ICC-ES Evaluation Report

ESR-4343

Reissued October 2026

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION Section: 07 41 13—Metal Roof Panels	REPORT HOLDER: ISAIAH INDUSTRIES, INC.	EVALUATION SUBJECT: UNIVERSAL STANDING SEAM STEEL ROOF PANELS	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024[†], 2021, 2018 and 2015 *International Building Code®* (IBC)
- 2024[†], 2021, 2018 and 2015 *International Residential Code®* (IRC)

[†]The evaluation report references the appropriate sections of the 2024 IBC and IRC. For applicable sections under other code editions, see Table 3.

Properties evaluated:

- Fire classification
- Wind uplift resistance

2.0 USES

Universal Standing Seam steel roof panels are used as roof coverings and are recognized for use as Class A roof coverings when installed in accordance with this report.

3.0 DESCRIPTION

3.1 General:

Universal Standing Seam steel roof panels are available in preformed standing seam profiles produced from steel sheet. Materials used in panel fabrication conform to the following specifications:

Galvanized Steel: ASTM A653 CS Type B G90; minimum GSG No. 26 gauge [0.019-inch-thick (0.48 mm) Base Metal Thickness]; F_y = minimum 44.9 ksi

The steel panel profiles are as follows:

3.1.1 501: Formed to 12-inch-inch-wide (305 mm) panels, with $1^1/_2$-inch-high (38.1 mm) snap locking seams. See Figure 1.

3.1.2 511: Formed to 16-inch-inch-wide (406 mm) panels, with $1^1/_2$-inch-high (38.1 mm) snap locking seams. See Figure 2.

3.2 Roof Deck:

Solid or closely fitted decking must be minimum $^{15}/_{32}$-inch-thick (11.9 mm) plywood or lumber sheathing, or non-veneer APA rated minimum $^7/_{16}$-inch-thick (11.1 mm) oriented-strand board (OSB) complying with 2024 IBC Section 2304.8.2 or 2024 IRC Section R803, or minimum No. 22 gauge [0.030 inch thick (0.76 mm)] steel complying with 2024 IBC Section 2208.

3.3 Underlayment and Flashing:

Underlayment must be in accordance with 2024 IBC Sections 1507.1.1 and 1507.4.5, or 2024 IRC Sections R905.1.1 and R905.10.6, as applicable. Flashing must be in accordance with 2024 IBC Section 1503.2 or 2024 IRC Section R903.2, as applicable.

3.4 Insulation:

Foam plastic insulation, where used, must have a flame-spread index of not more than 75 in accordance with ASTM E84 or UL 723 when tested at the maximum thickness intended for use. Polyisocyanurate and polystyrene foam plastic insulation must comply with ASTM C1289 and ASTM C578, respectively. See Tables 1 and 2 for insulations used with specific roof systems.

3.5 Fasteners:

Fasteners required for the attachment of steel roof panels to the sheathing must be No. 10-12 by 1¼-inch-long corrosion-resistant pan head screws and be as specified in the wind resistance table (Table 2) for the specific assemblies.

4.0 DESIGN AND INSTALLATION

4.1 General:

Installation of the Universal Standing Seam steel roof panels must be in accordance with this report, 2024 IBC Section 1507.4 or 2024 IRC Section R905.10, as applicable, and the report holder's published installation instructions. The report holder's installation instructions must be available on the jobsite at all times during installation.

The roof panels must be installed on solid or closely fitted wood sheathing decking or steel decking, as specified in Section 3.2 at a minimum roof slope of 2:12 (17-percent slope). Penetrations and terminations of the panels must be flashed and made weathertight in accordance with the report holder's published installation instructions and 2024 IBC Section 1503.2 or 2024 IRC Section R903.2, as applicable. Reroofing, after removal of the existing roof covering materials, must be in accordance with 2024 IBC Section 1512 or 2024 IRC Section R908, as applicable.

4.2 Fire Classification:

The steel roof panels are components of roof assemblies classified as Class A roof assemblies in accordance with ASTM E108 or UL 790 when installed as specified in Table 1.

Under the IBC and IRC, steel roof panels are considered Class A roof coverings, when installed, without insulation, as described in Section 4.1 of this report on steel roof decks in accordance with Exception 2 to 2024 IBC Section 1505.2 and Exception 2 to 2024 IRC Section R902.1.

4.3 Wind Uplift Resistance:

The allowable wind uplift pressures for Universal Standing Seam steel roof panels are specified in Table 2.

4.4 Live Loads:

The Universal Standing Seam steel roof panels, when installed over solid or closely fitted decking in accordance with Sections 3.2 and 4.1 of this report, are capable of withstanding the minimum uniform distributed live load of 20 psf (0.958 kPa) and minimum concentrated live load of 300 lbs (1.33 kN) noted in 2024 IBC Table 1607.1.

5.0 CONDITIONS OF USE:

The Universal Standing Seam steel 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 report holder's published installation instructions. In the event of conflicts between this report and the report holder's instructions, this report governs.

5.2 The steel panels must be installed only by applicators approved by Isaiah Industries, Inc.

5.3 Foam plastic insulation must be separated from the interior of the building by an approved thermal barrier in accordance with 2024 IBC Section 2603.4.1.5 or 2024 IRC Section R316.4, as applicable.

5.4 Foam plastic insulation, where used, must bear the label of an approved agency indicating that the foam plastic has a flame-spread index of not more than 75 when tested at the maximum thickness intended for use in accordance with ASTM E84 or UL 723, subject to the approval of the code official.

5.5 Above-deck thermal insulation must comply with the applicable standard specified in 2024 IBC Table 1508.2 or 2024 IRC Table R906.2, as applicable.

5.6 Design wind uplift pressure on any roof area, including edge and corner zones, must not exceed the allowable wind pressure for the system. Refer to the allowable wind uplift pressure for the metal panels as specified in Table 2.

5.7 The allowable wind uplift pressures specified in Table 2 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.

5.8 Calculations demonstrating that the required wind resistance is less than the allowable wind resistance must be submitted to the code official.

5.9 The panels are manufactured in Piqua, Ohio, 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 panels are identified with a label bearing the report holder's name (Isaiah Industries, Inc.), the product name, the material type, and the evaluation report number (ESR-4343).

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

ISAIAH INDURSTIES, INC.
8510 INDUSTRY PARK DRIVE
PIQUA, OHIO 45356
(937) 773-9840
www.isaiahindustries.com

TABLE 1—FIRE CLASSIFICATION ASSEMBLIES

SYSTEM NO.	ROOF CLASS	SUBSTRATE[1]	MAX. ROOF SLOPE	ASSEMBLY DETAIL	
1	A	Combustible	Unlimited	[2,3]Barrier Board:	Georgia-Pacific DensDeck® Roofboard minimum 1/2 in. thick with all joints staggered a minimum of 6 inches from the joints in the plywood or OSB roof deck.
				[4]Underlayment:	ASTM D226 Type II or ASTM D4869 Type IV, mechanically attached
				Panel:	Universal Standing Seam steel roof panels 501 or 511, mechanically fastened.

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

[1]Wood deck must be a minimum of 15/32-inch-thick (11.9 mm) plywood or non-veneer APA-rated 7/16-inch-thick (11.1 mm) oriented-strand board (OSB). Steel deck must be a minimum of No. 22 gauge galvanized steel [0.030 inch (0.76 mm)].
[2]Barrier board must be UL-classified for roofing systems.
[3]For System No. 1, one or more layers of GAF "VersaShield® Fire Resistant Roof Deck Protection" or "VersaShield™ Underlayment" (ESR-2053), mechanically attached or loose laid, may be used in lieu of barrier board when installed directly underneath the metal panels.
[4]The roof underlayment may be any roofing underlayment recognized for use with classified roof coverings in a current ICC-ES evaluation report as complying with the ICC-ES Acceptance Criteria for Roof Underlayments (AC188).

TABLE 2—WIND RESISTANCE ASSEMBLIES

SYSTEM NO.	DECK[1]	INSULATION[2]	BARRIER BOARD[3]	UNDER-LAYMENT	PANEL		ALLOWABLE UPLIFT PRESSURE (psf)
					TYPE	ATTACHMENT[4,5]	
W-1	1/2-inch Plywood or 7/16-inch OSB[6]	N/A	None or (Optional barrier board maximum ½-inch thick Georgia-Pacific DensDeck® Roofboard)	See Section 3.3	501 steel panels (nominal 0.019-inch base metal thickness and 12-inch wide)	No. 10-12 x 1¼ -inch long Pan Head screws at 11½ inches O.C. (every 5th hole along the fastening location of the panel)	52.5
W-2	1/2-inch Plywood or 7/16-inch OSB[6]	N/A	None or (Optional barrier board maximum ½-inch thick Georgia-Pacific DensDeck® Roofboard)	See Section 3.3	511 steel panels (nominal 0.019-inch base metal thickness and 16-inch wide)	No. 10-12 x 1¼ -inch long Pan Head screws at 11½ inches O.C. (every 5th hole along the fastening location of the panel)	52.5
S-1	Steel deck	N/A	None	N/A	501 steel panels (nominal 0.019-inch base metal thickness and 12-inch wide)	No. 10-12 x 1¼ -inch long Pan Head screws at 11½ inches O.C. (every 5th hole along the fastening location of the panel)	52.5
S-2	Steel deck	N/A	None	N/A	511 steel panels (nominal 0.019-inch base metal thickness and 16-inch wide)	No. 10-12 x 1¼ -inch long Pan Head screws at 11½ inches O.C. (every 5th hole along the fastening location of the panel)	52.5

For **SI:** 1 inch = 25.4 mm; 1 ft = 0.305 m; 1 psf = 47.88 Pa.

[1]Wood deck must be a minimum 15/32-inch-thick (11.9 mm) plywood or non-veneer APA-rated minimum 7/16-inch-thick (11.1 mm) oriented-strand board (OSB), unless otherwise noted in this report. Steel deck must be a minimum No. 22 gauge galvanized steel [0.030 inch (0.76 mm)].
[2] All foam plastic insulation must be UL-classified foam plastic for roofing systems, and must be limited to the maximum thickness for which the flame spread index (in accordance with ASTM E84 or UL 723) is 75 or less. Polyisocyanurate foam plastic insulation must comply with ASTM C1289 and polystyrene foam plastic insulation must comply with ASTM C578.
[3]Barrier board must be UL-classified for roofing systems.
[4]Fastener spacing is the maximum allowable for the rated pressure.
[5]Minimum penetration through the deck for fasteners is 1 inch for wood decks and 3/4 inch for steel decks.
[6]Plywood or OSB attachment to supports shall consist of No. 8 by 1 3/4-inch-long wood screws spaced at 4 inches O.C. at the plywood or OSB edges and 12 inches O.C. in the field.

TABLE 3 – APPLICABLE SECTIONS OF EACH EDITION OF THE IBC AND IRC

ESR-4343	2024 IBC	2021 IBC	2018 IBC	2015 IBC
3.2	2304.8.2	2304.8.2	2304.8.2	2304.8.2
3.2	2208	2210.1.1.2	2210.1.1.2	2210.1.1.2
3.3	1507.1.1 and 1507.4.5	1507.1.1 and 1507.4.5	1507.1.1 and 1507.4.5	1507.4.5
3.3/4.1	1503.2	1503.2	1503.2	1503.2
4.1	1507.4	1507.4	1507.4	1507.4
4.1	1512	1512	1511	1511
4.2	1505.2	1505.2	1505.2	1505.2
4.4	Table 1607.1	Table 1607.1	Table 1607.1	Table 1607.1
5.3	2603.4.1.5	2603.4.1.5	2603.4.1.5	2603.4.1.5
5.5	Table 1508.2	Table 1508.2	Table 1508.2	Table 1508.2
ESR-4343	**2024 IRC**	**2021 IRC**	**2018 IRC**	**2015 IRC**
3.2	R803	R803	R803	R803
3.3	R905.1.1	R905.1.1	R905.1.1	R905.1.1
3.3	R905.10.6	R905.10.5	R905.10.5	R905.10.5
3.3/4.1	R903.2	R903.2	R903.2	R903.2
4.1	R905.10	R905.10	R905.10	R905.10
4.1	R908	R908	R908	R908
4.2	R902.1	R902.1	R902.1	R902.1
5.3	R316.4	R316.4	R316.4	R316.4
5.5	Table R906.2	Table R906.2	Table R906.2	Table R906.2

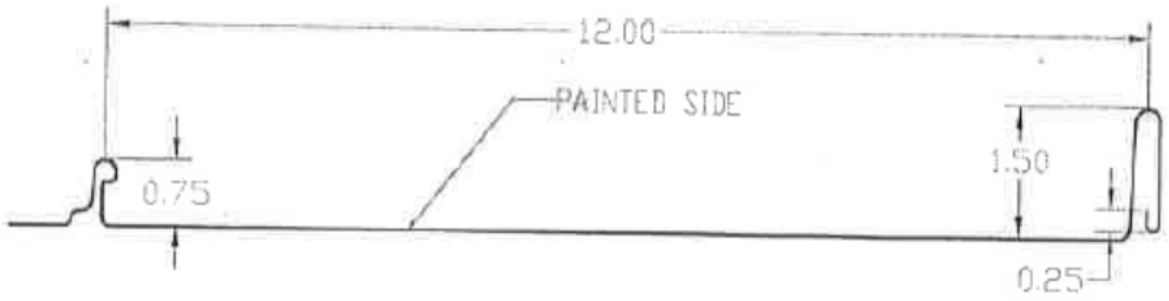

FIGURE 1—501 UNIVERSAL STANDING SEAM STEEL ROOF PANELS

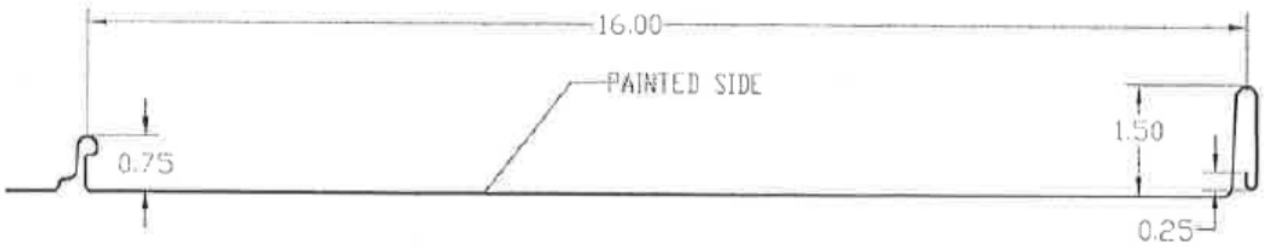

FIGURE 2—511 UNIVERSAL STANDING SEAM STEEL ROOF PANELS