inside face) is outside the scope of this report.
- 5.11 Use of the systems as a grab bar is outside the scope of this report.
- 5.12 All glass panels must be fully tempered glass complying with Section 3.2 and must be fabricated and inspected in accordance with ASTM C1048. The glass fabricator must provide certification of compliance with ASTM C1048. Glass must be procured directly from a qualified glass fabricator.
- 5.13 The Base Rail, Talon and Universal Standoff Pin guardrail system components listed in this report, except for the glass panels are supplied by Iron Baluster (dba Viewrail, dba Stairsupplies).

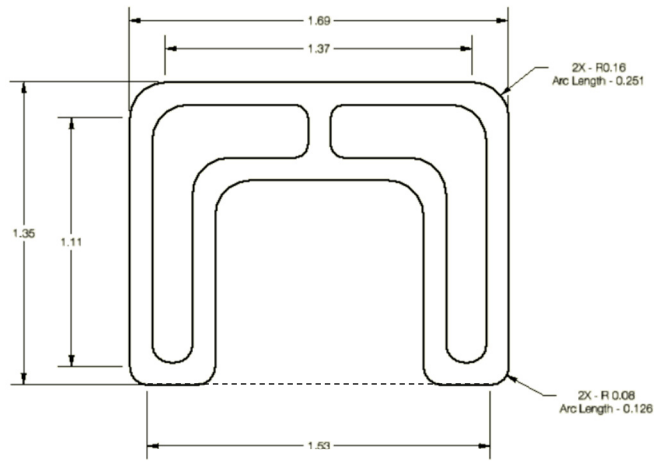
## 6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Glass Railing and Balustrade Systems (AC439) dated April 2019 (editorially revised August 2020).

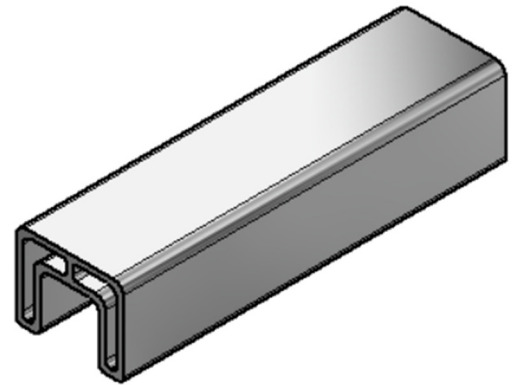
## 7.0 IDENTIFICATION

- 7.1 The Base Rail, Talon and Universal Standoff Pin guardrail system components described in this report are identified by a label on the packaging bearing the manufacturer's name; product description and/or part number; and the ICC-ES evaluation report number (ESR-4799). The Talon and Universal Standoff Pin guardrail system shall additionally be labeled with the following language, "For Use in One- and Two-Family Dwellings Only."
- 7.2 The glass panels must be identified as specified in the applicable code.
- 7.3 The report holder's contact information is the following:

**IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)**  
**1722 EISENHOWER DRIVE NORTH**  
**GOSHEN IN, 46526**  
**1-866-261-8013**  
[www.viewrail.com](http://www.viewrail.com)  
[www.stairsupplies.com](http://www.stairsupplies.com)



Aluminum Top Rail Profile



Aluminum Top Rail Isometric View

FIGURE 1—ALUMINUM TOP RAIL PROFILE

(For use with the Base Rail, Talon, and Universal Standoff Pin guardrail systems)

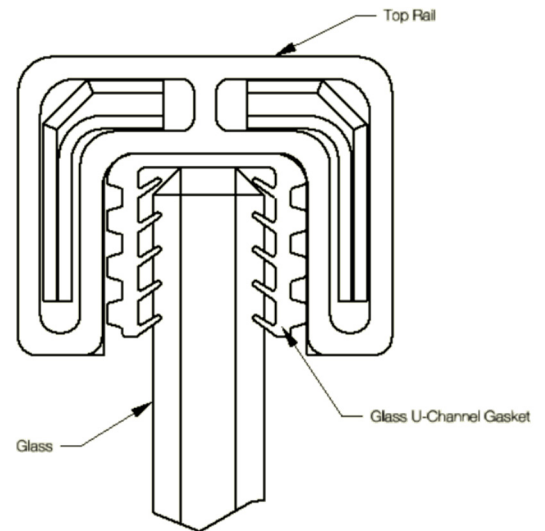
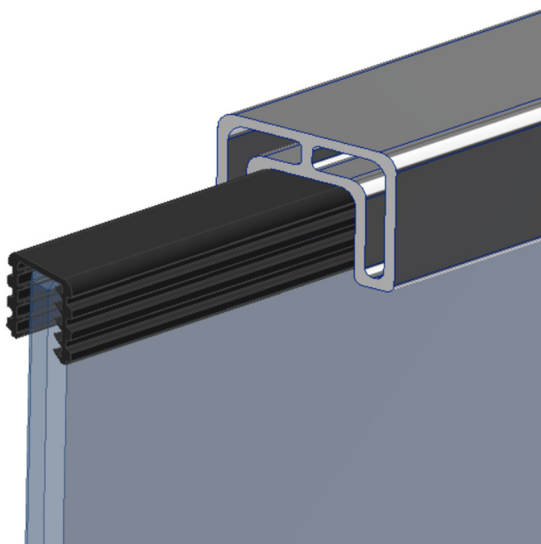


FIGURE 2—TOP RAIL ATTACHMENT

(For use with the Base Rail, Talon, and Universal Standoff Pin guardrail systems)

**TABLE 1—ALLOWABLE DIMENSIONS AND WIND LOADS FOR BASE RAIL SYSTEM (IBC)<sup>1,2</sup>**

MAXIMUM MIDDLE GLASS PANEL WIDTH (in.)	MAXIMUM END GLASS PANEL WIDTH (in.) <sup>3</sup>	MAXIMUM GUARD HEIGHT ( $H_g$ <sup>2</sup> ), in. <sup>4,5</sup>	ALLOWABLE WIND PRESSURE ( $w_{all\ wind}$ <sup>6</sup> ), psf
<b>54</b>	<b>12</b>	<b>42</b>	<b>77</b>

For SI: 1 inch = 25.4 mm; 1 psf = 47.9 Pa

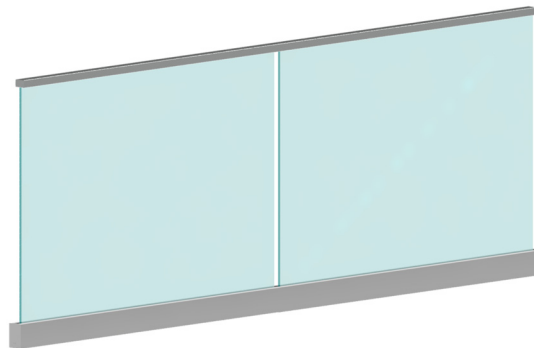
1. A top rail must be installed in all situations.
2. Base Rail clamps must be spaced as shown in Figure 7.
3. When the top rail is adequately supported by a wall or post, the maximum end panel width may be greater than the tabulated maximum end panel width (12 inches) but no greater than the maximum middle panel glass width (54 inches).
4. Based on an allowable live load edge stress of 6000 psi, an allowable live load surface stress of 7875 psi and an allowable deflection of 1-inch when a 50 plf live load or 50 lb concentrated load are considered in accordance with Section 1607.9 of the 2021 IBC (Section 1607.8 of the 2018 and 2015 IBC). Other live loads listed in Section 4.2.1 must also be considered.
5. Glass height above floor,  $H_g$ .
6.  $w_{all\ wind}$  is based on an allowable wind load edge stress of 10600 psi and allowable wind load surface stress of 13500 psi.

**TABLE 2—ALLOWABLE DIMENSIONS AND WIND LOADS FOR BASE RAIL SYSTEM (IRC only)<sup>1,2,3</sup>**

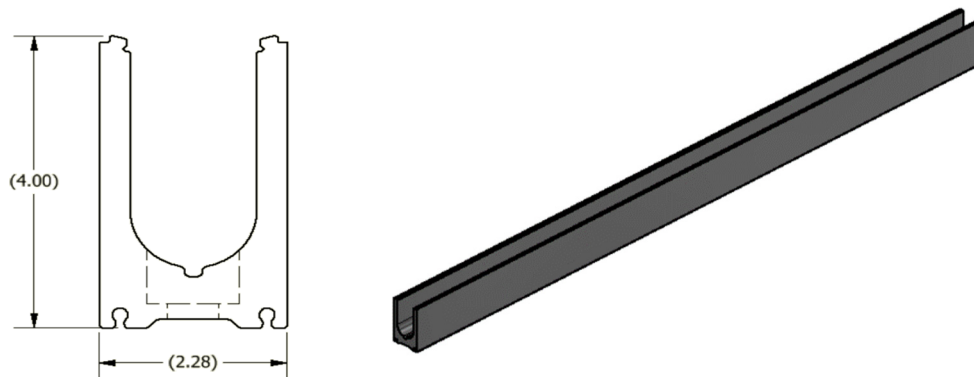
MAXIMUM GLASS PANEL WIDTH (in.) <sup>4</sup>	MAXIMUM GUARD HEIGHT ( $H_g$ <sup>2</sup> ), in. <sup>5,6</sup>	ALLOWABLE WIND PRESSURE ( $w_{all\ wind}$ <sup>7,8</sup> ), psf
<b>54</b>	<b>42</b>	<b>50</b>

For SI: 1 inch = 25.4 mm; 1 psf = 47.9 Pa

1. Installations are limited to projects governed by the IRC.
2. A top rail must be installed in all situations.
3. Base Rail clamps must be spaced as shown in Figure 8.
4. The top rail must be adequately supported by a wall or post on both ends.
5. Based on an allowable live load edge stress of 6000 psi, an allowable live load surface stress of 7875 psi and an allowable deflection of 1-inch when a 200 lb concentrated live load or 50lb concentrated live load are considered in accordance with Section R301.5 of the IRC.
6. Glass height above floor,  $H_g$ .
7.  $w_{all\ wind}$  is based on an allowable wind load edge stress of 10600 psi and allowable wind load surface stress of 13500 psi.
8. If the Base Rail clamps are spaced as shown in Figure 7, the wind loads may be increased to those shown in Table 1 when installation complies with Figure 7 instead of Figure 8.



**FIGURE 3— BASE RAIL SYSTEM**



**FIGURE 4 —BASE RAIL CONTINUOUS SHOE PROFILE**

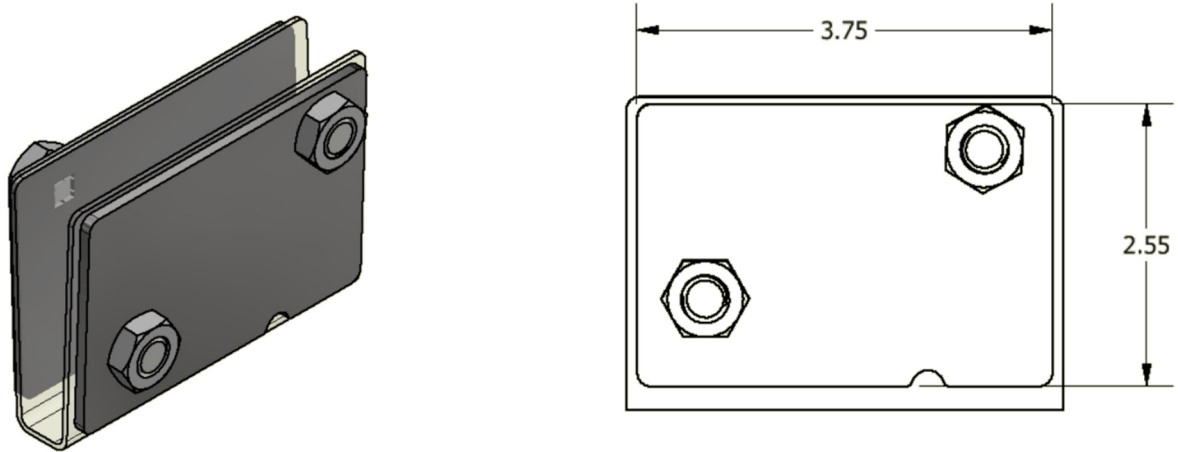


FIGURE 5 —GLASS CLAMP PLATE DETAIL

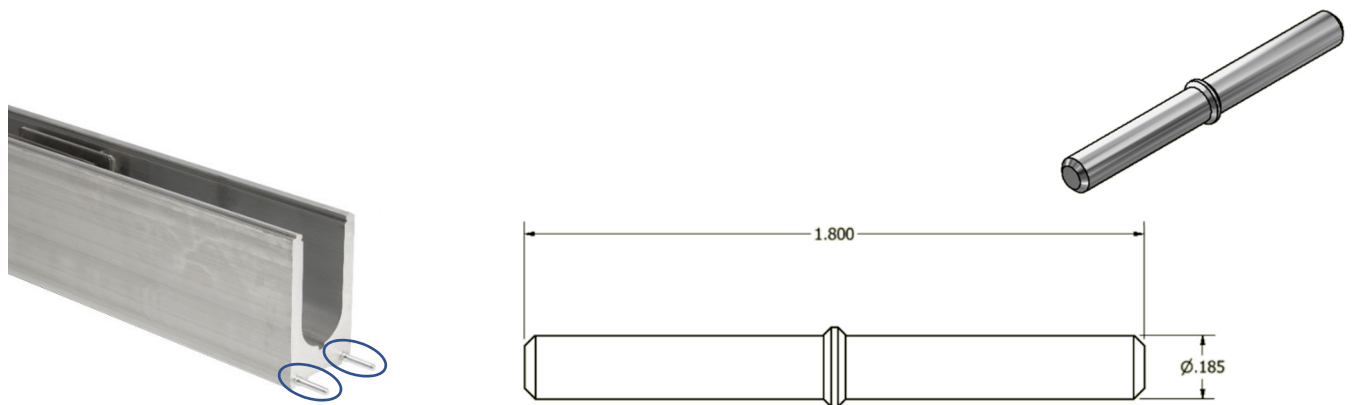
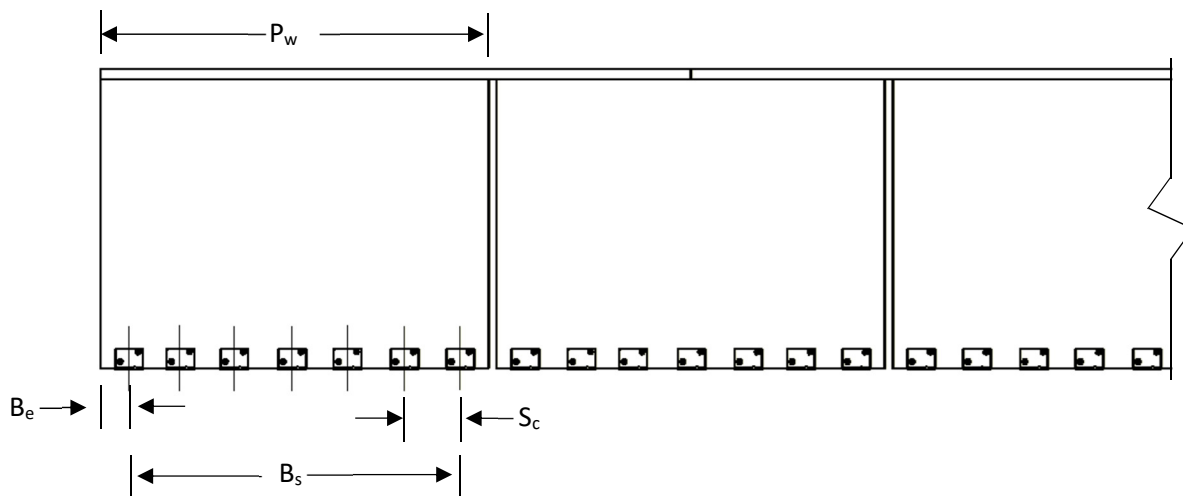
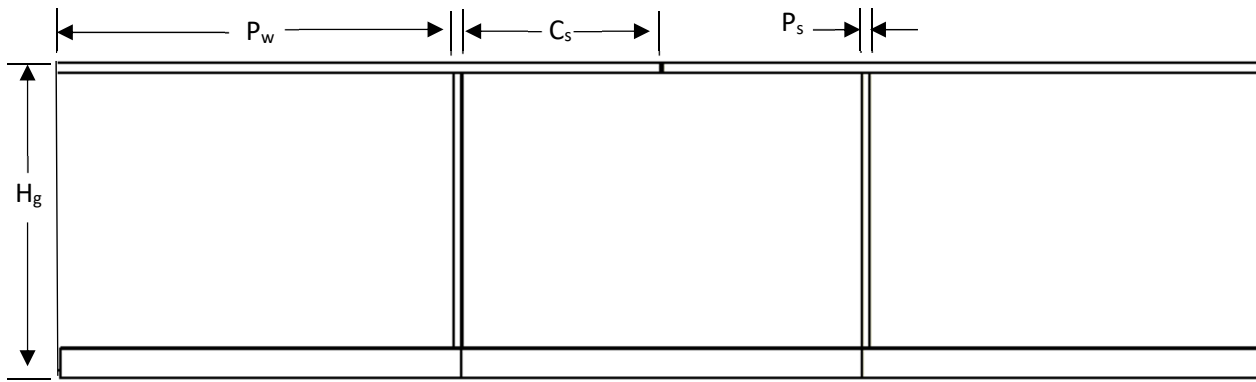


FIGURE 6 —JOINING PIN DETAIL



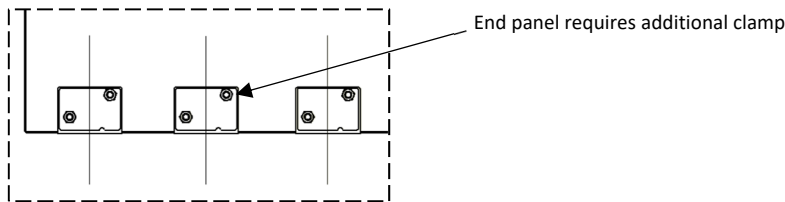
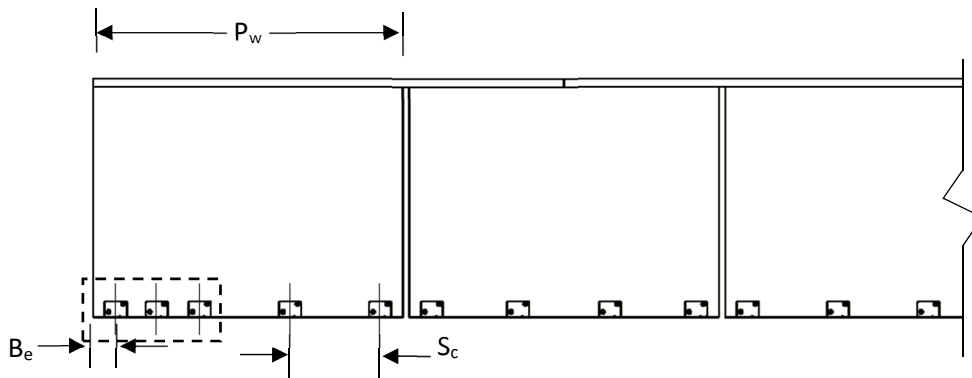
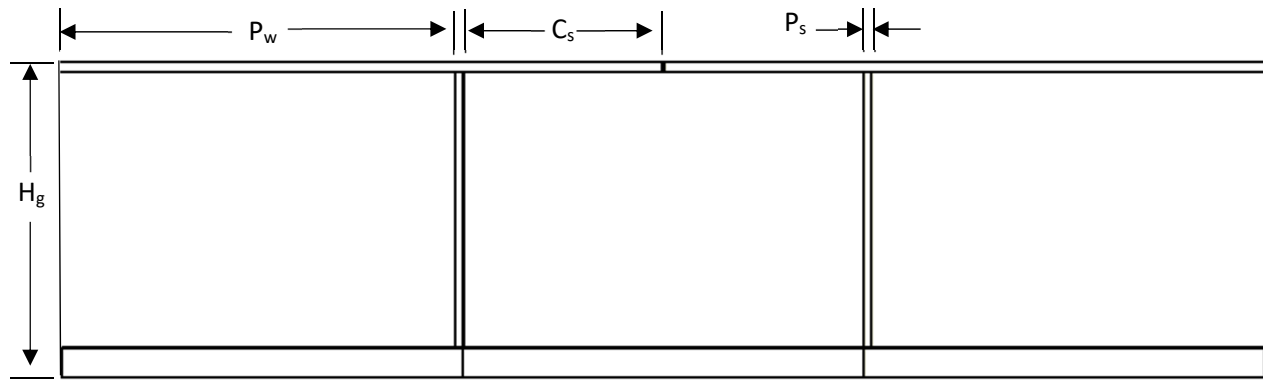
<b>H<sub>g</sub></b>	Guard Height	H <sub>gmax</sub>	Maximum Guard Height	<b>42"</b>
		H <sub>gmin</sub>	Minimum Guard Height	<b>12"</b>
<b>P<sub>w</sub></b>	Glass Panel Width	P <sub>wmax</sub>	Maximum Glass Panel Width	<b>54"</b>
		P <sub>wmin</sub>	Minimum Glass Panel Width	<b>12"</b>
<b>C<sub>s</sub></b>	Top Rail Coupler Spacing			<b>0.5P<sub>w</sub></b>
<b>P<sub>s</sub></b>	Spacing Between Glass Panels	P <sub>smax</sub>	Maximum Spacing Between Glass Panels	<b>1"</b>
		P <sub>smin</sub>	Minimum Spacing Between Glass Panels	<b>0.25"</b>
<b>S<sub>c</sub></b>	Spacing Between Glass Clamps	S <sub>cmax</sub> <sup>1</sup>	Maximum Spacing Between Clamps (On Center)	<b>7.75"</b>
<b>B<sub>e</sub></b>	Clamp Centerline to Glass Panel Edge			<b>4"</b>
<b>B<sub>s</sub></b>	End Clamp Centerline to End Clamp Centerline Spacing			<b>P<sub>w</sub>-2B<sub>e</sub></b>

For SI: 1 inch = 25.4 mm

<sup>1</sup> A minimum of two glass clamp dry glaze mechanisms are required for each glass panel.

<sup>2</sup> Installation must also comply with Table 1.

**FIGURE 7 —BASERAIL CLAMP SPACING REQUIREMENTS ON GLASS PANEL (IBC)<sup>2</sup>**



$H_g$	Guard Height	$H_{gmax}$	Maximum Guard Height	42"
		$H_{gmin}$	Minimum Guard Height	12"
$P_w$	Glass Panel Width	$P_{wmax}$	Maximum Glass Panel Width	54"
		$P_{wmin}$	Minimum Glass Panel Width	12"
$C_s$	Top Rail Coupler Spacing			$0.5P_w$
$P_s$	Spacing Between Glass Panels	$P_{smax}$	Maximum Spacing Between Glass Panels	1"
		$P_{smin}$	Minimum Spacing Between Glass Panels	0.25"
$S_c$	Spacing Between Glass Clamps	$S_{cmax}^1$	Maximum Spacing Between Clamps (On Center)	15.325"
$B_e$	Clamp Centerline to Glass Panel Edge			4"
$B_s$	End Clamp Centerline to End Clamp Centerline Spacing			$P_w - 2B_e$

For SI: 1 inch = 25.4 mm

<sup>1</sup> A minimum of two glass clamp dry glaze mechanisms are required for each glass panel.

<sup>2</sup> Installation must also comply with Table 2.

FIGURE 8 —BASERAIL CLAMP SPACING REQUIREMENTS ON GLASS PANEL (IRC)<sup>2</sup>



TABLE 3—ALLOWABLE DIMENSIONS FOR TALON SYSTEM (IRC only)<sup>1,2</sup>

MAXIMUM GLASS PANEL WIDTH (in.) <sup>3</sup>	MAXIMUM GUARD HEIGHT (H <sub>g</sub> <sup>4</sup> ), in. <sup>5</sup>
54	42

For SI: 1 inch = 25.4 mm

1. Installations are limited to interior installations for projects governed by the IRC.
2. A top rail must be installed in all situations.
3. The top rail must be adequately supported by a wall or post on both ends.
4. Glass height above floor, H<sub>g</sub>.
5. Based on an allowable live load edge stress of 6000 psi and an allowable deflection of 1-inch when a 200 lb concentrated live load or 50 lb concentrated live load are considered in accordance with Section R301.5 of the IRC.

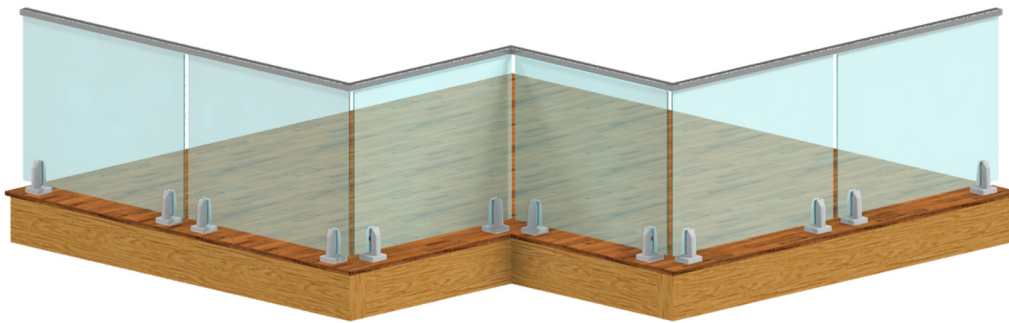


FIGURE 9 – TALON SYSTEM

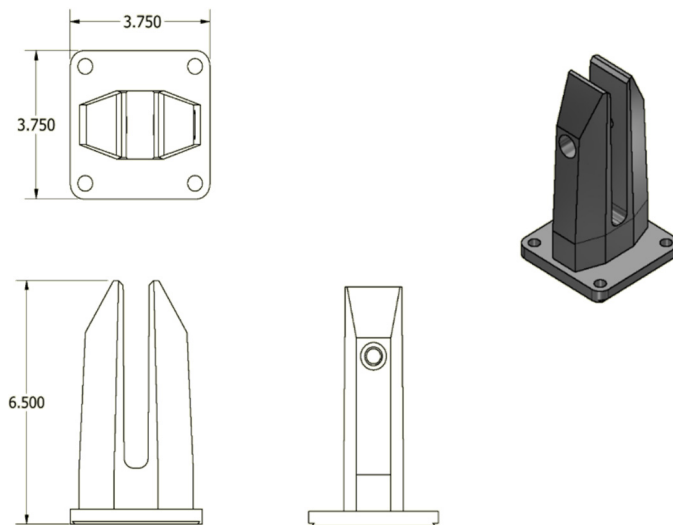


FIGURE 10 —TALON BASE DETAIL

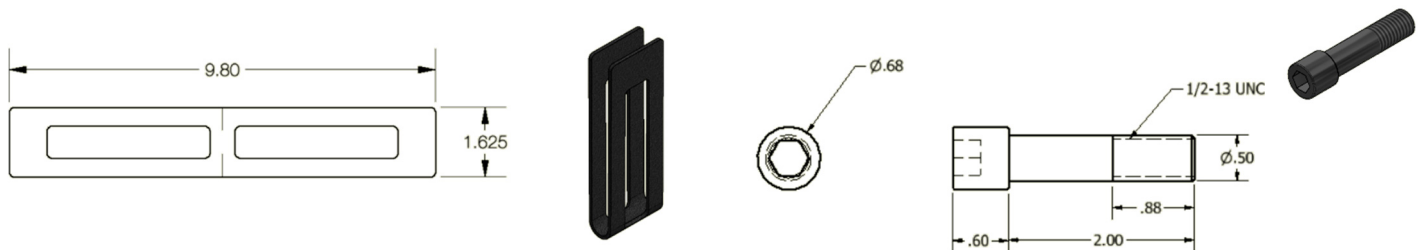
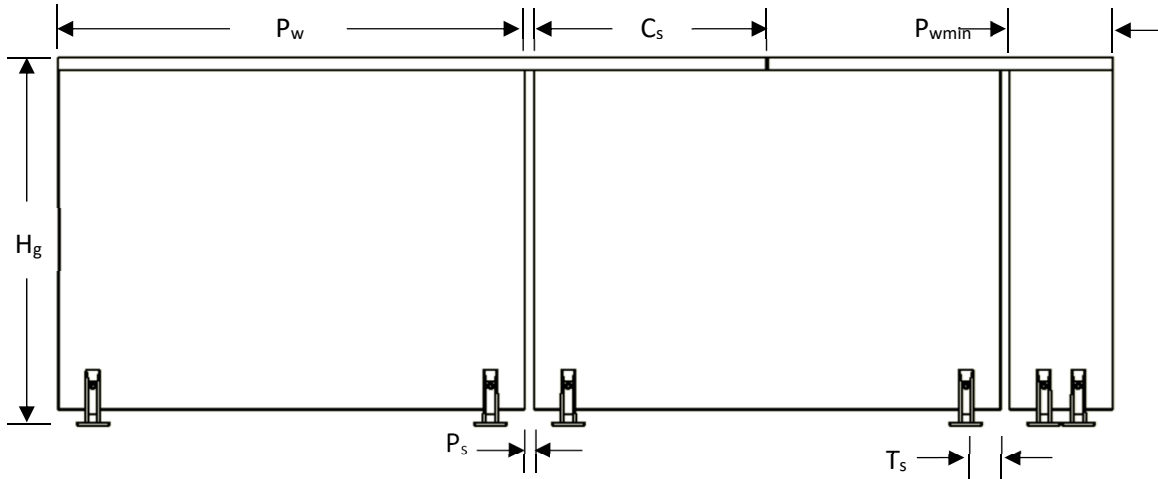


FIGURE 11 —TALON GASKET DETAIL

FIGURE 12 —CLAMP BOLT DETAIL



$H_g$	Guard Height	$H_{gmax}$	Maximum Guard Height	<b>42"</b>
		$H_{gmin}$	Minimum Guard Height	<b>12"</b>
$P_w$	Glass Panel Width	$P_{wmax}$	Maximum Glass Panel Width	<b>54"</b>
		$P_{wmin}$	Minimum Glass Panel Width	<b>12"</b>
$C_s$	Top Rail Coupler Spacing			<b><math>0.5P_w</math></b>
$P_s$	Spacing Between Glass Panels	$P_{smax}$	Maximum Spacing Between Glass Panels	<b>1"</b>
		$P_{smin}$	Minimum Spacing Between Glass Panels	<b>0.25"</b>
$T_s$ <sup>1</sup>	Talon Centerline to Glass Panel Edge			<b>4"</b>

For SI: 1 inch = 25.4 mm

<sup>1</sup> Center of hole in glass must be 2.75 inches above lower glass edge.

<sup>2</sup> Installation must also comply with Table 3.

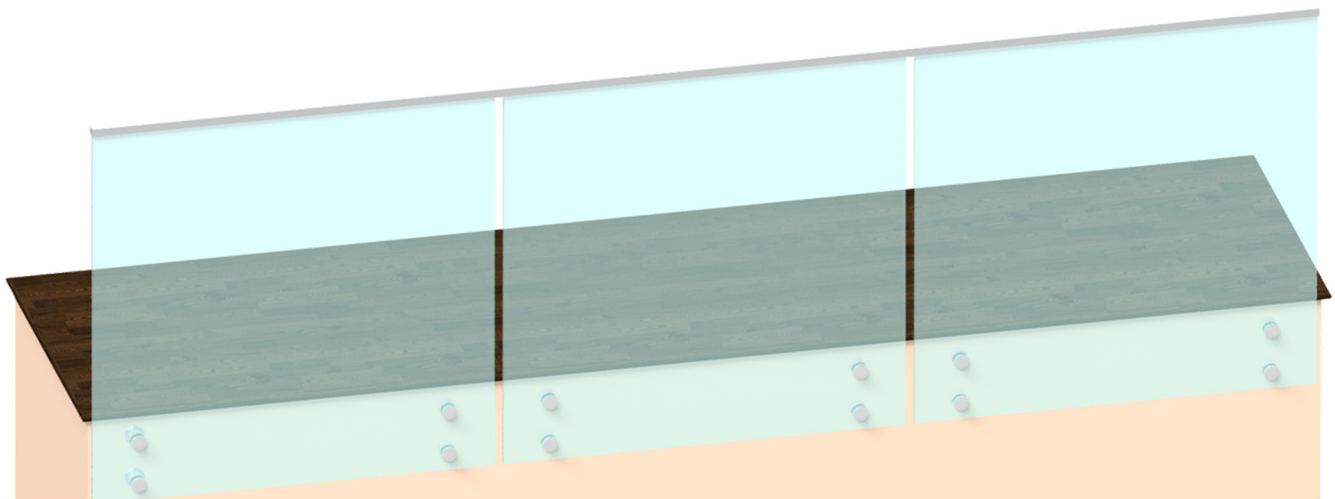
**FIGURE 13—TALON ASSEMBLY<sup>2</sup>**

**TABLE 4—ALLOWABLE DIMENSIONS FOR STANDOFF PIN SYSTEM (IRC only)<sup>1,2</sup>**

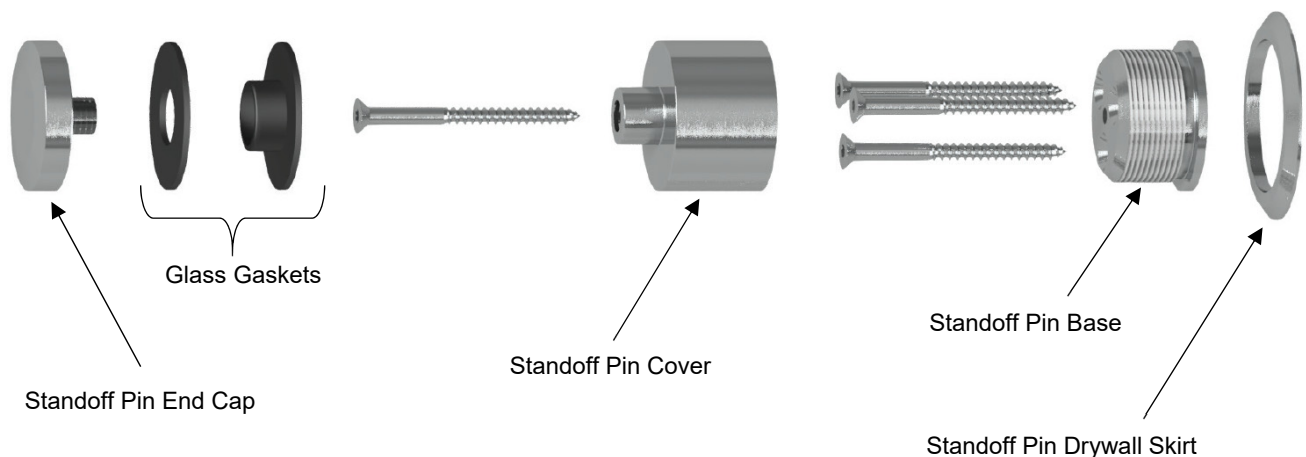
<b>MAXIMUM GLASS PANEL WIDTH (in.)<sup>3,4,5</sup></b>	<b>MAXIMUM PANEL HEIGHT (H<sub>p</sub><sup>5</sup>), in.<sup>6</sup></b>
<b>54</b>	<b>49</b>

For SI: 1 inch = 25.4 mm

1. Installations are limited to interior installations for projects governed by the IRC.
2. A top rail must be installed in all situations.
3. The top rail must be adequately supported by a wall or post on both ends.
4. Glass panel widths between 42 and 54 inches in width require a minimum of 3 sets of standoff pins (6 total); glass panel widths less than 42 inches require a minimum of 2 sets of standoff pins (4 total). See Figures 20 and 21.
5. Guard height above centerline of top row of standoff pins, H<sub>p</sub>.
6. Based on an allowable live load edge stress of 6000 psi, and an allowable deflection of 1-inch when a 200 lb concentrated live load or 50lb concentrated live load are considered in accordance with Section R301.5 of the IRC.



**FIGURE 14 – UNIVERSAL STANDOFF PIN SYSTEM**



**FIGURE 15 – EXPLODED VIEW OF GLASS PIN ASSEMBLY**

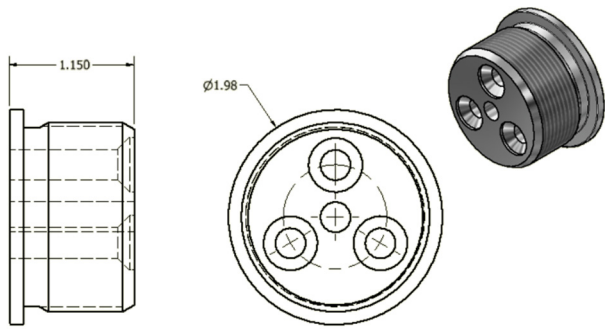


FIGURE 16 – STANDOFF PIN BASE DETAIL

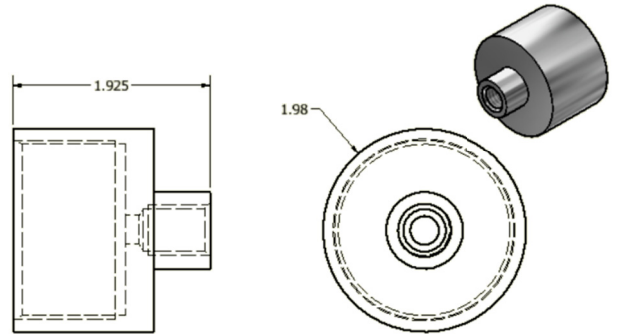


FIGURE 17 – STANDOFF PIN COVER DETAIL

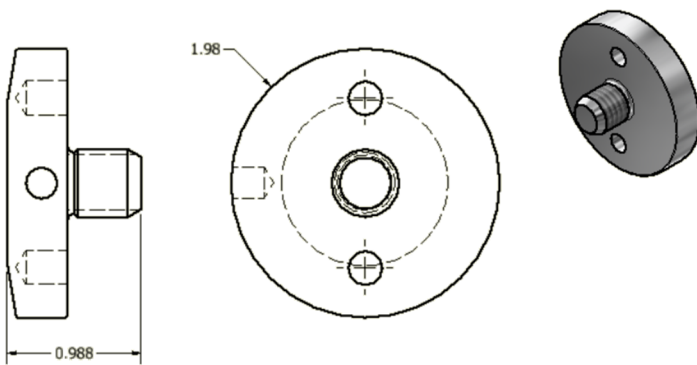


FIGURE 18 —STANDOFF PIN CAP

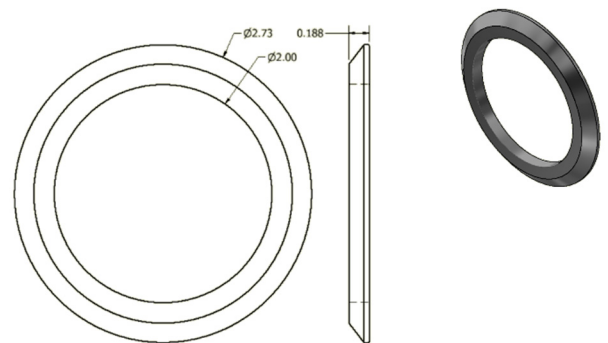
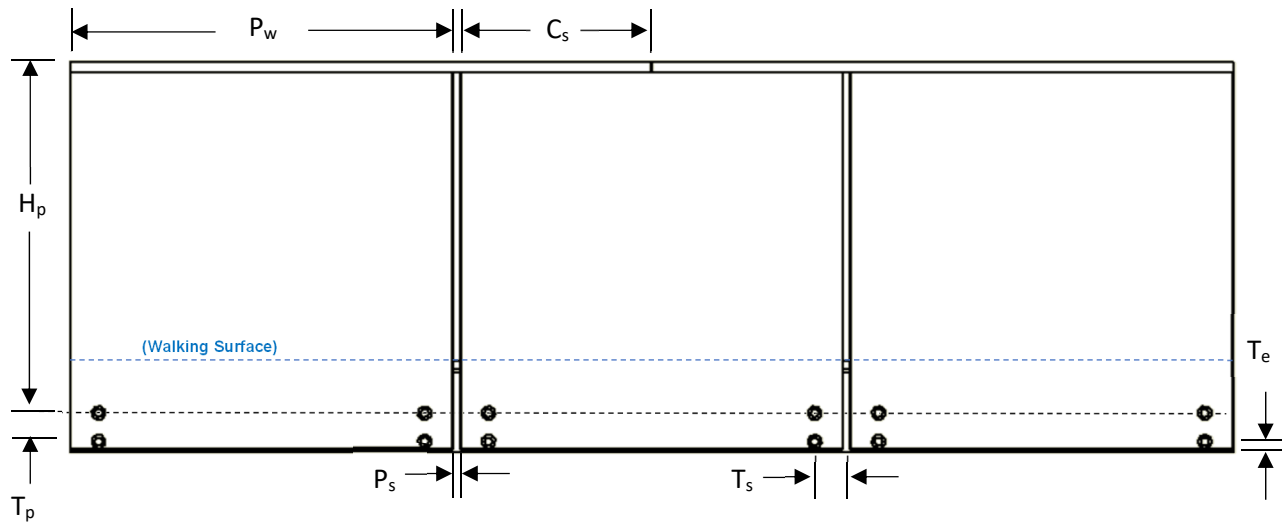


FIGURE 19 —DRYWALL SKIRT DETAIL



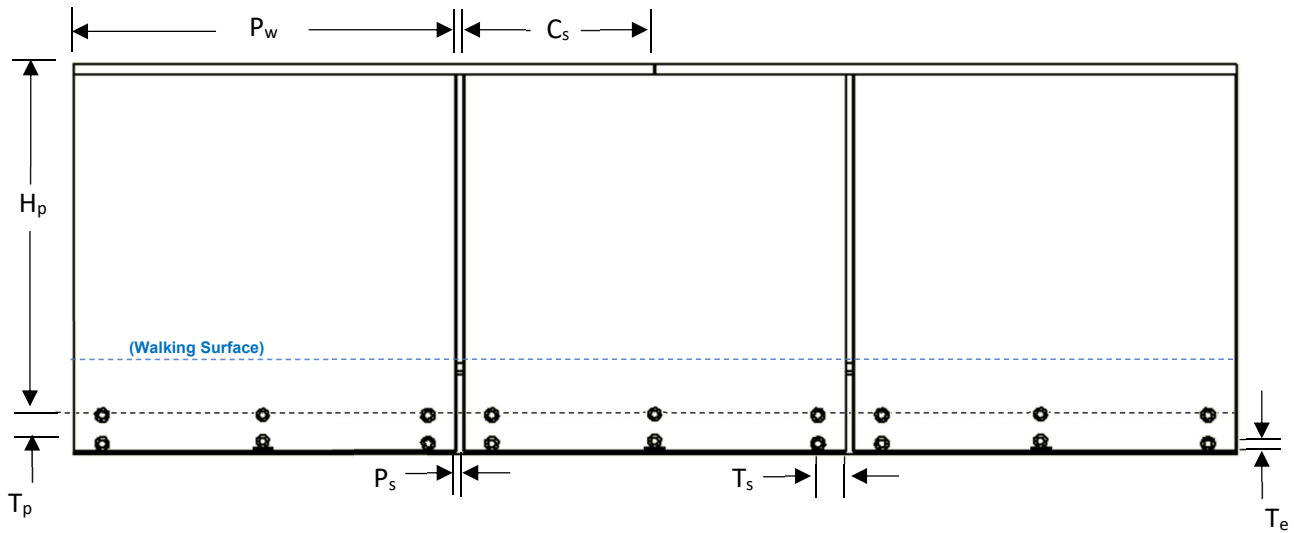
$H_p^1$	Guard Height	$H_{pmax}$	Maximum Guard Height	49"
		$H_{pmin}$	Minimum Guard Height	19"
$P_w$	Glass Panel Width	$P_{wmax}$	Maximum Glass Panel Width	<42"
		$P_{wmin}$	Minimum Glass Panel Width	12"
$C_s$	Top Rail Coupler Spacing			$0.5P_w$
$P_s$	Spacing Between Glass Panels	$P_{smax}$	Maximum Spacing Between Glass Panels	1"
		$P_{smin}$	Minimum Spacing Between Glass Panels	0.25"
$T_s$	Universal Standoff Pin Centerline to Glass Panel Edge			6"
$T_p$	Universal Standoff Pin Vertical Centerline to Centerline Spacing			4"
$T_e$	Universal Standoff Pin Centerline to Glass Panel Edge (Bottom)			1.625"

For SI: 1 inch = 25.4 mm

<sup>1</sup> Guard height above centerline of bottom row of standoff pins,  $H_p$ .

<sup>2</sup> Installation must also comply with Table 4.

**FIGURE 20 – STANDOFF PIN ASSEMBLY FOR PANELS LESS THAN 42 INCHES IN WIDTH<sup>2</sup>**



$H_p^1$	Guard Height	$H_{gmax}$	Maximum Guard Height	49"
		$H_{gmin}$	Minimum Guard Height	17"
$P_w$	Glass Panel Width	$P_{wmax}$	Maximum Glass Panel Width	54"
		$P_{wmin}$	Minimum Glass Panel Width	42"
$C_s$	Top Rail Coupler Spacing			$0.5P_w$
$P_s$	Spacing Between Glass Panels	$P_{smax}$	Maximum Spacing Between Glass Panels	1"
		$P_{smin}$	Minimum Spacing Between Glass Panels	0.25"
$T_s$	Universal Standoff Pin Centerline to Glass Panel Edge			6"
$T_p$	Universal Standoff Pin Vertical Centerline to Centerline Spacing			4"
$T_e$	Universal Standoff Pin Centerline to Glass Panel Edge (Bottom)			1.625"

For SI: 1 inch = 25.4 mm

<sup>1</sup> Guard height above centerline of top row of standoff pins,  $H_p$ .

<sup>2</sup> Installation must also comply with Table 4.

**FIGURE 21 —STANDOFF PIN ASSEMBLY FOR PANELS GREATER THAN OR EQUAL TO 42 INCHES IN WIDTH<sup>2</sup>**

**DIVISION: 05 00 00—METALS**

**Section: 05 52 00—Metal Railings**

**Section: 05 73 13—Glazed Decorative Metal Railings**

**DIVISION: 08 00 00—OPENINGS**

**Section: 08 81 00—Glass Glazing**

**Section: 08 88 00—Special Function Glazing**

**REPORT HOLDER:**

**IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)**

**EVALUATION SUBJECT:**

**BASE RAIL, TALON AND UNIVERSAL GLASS PIN GUARDRAIL SYSTEMS**

## 1.0 REPORT PURPOSE AND SCOPE

**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Base Rail, Talon and Universal Standoff Pin guardrail systems, described in ICC-ES evaluation report [ESR-4799](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

**Applicable code editions:**

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

## 2.0 CONCLUSIONS

**2.1 LABC:** The Base Rail guardrail system, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4799](#), complies with the LABC Chapter 24, and is subject to the conditions of use described in this supplement.

**2.2 LARC:** The Base Rail, Talon and Universal Standoff Pin guardrail systems, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4799](#), comply with the LARC, and are subject to the conditions of use described in this supplement.

## 3.0 CONDITIONS OF USE

The Base Rail, Talon and Universal Standoff Pin guardrail systems described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4799](#).
- The design, installation, conditions of use and identification of the Base Rail guardrail system is in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-4799](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.
- The Talon and Universal Standoff Pin guardrail systems are limited to interior use only in installations governed by the LARC.

This supplement expires concurrently with the evaluation report, issued December 2021.

**DIVISION: 05 00 00—METALS****Section: 05 52 00—Metal Railings****Section: 05 73 13—Glazed Decorative Metal Railings****DIVISION: 08 00 00—OPENINGS****Section: 08 81 00—Glass Glazing****Section: 08 88 00—Special Function Glazing****REPORT HOLDER:****IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)****EVALUATION SUBJECT:****BASE RAIL, TALON AND UNIVERSAL GLASS PIN GUARDRAIL SYSTEMS****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that the Base Rail, Talon and Universal Standoff Pin guardrail systems, described in ICC-ES evaluation report [ESR-4799](#), have also been evaluated for compliance with the Chicago Construction Codes (Title 14 of the Chicago Municipal Code) as noted below.

**Applicable code editions:**

- 2019 *Chicago Building Code* (Title 14B)

**2.0 CONCLUSIONS**

The Base Rail, Talon and Universal Standoff Pin guardrail systems, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4799](#), comply with Title 14B, and are subject to the conditions of use described in this supplement.

**3.0 CONDITIONS OF USE**

The Base Rail, Talon and Universal Standoff Pin guardrail systems described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4799](#).
- The design, installation, conditions of use and identification of the glass panels must be in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-4799](#).
- The Talon and Universal Standoff Pin guardrail systems are limited to interior use.
- The Talon and Universal Standoff Pin guardrail systems are limited to use in Group R-5 occupancies and within individual dwelling units as outlined in Exception 1 of CBC Title 14B Section 1607.8.1.
- The design, installation and inspection must be in accordance with additional requirements of Chapters 16 and 17 of Title 14B, as applicable.

This supplement expires concurrently with the evaluation report, issued December 2021.



**DIVISION: 05 00 00—METALS**

**Section: 05 52 00—Metal Railings**

**Section: 05 73 13—Glazed Decorative Metal Railings**

**DIVISION: 08 00 00—OPENINGS**

**Section: 08 81 00—Glass Glazing**

**Section: 08 88 00—Special Function Glazing**

**REPORT HOLDER:**

**IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)**

**EVALUATION SUBJECT:**

**BASE RAIL, TALON AND UNIVERSAL GLASS PIN GUARDRAIL SYSTEMS**

## 1.0 REPORT PURPOSE AND SCOPE

**Purpose:**

The purpose of this evaluation report supplement is to indicate that Base Rail, Talon and Universal Standoff Pin guardrail systems, described in ICC-ES evaluation report ESR-4799, have also been evaluated for compliance with the codes noted below.

**Applicable code edition(s):**

- 2019 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2019 *California Residential Code* (CRC)

## 2.0 CONCLUSIONS

### 2.1 CBC:

The Base Rail guardrail system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4799, complies with CBC Chapters 10 and 24, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 10, 16 and 24, as applicable.

**2.1.1 OSHPD:** The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

**2.1.2 DSA:** The applicable DSA Sections of the CBC are beyond the scope of this supplement.

### 2.2 CRC:

The Base Rail, Talon and Universal Standoff Pin guardrail systems, described in Sections 2.0 through 7.0 of the evaluation report ESR-4799, comply with CRC Chapter 3, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 3.

This supplement expires concurrently with the evaluation report, issued December 2021.

**DIVISION: 05 00 00—METALS**

Section: 05 52 00—Metal Railings

Section: 05 73 13—Glazed Decorative Metal Railings

**DIVISION: 08 00 00—OPENINGS**

Section: 08 81 00—Glass Glazing

Section: 08 88 00—Special Function Glazing

**REPORT HOLDER:**

IRON BALUSTER (DBA VIEWRAIL, DBA STAIRSUPPLIES)

**EVALUATION SUBJECT:**

BASE RAIL, TALON AND UNIVERSAL GLASS PIN GUARDRAIL SYSTEMS

**1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that the Base Rail, Talon and Universal Standoff Pin guardrail systems, described in ICC-ES evaluation report ESR-4799, have also been evaluated for compliance with the codes noted below.

**Applicable code editions:**

- 2020 *Florida Building Code—Building*
- 2020 *Florida Building Code—Residential*

**2.0 CONCLUSIONS**

The Base Rail, Talon and Universal Standoff Pin guardrail systems, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4799, comply with the 2020 *Florida Building Code—Building* and the 2020 *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-4799 for the 2018 *International Building Code*® and the 2018 *International Residential Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, with the following conditions:

1. The Talon and Universal Standoff Pin guardrail systems are limited to installations governed by the *Florida Building Code—Residential*.
2. The Talon and Universal Standoff Pin guardrail systems are limited to interior installations.

Use of the Base Rail, Talon and Universal Standoff Pin guardrail systems for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* or the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, issued December 2021.