

ICC-ES Evaluation Report

ESR-4734

Issued November 2024

This report also contains:

[CA Supplement w/DSA and OSHPD](#)

Subject to renewal November 2025

[FL Supplement](#)

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DIVISION: 07 00 00— THERMAL AND MOISTURE PROTECTION Section: 07 41 13— Metal Roof Panels	REPORT HOLDER: INNOVATIVE METALS COMPANY INC.	EVALUATION SUBJECT: METAL ROOF PANELS	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2024, 2021 and 2018 [International Building Code® \(IBC\)](#)
- 2024, 2021 and 2018 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Weather resistance
- Structural
- Wind uplift resistance

1.2 Evaluation of the following green code:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11

Attributes verified:

See Section 3.1

2.0 USES

The metal roof panels are used as roof coverings over solid or closely fitted decking.

3.0 DESCRIPTION

3.1 General:

The metal roof panels are cold-formed from steel and/or aluminum conforming to the product specifications, galvalume or zinc coatings, and base-metal thicknesses noted in [Table 2](#). The clips used to attach the panels to the supporting roof structure are made material conforming to the product specifications and base metal thicknesses noted in [Table 3](#). See [Figures 1, 2, 3](#) and [4](#) for panel and clip details.

The attributes of the metal roofing panels have been verified as conforming to the provisions of CALGreen Section A5.406.1.2 for reduced maintenance. Note that decisions on compliance with those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Deck Material:

Solid or closely fitted decking must be a minimum of ¹⁵/₃₂-inch-thick (11.9 mm) plywood or lumber sheathing complying with IBC Section 2304.8.2 or IRC Section R803, or minimum No. 22 gauge [0.030 inch thick (0.76 mm)] steel complying with IBC Section 2210.1.1.2.

3.3 Underlayment and Flashing:

Underlayment must be in accordance with IBC Section 1507.4.5 or IRC Section R905.10.5, as applicable. Flashing must be in accordance with IBC Section 1503.2 or IRC Section R903.2, as applicable.

4.0 DESIGN AND INSTALLATION

4.1 Installation:

Installation of the roof panels and panel clips must be in accordance with this report, IBC Section 1507.4 or IRC Section R905.10, and the manufacturer's published installation instructions. The manufacturer's installation instructions must be available at the jobsite at all times during installation.

The panels must be installed on roofs with a minimum slope of 2:12 (17-percent slope). Penetrations and terminations of the panels must be flashed and made weathertight in accordance with the manufacturer's published installation instructions and IBC Section 1503.2 or IRC Section R903.2, as applicable.

4.2 Live Loads:

When panels are installed over solid or closely fitted deck sheathing, the capacity is limited to the capacity of the sheathing.

4.3 Wind Uplift Resistance:

The allowable wind uplift pressures of the panels are provided in [Table 4](#).

5.0 CONDITIONS OF USE:

The Innovative Metals Company metal 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 Installation must comply with the applicable code, this report and the manufacturer's published installation instructions. In the event of conflict between this report and the manufacturer's instructions, this report governs.
- 5.2 The metal panels must be installed only by applicators approved by Innovative Metals Company/Merchant & Evans.
- 5.3 Design wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind pressure for the system installed in that particular area. Refer to the allowable wind uplift pressure for the metal panels as listed in [Table 4](#).
- 5.4 The allowable wind uplift pressures listed in [Table 4](#) are for the roof covering only. The deck and framing to which the roof covering is attached must be designed for the applicable components and cladding wind loads in accordance with the IBC or IRC, as applicable.
- 5.5 Calculations demonstrating that the required wind resistance is less than the allowable wind resistance must be submitted to the code official.
- 5.6 See [Table 1](#) for panel manufacturing location. The manufacturing is under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the [ICC-ES Acceptance Criteria for Metal Roof Coverings \(AC166\)](#), dated February 2021(editorially revised June 2024).

7.0 IDENTIFICATION

- 7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4734) along with the name, registered trademark, or registered logo of the report holder (Innovative Metals Company Inc.) must be included in the product label.
- 7.2 In addition, the panels are identified with a label bearing the product name, the material type, the manufacturer's name (Innovative Metals Company), and the evaluation report number (ESR-4734).
- 7.3 The report holder's contact information is the following:

INNOVATIVE METALS COMPANY INC.
4648 OLD PEACHTREE ROAD
NORCROSS, GEORGIA 30071
(770) 908-1030
www.imetco.com

TABLE 1—MANUFACTURING FACILITIES

MANUFACTURING FACILITY
Innovative Metals Company 4648 Peachtree Rd Norcross, Georgia 30071
Innovative Metals Company 308 Connecticut Dr. Burlington Township, New Jersey 08016
Innovative Metals Company 5001 Bailey Look McCellan, CA 95652

TABLE 2—METAL ROOF PANEL SPECIFICATIONS

PANEL	MATERIAL			MIN. BASE METAL THICKNESS (inch)
	Specification	Classification	Coating	
12", 16", 18" and 20" Zip Rib	ASTM A792	SS Grade 50	AZ55	0.0223 (24 gauge) 0.0296 (22 gauge)
	ASTM B209	3004	N/A	0.032
12", 16" and 18" Twin Lok 2.0	ASTM A792	SS Grade 50	AZ55	0.0359 (20 gauge)
	ASTM B209	3004	N/A	0.040
16" Twin Lok 1.5	ASTM A792	SS Grade 50	AZ55	0.0359 (20 gauge)
22" Batten Tite (Formed Batten and Batten-Tite Pan)	ASTM A240	Type 304	None	0.0296 (22 gauge)

For SI: 1 inch = 25.4 mm.

TABLE 3—METAL ROOF PANEL CLIP SPECIFICATIONS

PANEL	CLIP	MATERIAL			MIN. BASE STEEL THICKNESS (inch)
		Specification	Classification	Coating	
Zip Rib	2080-E base 2080-E hook	Base-Galvanized Steel Hook-Stainless Steel	ASTM A792 ASTM A240	AZ55 Type 304	0.047 (18 gauge) 0.0359 (20 gauge)
	2002 Gable	ASTM B209	6063-T5	N/A	1/8" extruded Aluminum
Twin Lok 1.5 and 2.0	Top Clip Base	Galvanized steel Stainless steel	AST A792 ASTM A240	AZ55 Type 304	22 ga. 16 ga.
Batten Tite	Batten Clip, Base Channel, Internal Gutter	ASTM B209	6063-T5	None	1/8" extruded Aluminum

For SI: 1 inch = 25.4 mm.

TABLE 4—ALLOWABLE WIND UPLIFT PRESSURES

ROOF PANEL	ROOF PANEL SIZE AND METAL TYPE AND THICKNESS	SUPPORTING MEMBER	FASTENING PATTERN ¹	SPAN ² (inch)	ALLOWABLE UPLIFT PRESSURE (psf)
ZIP RIB	18"x2.5" (0.032" Aluminum)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	24	27.5
	12" x 2.5" (0.040" Aluminum)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	24	52.5
	12" x 2.5" (0.040" Aluminum)	Min. 36 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	18 corner 24 field	52.5 52.5
	12" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	12	172
	12" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws Additional 22 gage steel seam reinforcement placed over standing seam and connected using 3/16-inch diameter rivets at 12 inches on center	12	110
	12" x 2.5" (0.040" aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	60	47.5
	12" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws Additional 22 gage steel seam reinforcement placed over standing seam and connected using 3/16-inch diameter rivets at 12 inches on center	72	50
	16" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	72	30
	16" x 2.5" (0.040" Aluminum)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	12 48	55 37.5
	18" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	60	37
	18" x 2.5" (0.040" Aluminum)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	72	25.5
	20" x 2.5" (0.040" Aluminum)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	60	22.5
	12" x 2.5 (22 gauge steel)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws Additional 22 gage steel seam reinforcement placed over standing seam and connected using 3/16-inch diameter rivets at 12 inches on center	72	60
	12" x 2.5 (22 gauge steel)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws Additional 22 gage steel seam reinforcement placed over standing seam and connected using 3/16-inch diameter rivets at 12 inches on center	12	130
	12" x 2.5 (22 gauge steel)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	12	165
	18" x 2.5" (24 gauge steel)	15/32" Plywood	2080 Sliding Hook Panel Clips with (3) Dekfast #14 self drilling screws	24	42.5
	18" x 2.5" (24 gauge steel)	Min. 36 mil thick Steel Deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	24 ⁴ 48	45 27.5
	18" x 2.5" (24 gauge steel)	Min. 12 ga.(97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	72	22.5

TABLE 4—ALLOWABLE WIND UPLIFT PRESSURES (CONTINUED)

ROOF PANEL	ROOF PANEL SIZE AND METAL TYPE AND THICKNESS	SUPPORTING MEMBER	FASTENING PATTERN ¹	SPAN ² (inch)	ALLOWABLE UPLIFT PRESSURE (psf)
ZIP RIB	16" x 2.5" (24 gauge steel)	Min. 16 ga. (54 mils) thick steel purlins	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	60	52.5
	16" x 2.5" (22 gauge steel)	5/8-inch thick plywood	2080 Sliding Hook Panel Clips with (3) Dekfast #14 self drilling screws	24	99
	16" x 2.5" (22 gauge steel)	Min. 12 ga. (97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	12	54
	16" x 2.5" (22 gauge steel)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	48	47.5
	18"x2.5" (22 gauge steel)	Min. 30 mil thick steel deck	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	48	37.5
TWIN LOK 2.0	16" x 2" (20 gauge steel)	Min. 16 gage (54 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #12 self drilling screws	24	55
	16 5/8" x 2" (0.040 aluminum)	Min. 14 gage (68 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #12 self drilling screws	36	63
	16 5/8" x 2" (0.040 aluminum)	Min. 14 gage (68 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #12 self drilling screws	12	133
TWIN LOK 1.5	16" X 1.5" (20 gauge steel)	Min. 12 gage. (97 mils) thick steel studs	2080 Sliding Hook Panel Clips with (2) Dekfast #14 self drilling screws	48	60
BATTEN TITE	22" (22 gauge stainless steel)	Min. 12 ga. (97 mils) thick steel studs	Attach extruded base member to steel studs using two (2) No. 12 Dekfast screws	48	34

For SI: 1 inch = 25.4 mm, 1 psf = 0.0479 kPa.

¹Fastener must be of sufficient length to penetrate through the supporting member a minimum of 3/4 inch.

²Span indicates fastener or clip spacing along panel length attached to supporting member.

³Spaced support must have a minimum bearing width of 2½ inches (63.5 mm).

⁴ 24 ga. steel seam reinforcement trim must be snap-fit and mechanically seamed to the roof panel standing seams.

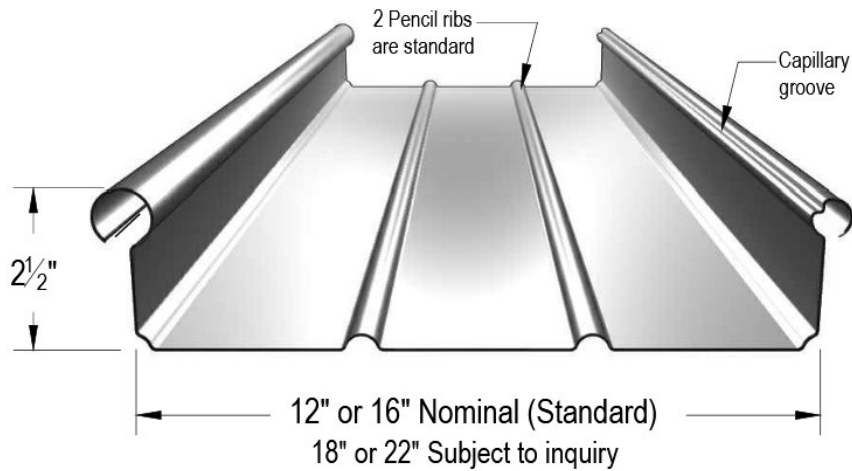


FIGURE 1- ZIP RIB PANELS



FIGURE 2- ZIP RIB PANEL CLIPS

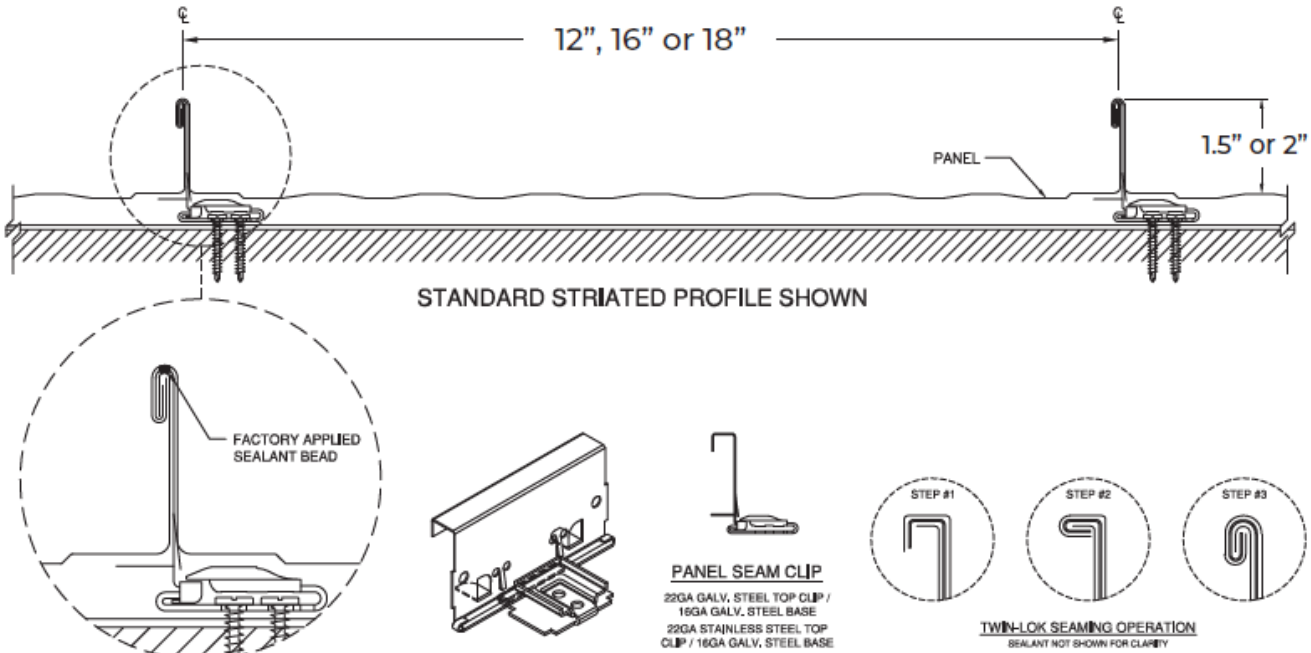


FIGURE 3- TWINLOK 1.5 and 2.0

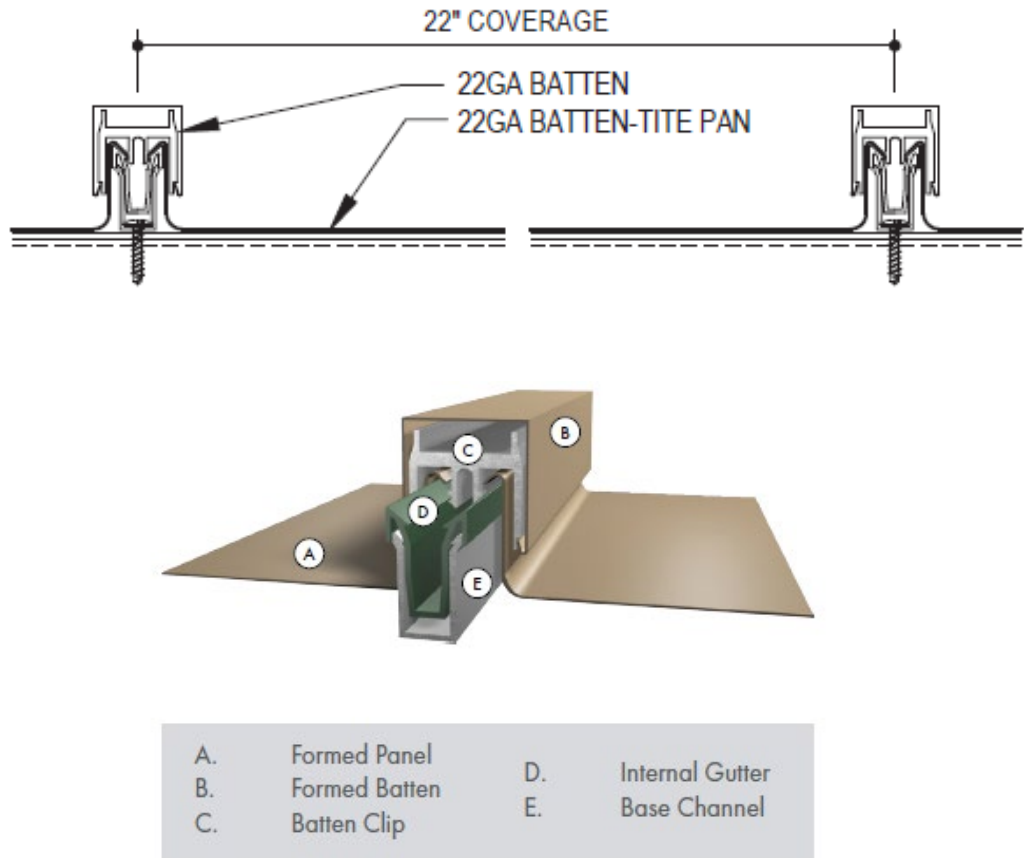


FIGURE 4—BATTEN-TITE

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 41 13—Metal Roof Panels

REPORT HOLDER:

INNOVATIVE METALS COMPANY INC.

EVALUATION SUBJECT:

METAL ROOF PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the metal roof panels, described in ICC-ES evaluation report ESR-4734, have also been evaluated for compliance with the codes noted below.

Applicable code edition(s):

- 2022 California Building Code (CBC)

For evaluation of applicable chapters adopted by the [California Office of Statewide Health Planning and Development \(OSHPD\) AKA: California Department of Health Care Access and Information \(HCAI\) and the Division of State Architects \(DSA\)](#), see Sections 2.1.1 and 2.1.2 below.

- 2022 California Residential Code (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The metal roof panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-4734, comply with CBC Chapter 15, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 15 and 16, as applicable.

2.1.1 OSHPD:

The metal roof panels described in Sections 2.0 through 7.0 of the evaluation report ESR-4734 comply with CBC Chapter 15 with applicable amendments [OSHPD 1, 1R, 2, 3, 4 and 5], provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements in CBC Chapters 16 and 16A, as applicable.

2.1.2 DSA:

The metal roof panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-4734, comply with CBC Chapter 15 with applicable amendments [DSA-SS, DSA-SS/CC], provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements in CBC Chapters 16 and 16A, as applicable.

2.2 CRC:

The metal roof panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-4734, comply with CRC Chapter 9, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Chapter 9.

This supplement expires concurrently with the evaluation report, issued November 2024.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 41 13—Metal Roof Panels

REPORT HOLDER:**INNOVATIVE METALS COMPANY INC.****EVALUATION SUBJECT:****METAL ROOF PANELS****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that metal roof panels, described in ICC-ES evaluation report ESR-4734, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 *Florida Building Code—Building*
- 2023 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The metal roof panels, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4734, comply with the *Florida Building Code—Building* and the *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-4734 for the 2021 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, with the following conditions:

1. Flashing must be in accordance with Section 1503.2 of the *Florida Building Code—Building* or Section R903.2 of the *Florida Building Code—Residential*, as applicable.
2. Gutters and roof downspouts must be installed in accordance with Section 1503.7 of the *Florida Building Code—Building* or Section R903.4.2 of the *Florida Building Code—Residential*, as applicable.
3. Fasteners must be in accordance with Section 1506.5, 1506.6 or 1506.7, as applicable of the *Florida Building Code—Building* or Section R904.5 of the *Florida Building Code—Residential*, as applicable.
4. Underlayment and underlayment installation must be in accordance with Section 1507.1.1 of the *Florida Building Code—Building* or Section R905.1.1 of the *Florida Building Code—Residential*, as applicable.

Use of the metal roof panels 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 issue November 2024.