

# ICC-ES Evaluation Report

**ESR-2444**

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**DIVISION: 07 00 00—THERMAL AND MOISTURE  
PROTECTION**
**Section: 07 40 00—Roofing and Siding Panels**
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**EVALUATION SUBJECT:**
**WEATHERLOCK II LAMINATED FOAM ROOF PANELS**
**1.0 EVALUATION SCOPE**
**Compliance with the following codes:**

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

**Properties evaluated:**

- Structural
- Fire resistance

**2.0 USES**

The Weatherlock II laminated foam roof panels described in this report are used as structural roof panels of patio covers complying with Appendix I of the IBC and Appendix H of the IRC.

**3.0 DESCRIPTION**
**3.1 General:**

The Weatherlock II laminated foam roof panels are factory-laminated sandwich panels consisting of either aluminum facing on both sides of a foam plastic core, or aluminum facing on the bottom face and oriented strand board (OSB) facing on the opposite face of a foam plastic core. The panels have nominal thicknesses of 3 inches (76 mm), 4.25 inches (108 mm), and 7 inches (178 mm), are 46.25 inches wide (1175 mm), and have a maximum length of 24 feet (7.32 m). The aluminum facers are formed into a tongue-and-groove configuration at the longitudinal edges. The OSB facers have square edges. The panels may be installed with optional aluminum splines.

The panels with aluminum facing on both faces have a Class B roof classification in accordance with ASTM E 108. In order to achieve a Class B roof classification, the maximum roof slope must not exceed 1:12 (8.3 percent).

**3.2 Materials:**

**3.2.1 Panel Core:** The core material is expanded polystyrene (EPS) foam plastic board complying with ASTM C 578 having a nominal density of either 1.0 pcf (16 kg/m<sup>3</sup>) or 1.5 pcf (24.0 kg/m<sup>3</sup>). The board is supplied by the manufacturer identified in the approved quality documentation. The foam plastic has a flame-spread index of 25 or less and a maximum smoke-developed index of 450 or less when tested in accordance with ASTM E 84, and is listed with an approved agency.

**3.2.2 Panel Facings:**

**3.2.2.1 Aluminum:** The aluminum facing material of the panels is 3105-H254 aluminum with a nominal thickness of 0.024 inch (0.61 mm) and a minimum base-metal thickness of 0.022 (0.56 mm). The minimum tensile ultimate and yield strengths of the panel facings are 23.5 ksi (162 MPa) and 19.5 ksi (134 MPa), respectively.

**3.2.2.2 OSB:** The oriented strand board (OSB) facer adhered to the foam plastic core is <sup>7</sup>/<sub>16</sub>-inch-thick (11.1 mm), Exposure 1 sheathing, 24/16 rated, complying with PS 2-92 and manufactured by an approved supplier noted in the approved quality documentation. The strength axis of the OSB board must be parallel to the panel's length. No splices are permitted on the OSB.

**3.2.3 Panel Adhesive:** The panel facings are factory-laminated to the panel core with an adhesive, described in the approved quality documentation that is a Type II, Class 2, adhesive complying with the ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05). The adhesive is recognized in a current ICC-ES evaluation report.

**3.2.4 Fasteners:** Fasteners used to attach the panels to underlying supports must be <sup>1</sup>/<sub>4</sub>-inch-diameter (6.4 mm) fasteners installed with a <sup>1</sup>/<sub>4</sub>-inch-outside-diameter (32 mm) corrosion-resistant steel washer.

**3.2.5 Splines:** The I-shaped aluminum splines are made from 0.080-inch-thick (2.0 mm) 6065-T6 or 6063-T6 aluminum having 3-inch-wide (76 mm) flanges and webs of various depths to match the appropriate roof panel thickness. See Figure 1 for a drawing of a typical aluminum spline or mullion.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Design:

For use in allowable stress design, the allowable uniform gravity downward (live or snow) and upward wind loads for the panels used as roof panels are as set forth in Tables 1 and 2. The tabulated loads are the allowable total transverse loads for the panels, which must be greater than the applied loads determined in accordance with the code, including the load combinations in IBC Section 1605. Use of the panels to resist any other load conditions (such as axial compression or tension forces due to horizontal wind loads, or use as a roof diaphragm to resist in-plane seismic or horizontal-wind loads) is outside the scope of this report.

### 4.2 Installation:

**4.2.1 General:** The panels must be installed as the roof of the patio cover with the panel length perpendicular to the supporting members and continuous in the direction of the roof slope, without transverse joints. The roof panel longitudinal seam must be located a minimum of 29.5 inches (749 mm) from the inside face of the wall parallel to the panel length. A thermal barrier as specified by the code is not required to be installed in the interior of the patio cover structure. Exposed edges of the foam core must be covered with aluminum fascia. The panels must be installed with a minimum roof slope as indicated in Footnote 4 of Tables 1 and 2. Supports at each end of the panel span must provide the panels and splines, as applicable, with a minimum 1-inch-wide (25.4 mm) continuous bearing width, to provide support for panels subjected to gravity loads, and upward and downward wind loads. As an alternative to restraining the panels subjected to wind uplift loads, the panels must be fastened in accordance with Footnote 3 of Tables 1 and 2 of this report. The installation details must be substantiated to the satisfaction of the code official.

**4.2.2 Installation with Splines:** Panels including aluminum splines, as described in Section 3.2.5 of this report, must be installed in accordance with Section 4.2.1 of this report and must be fastened to the flanges of the I-shaped spline on the exterior and interior side of the aluminum or OSB facings, using No. 8 stainless steel self-drilling screws spaced 12 inches (305 mm) on center.

**4.2.3 OSB and Aluminum Faced Panels:** Panels having OSB facing on the exterior side and aluminum facing on the interior side must be installed in accordance with Sections 4.2.1 and 4.2.2 of this report, as applicable. The OSB facer must be exposed to the exterior side. A roof covering, including roof underlayment, complying with Chapter 15 of the IBC or Chapter 9 of the IRC must be installed on the OSB side of the panels.

## 5.0 CONDITIONS OF USE

The Weatherlock II laminated foam roof panels described in this report comply 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 Panel fabrication, identification and installation must comply with this report and the manufacturer's published installation instructions. In the event of conflicts between this report and the manufacturer's published instructions, this report governs.
- 5.2 The panels are limited to use as roof panels of patio covers regulated under Appendix I of the IBC and Appendix H of the IRC.
- 5.3 Panel connections to the supporting structure must be designed in accordance with the applicable code.
- 5.4 The remaining portions of the structure must be designed and constructed in accordance with the applicable code.
- 5.5 Calculations and drawings demonstrating compliance with this report must be submitted to the code official for approval. The calculations and drawings must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.6 Justification must be submitted to the code official demonstrating that the OSB faced panels with the roof covering intended for each project comply as a Class A, B, or C roof assembly as required by IBC Sections 1505 and 2603.6, or IRC Section R902, with the classification complying with the minimum classification requirements for the building.
- 5.7 The roof panels are manufactured at 5005 Veterans Memorial Highway, Holbrook, New York, with inspections by CI Professional Services (AA-656).

## 6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Sandwich Panels (AC04), dated October 2009.
- 6.2 Data in accordance with the ICC-ES Acceptance Criteria for Foam Plastic Insulation (AC12), dated June 2009.

## 7.0 IDENTIFICATION

A label must be affixed to each panel and aluminum spline, bearing the company name (Four Seasons Solar Products), the evaluation report number (ESR-2444), and the name of the inspection agency (CI Professional Services).

TABLE 1—ALLOWABLE SPANS FOR ALUMINUM FACED PANELS

Allowable Span Table and Uplift Fastener Spacing <sup>1,2,5</sup>												
3.0 inch - 0.024" - 1.0pcf EPS - 0.024" - with Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	17'-9"		13'-10"									3/8" / foot
Wind (Upward)	19'-0"	16'-2"	14'-4"	13'-1"	12'-0"	10'-11"	9'-6"	8'-5"	7'-7"	6'-10"		n/a
Wind (Downward)	17'-9"	15'-5"	13'-10"	12'-8"	11'-8"	10'-4"	9'-1"	8'-1"	7'-3"	6'-8"		n/a
Snow			12'-8"	11'-4"	10'-5"	9'-8"	9'-1"	8'-7"	8'-1"	7'-9"		1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	11"	9"	7"	6"	6"	5"	5"	5"	5"		
3.0 inch - 0.024" - 1.0pcf EPS - 0.024" - without Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	16'-0"		12'-2"									3/8" / foot
Wind (Upward)	17'-0"	14'-4"	12'-7"	11'-4"	9'-5"	8'-0"	7'-0"	6'-2"	5'-7"	5'-1"		n/a
Wind (Downward)	16'-0"	13'-8"	12'-2"	10'-8"	8'-11"	7'-8"	6'-9"	6'-0"	5'-5"	4'-11"		n/a
Snow			11'-0"	9'-11"	9'-1"	8'-5"	7'-10"	7'-2"	6'-6"	5'-11"		1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	12"	10"	8"	8"	7"	7"	6"	6"	6"		
3.0 inch - 0.024" - 1.5pcf EPS - 0.024" - with Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	17'-6"		13'-11"									3/8" / foot
Wind (Upward)	18'-11"	16'-2"	14'-5"	13'-3"	12'-4"	11'-7"	11'-0"	10'-5"	10'-0"	9'-4"		n/a
Wind (Downward)	17'-6"	15'-4"	13'-11"	12'-10"	12'-0"	11'-4"	10'-9"	10'-3"	9'-10"	9'-0"		n/a
Snow			13'-4"	12'-4"	11'-6"	10'-11"	10'-4"	9'-11"	9'-6"	9'-2"		1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	11"	9"	7"	6"	5"	5"	4"	4"	4"		
3.0 inch - 0.024" - 1.5pcf EPS - 0.024" - without Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	16'-4"		12'-9"									3/8" / foot
Wind (Upward)	17'-5"	14'-10"	13'-2"	12'-0"	11'-2"	10'-5"	9'-10"	9'-1"	8'-2"	7'-5"		n/a
Wind (Downward)	16'-4"	14'-2"	12'-9"	11'-9"	10'-11"	10'-3"	9'-8"	8'-9"	7'-10"	7'-2"		n/a
Snow			12'-3"	11'-3"	10'-6"	9'-11"	9'-4"	8'-11"	8'-6"	8'-2"		1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	11"	9"	8"	7"	6"	5"	5"	5"	5"		
4.25 inch - 0.024" - 1.0pcf EPS - 0.024" - with Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	20'-0"		15'-11"									1/4" / foot
Wind (Upward)	20'-0"	19'-7"	16'-10"	15'-0"	13'-7"	12'-7"	11'-9"	11'-1"	10'-6"	9'-6"		n/a
Wind (Downward)	20'-0"	18'-3"	15'-11"	14'-4"	13'-2"	12'-3"	11'-5"	10'-10"	10'-0"	9'-2"		n/a
Snow			14'-3"	12'-10"	11'-9"	10'-11"	10'-3"	9'-8"	9'-2"	8'-9"		3/8" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	9"	8"	6"	6"	5"	5"	4"	4"	4"		
4.25 inch - 0.024" - 1.0pcf EPS - 0.024" - without Mullions												
Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>	
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf		
Live	20'-0"		14'-6"									1/4" / foot
Wind (Upward)	20'-0"	17'-6"	15'-1"	13'-5"	12'-3"	10'-8"	9'-4"	8'-3"	7'-5"	6'-9"		n/a
Wind (Downward)	20'-0"	16'-7"	14'-6"	13'-0"	11'-10"	10'-2"	8'-11"	7'-11"	7'-2"	6'-6"		n/a
Snow			12'-11"	11'-8"	10'-8"	9'-11"	9'-3"	8'-9"	8'-4"	7'-10"		3/8" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	10"	8"	7"	6"	6"	6"	5"	5"	5"		

TABLE 1—ALLOWABLE SPANS FOR ALUMINUM FACED PANELS (Continued)

Allowable Span Table and Uplift Fastener Spacing <sup>1,2,5</sup>											
4.25 inch - 0.024" - 1.5pcf EPS - 0.024" - with Mullions											
Loading Type	Applied Pressure for Design										
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
Live	21'-11"		17'-4"								3/8" / foot
Wind (Upward)	23'-0"	20'-4"	18'-2"	16'-7"	15'-5"	14'-5"	13'-5"	12'-8"	12'-0"	11'-5"	n/a
Wind (Downward)	21'-11"	19'-2"	17'-4"	16'-0"	15'-0"	13'-11"	13'-1"	12'-4"	11'-9"	11'-2"	n/a
Snow			16'-3"	14'-7"	13'-5"	12'-5"	11'-8"	11'-0"	10'-6"	10'-0"	1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	9"	7"	6"	5"	5"	4"	4"	4"	3"	
4.25 inch - 0.024" - 1.5pcf EPS - 0.024" - without Mullions											
Loading Type	Applied Pressure for Design										
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
Live	20'-4"		16'-0"								3/8" / foot
Wind (Upward)	21'-10"	18'-7"	16'-7"	15'-2"	14'-1"	13'-0"	12'-2"	11'-5"	10'-8"	9'-8"	n/a
Wind (Downward)	20'-4"	17'-9"	16'-0"	14'-8"	13'-8"	12'-8"	11'-10"	11'-2"	10'-3"	9'-4"	n/a
Snow			14'-9"	13'-4"	12'-2"	11'-4"	10'-7"	10'-0"	9'-6"	9'-1"	1/2" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	8"	6"	5"	4"	4"	3"	3"	3"	3"	
7 inch - 0.024" - 1.5pcf EPS - 0.024" - with Mullions											
Loading Type	Applied Pressure for Design										
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
Live	23'-0"		23'-0"								1/4" / foot
Wind (Upward)	23'-0"	23'-0"	23'-0"	22'-3"	20'-3"	18'-8"	17'-5"	16'-5"	15'-7"	14'-10"	n/a
Wind (Downward)	23'-0"	23'-0"	23'-0"	20'-11"	19'-3"	17'-10"	16'-9"	15'-10"	15'-1"	14'-5"	n/a
Snow			20'-9"	18'-9"	17'-2"	16'-0"	15'-0"	14'-2"	13'-6"	12'-10"	3/8" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	8"	6"	5"	4"	4"	3"	3"	3"	3"	
7 inch - 0.024" - 1.5pcf EPS - 0.024" - without Mullions											
Loading Type	Applied Pressure for Design										
	10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
Live	23'-0"		20'-3"								1/4" / foot
Wind (Upward)	23'-0"	23'-0"	21'-6"	19'-2"	17'-5"	16'-1"	15'-0"	14'-1"	13'-5"	12'-9"	n/a
Wind (Downward)	23'-0"	23'-0"	20'-3"	18'-3"	16'-8"	15'-6"	14'-7"	13'-9"	13'-1"	12'-6"	n/a
Snow			18'-1"	16'-3"	14'-11"	13'-10"	13'-0"	12'-3"	11'-8"	11'-2"	3/8" / foot
Fastener Spacing <sup>(3)</sup> for Uplift Wind Loads	12"	8"	6"	5"	5"	4"	4"	4"	3"	3"	

Notes:

(1) - Roof Panels are intended for use with a Patio Enclosure as defined in Appendix Chapter I of the 2006 International Building and Appendix Chapter H of the 2006 International Residential Code.

- All superimposed loads presented above are uniform in nature. The spans are based on simply-supported single span installations. Consideration shall be given to non-uniform loads such as those associated with snow build-up and areas of discontinuity for wind loads.

- Unless otherwise noted, the maximum eave projection of the roof system is 24-inches.

(2) Panel Spans are based on a maximum temperature differential between the two panel skins of 10 degrees fahrenheit.

(3) Fasteners shall be #14 sheet metal screws with 1.25" diameter plate washer. Length of fastener shall be at least 1 inch longer than laminated roof panel thickness.

(4) Minimum panel slopes are based on panel deflection only. Increased slopes will be required where panel accessories, such as mullions or flashing, can increase ponding caused by irregularities in the water flow path.

(5) The tabulated spans are also applicable to roof panel's subject to the roof maintenance concentrated live load specified in IBC Table 1607.1.

TABLE 2—ALLOWABLE SPANS FOR OSB AND ALUMINUM FACED PANELS

Allowable Span Table and Uplift Fastener Spacing <sup>(1)(2)</sup>												
4.25 inch - 0.024" - 1.0pcf EPS - 7/16" OSB - with Mullions												
	Loading Type	Applied Pressure for Design										Minimum Panel Slope (Per Foot of Projection) <sup>(4)</sup>
		10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
5 psf Additional Dead Load Added <sup>(5)</sup>	Live	15'-0"		15'-0"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	15'-0"	15'-0"	14'-5"	13'-3"	12'-4"	11'-8"	11'-0"	10'-6"	n/a
	Wind (Downward)	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	14'-4"	13'-7"	12'-10"	12'-3"	11'-9"	n/a
	Snow			15'-0"	15'-0"	14'-7"	13'-9"	13'-0"	12'-4"	11'-9"	11'-3"	3/8" / foot
10 psf Additional Dead Load Added <sup>(5)</sup>	Live	15'-0"		15'-0"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	15'-0"	15'-0"	14'-5"	13'-3"	12'-4"	11'-8"	11'-0"	10'-6"	n/a
	Wind (Downward)	15'-0"	15'-0"	15'-0"	15'-0"	14'-4"	13'-7"	12'-10"	12'-3"	11'-9"	10'-11"	n/a
	Snow			15'-0"	14'-7"	13'-9"	13'-0"	12'-4"	11'-9"	11'-3"	10'-10"	3/8" / foot
15 psf Additional Dead Load Added <sup>(5)</sup>	Live	15'-0"		15'-0"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	15'-0"	15'-0"	14'-5"	13'-3"	12'-4"	11'-8"	11'-0"	10'-6"	n/a
	Wind (Downward)	15'-0"	15'-0"	15'-0"	14'-4"	13'-7"	12'-10"	12'-3"	11'-9"	10'-11"	10'-2"	n/a
	Snow			14'-7"	13'-9"	13'-0"	12'-4"	11'-9"	11'-3"	10'-10"	10'-5"	3/8" / foot
	Fastener Spacing <sup>(3)</sup> for Upward Wind Loads	12"	12"	12"	9"	8"	7"	6"	6"	5"	5"	
4.25 inch - 0.024" - 1.0pcf EPS - 7/16" OSB - without Mullions												
	Loading Type	Applied Pressure for Design										
		10 psf	15 psf	20 psf	25 psf	30 psf	35 psf	40 psf	45 psf	50 psf	55 psf	
5 psf Additional Dead Load Added <sup>(5)</sup>	Live	15'-0"		13'-10"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	14'-8"	13'-0"	11'-10"	10'-11"	9'-11"	8'-9"	7'-10"	7'-1"	n/a
	Wind (Downward)	15'-0"	15'-0"	13'-10"	12'-9"	11'-11"	11'-2"	10'-6"	9'-10"	9'-0"	8'-3"	n/a
	Snow			13'-4"	12'-4"	11'-6"	10'-9"	10'-2"	9'-8"	9'-2"	8'-9"	3/8" / foot
10 psf Additional Dead Load Added <sup>(5)</sup>	Live	15'-0"		12'-9"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	14'-8"	13'-0"	11'-10"	10'-11"	9'-11"	8'-9"	7'-10"	7'-1"	n/a
	Wind (Downward)	15'-0"	13'-10"	12'-9"	11'-11"	11'-2"	10'-6"	9'-10"	9'-0"	8'-3"	7'-8"	n/a
	Snow			12'-4"	11'-6"	10'-9"	10'-2"	9'-8"	9'-2"	8'-9"	8'-4"	3/8" / foot
15 psf Additional Dead Load Added <sup>(6)</sup>	Live	13'-10"		11'-11"								1/4" / foot
	Wind (Upward)	15'-0"	15'-0"	14'-8"	13'-0"	11'-10"	10'-11"	9'-11"	8'-9"	7'-10"	7'-1"	n/a
	Wind (Downward)	13'-10"	12'-9"	11'-11"	11'-2"	10'-6"	9'-10"	9'-0"	8'-3"	7'-8"	7'-1"	n/a
	Snow			11'-6"	10'-9"	10'-2"	9'-8"	9'-2"	8'-9"	8'-4"	8'-0"	3/8" / foot
	Fastener Spacing <sup>(3)</sup> for Upward Wind Loads	12"	12"	12"	10"	9"	8"	7"	7"	7"	6"	

Notes:

(1) - Roof Panels are intended for use with a Patio Enclosure as defined in Appendix Chapter I of the 2006 International Building and Appendix Chapter H of the 2006 International Residential Code.

- All superimposed loads presented above are uniform in nature. The spans are based on simply-supported single span installations. Consideration shall be given to non-uniform loads such as those associated with snow build-up and areas of discontinuity for wind loads.

- Unless otherwise noted, the maximum eave projection of the roof system is 24-inches.

(2) Panel Spans are based on a maximum temperature differential between the two panel skins of 10 degrees fahrenheit.

(3) Fasteners shall be #14 sheet metal screws with 1.25" diameter plate washer. Length of fastener shall be at least 1 inch longer than laminated roof panel thickness.

(4) Minimum panel slopes are based on panel deflection only. Increased slopes will be required where panel accessories, such as mullions or flashing, can increase ponding caused by irregularities in the water flow path.

(5) When panels are subject to maintenance loads (as defined in the IBC), maximum span shall be limited to 15'-0" or that indicated in the span table, whichever is less.

(6) When panels are subject to maintenance loads (as defined in the IBC), maximum span shall be limited to 13'-9" or that indicated in the span table, whichever is less.

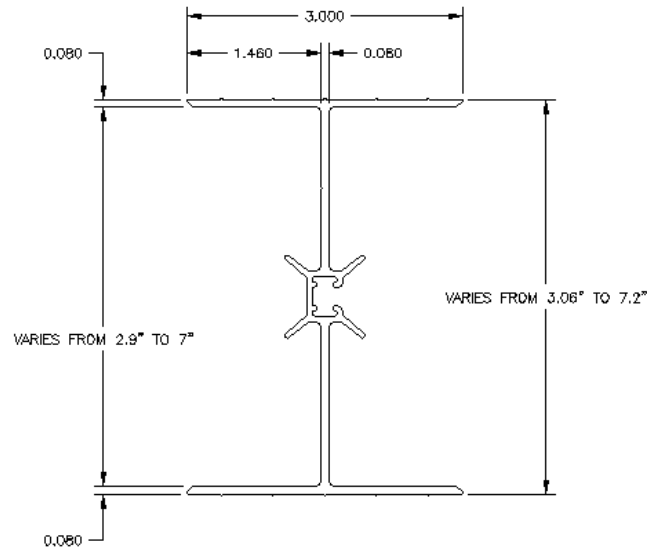


FIGURE 1—I-SHAPED SPLINE