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ESR-2048

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
SECTION: 07 41 13—METAL ROOF PANELS

REPORT HOLDER:

CUSTOM-BILT METALS

**1333 CORPORATE DRIVE, SUITE 103
IRVING, TEXAS 75038**

EVALUATION SUBJECT:

CUSTOM-BILT STANDING SEAM METAL ROOF PANELS: CB-150 AND SL-1750



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**DIVISION: 07 00 00—THERMAL AND MOISTURE
PROTECTION****Section: 07 41 13—Metal Roof Panels****REPORT HOLDER:****CUSTOM-BILT METALS**
1333 CORPORATE DRIVE, SUITE 103
IRVING, TEXAS 75038
(888) 875-8484
www.custombiltmetals.com**EVALUATION SUBJECT:****CUSTOM-BILT STANDING SEAM METAL ROOF
PANELS: CB-150 AND SL-1750****1.0 EVALUATION SCOPE****Compliance with the following codes:**

- 2012 and 2009 *International Building Code*® (IBC)
- 2012 and 2009 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Weather resistance
- Fire classification
- Wind uplift resistance

2.0 USES

Custom-Bilt Standing Seam Metal Roof Panels are steel panels complying with IBC Section 1507.4 and IRC Section R905.10. The panels are recognized for use as Class A roof coverings when installed in accordance with this report.

3.0 DESCRIPTION**3.1 Roofing Panels:**

Custom-Bilt standing seam roof panels are fabricated in steel and are available in the CB-150 and SL-1750 profiles. The panels are roll-formed at the jobsite to provide the standing seams between panels. See Figures 1 and 3 for panel profiles.

The standing seam roof panels are roll-formed from minimum No. 24 gage [0.024 inch thick (0.61 mm)] cold-formed sheet steel. The steel conforms to ASTM A792,

with an aluminum-zinc alloy coating designation of AZ50.

The panel profiles are as follows:

- CB-150: This profile is formed to 12- or 16-inch-wide (305 or 406 mm) panels, with 1¹/₂-inch-high (38 mm) mechanically locking seams. See Figure 1.
- SL-1750: This profile is formed to 14- or 18-inch-wide (356 or 457 mm) panels, with 1³/₄-inch-high (44 mm) snap-locking seams. See Figure 3.

3.2 Decking:

Solid or closely fitted decking must be minimum ¹⁵/₃₂-inch-thick (11.9 mm) wood structural panel or lumber sheathing, complying with IBC Section 2304.7.2 or IRC Section R803, as applicable.

3.3 Underlayment and Flashing:

Underlayment, when used, must comply with ASTM D226 or GAF VersaShield® Fire-Resistant Roof Deck Protection (ESR-2053). Flashing must be in accordance with the applicable code.

3.4 Panel Clips:

Panel clips are supplied by Custom-Bilt, and are fabricated from ASTM A653 sheet steel with a zinc coating designation of G90, and a base-metal thickness of 0.024 inch [0.61 mm (No. 24 gage)] for the CB-150 and 0.048 inch [1.22 mm (No. 18 gage)] for the SL-1750. See Figures 2 and 4 for panel clips and dimensions.

3.5 Fasteners:

Fasteners for attaching the anchor clips to the sheathing must be corrosion-resistant screws of sufficient length to penetrate into the sheathing a minimum of ³/₄ inch (19 mm) or through the thickness of the sheathing, whichever is less.

4.0 DESIGN AND INSTALLATION**4.1 General:**

Installation of the Custom-Bilt Standing Seam Roof Panels must be in accordance with this report, Section 1507.4 of the IBC or Section R905.10 of the IRC, and the manufacturer's published installation instructions. The manufacturer's installation instructions must be available at the jobsite at all times during installation.

The roof panels must be installed on solid or closely fitted decking, as specified in Section 3.2. Accessories such as gutters, drip angles, fascias, ridge caps, window or gable trim, valley and hip flashings, etc., are fabricated to suit each job condition. Details must be submitted to the code official for each installation.

4.2 Roof Panel Installation:

4.2.1 CB-150: The CB-150 roof panels are installed on roofs having a minimum slope of 2:12 (17 percent). The roof panels are installed over underlayment, when required by the applicable codes, and secured to the sheathing with the panel clip shown in Figure 2. The clips are located at each panel rib side lap spaced 6 inches (152 mm) from all ends and at a maximum of 4 feet (1.22 m) on center along the length of the rib, and fastened with a minimum of two No. 10 by 1-inch pan head corrosion-resistant screws. The panel ribs are mechanically seamed twice, each pass at 90 degrees, resulting in a double-locking fold as shown in Figure 1.

4.2.2 SL-1750: The SL-1750 roof panels are installed on roofs having a minimum slope of 3:12 (25 percent). The roof panels are installed over underlayment, when required by the applicable codes, and secured to the sheathing with the panel clips shown in Figure 4. The clips are located at each panel rib side lap spaced 6 inches (152 mm) from all ends and at a maximum of 3 feet (914 mm) on center along the length of the rib, and fastened with a minimum of two No. 10 by 1-inch pan head corrosion-resistant screws. After installation of fasteners along one side, each panel is lapped over the preceding panel and snap-locked into place.

4.3 Fire Classification:

The roof covering system described in Table 1, when installed in accordance with this report, is a Class A roof covering in accordance with ASTM E108 (UL 790).

4.4 Wind Uplift Resistance:

The systems described in Section 3.0 and installed in accordance with Sections 4.1 and 4.2 have an allowable wind uplift resistance of 45 pounds per square foot (2.15 kPa).

5.0 CONDITIONS OF USE

The standing seam 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** The panels are manufactured, identified and installed in accordance with this report, the applicable code, and the manufacturer’s published installation instructions. In the event of a conflict between this report and the manufacturer’s published installation instructions, this report governs.
- 5.2** The required design wind loads must be determined for each project. Wind uplift pressure on any roof area must not exceed 45 pounds per square foot (2.15 kPa).
- 5.3** The Custom-Bilt Standing Seam Roof Panels are manufactured in Chino, California, and McClellan, California, 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 October 2012.

7.0 IDENTIFICATION

Each standing seam metal roof panel is identified with a label bearing the product name, the material type and gage, the Custom-Bilt Metals name and address, and the evaluation report number (ESR-2048).

TABLE 1—ROOF CLASSIFICATION

SYSTEM	MAXIMUM SLOPE (inch/foot)	DECK ¹	UNDERLAYMENT	METAL PANEL	ROOF CLASS
1	Unlimited	Minimum 15/32" Plywood	One Layer of Type II (No. 30) Underlayment and Two Layers of GAF VersaShield Fire-Resistant Roof Deck Protection	CB-150 or SL-1750	A

¹ See Section 3.2.

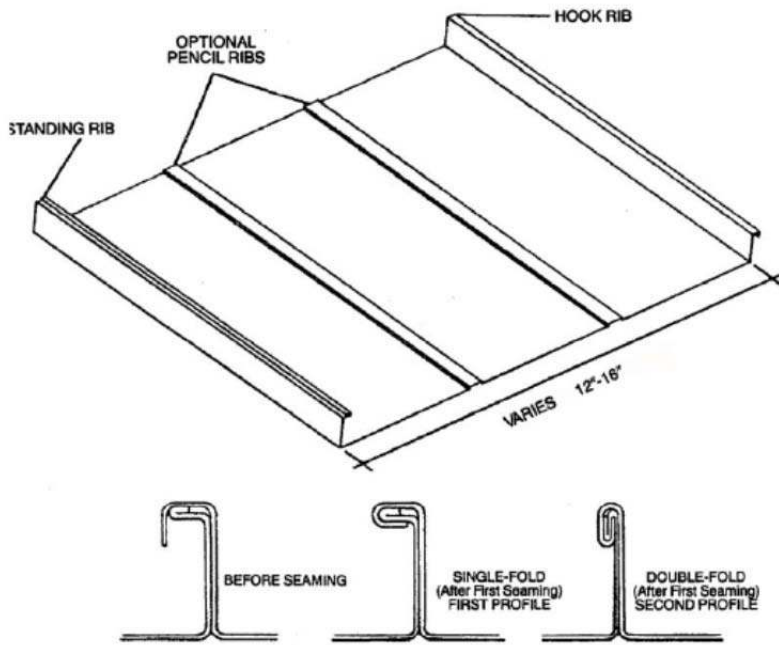


FIGURE 1—CB-150 PANEL
For SI: 1 inch = 25.4 mm

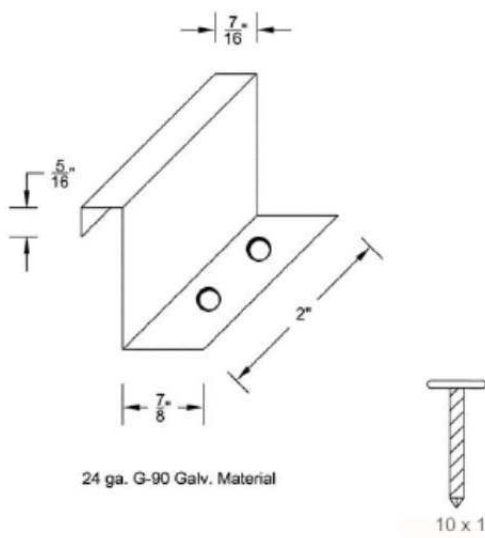


FIGURE 2—CB-150 ANCHOR CLIP
For SI: 1 inch = 25.4 mm

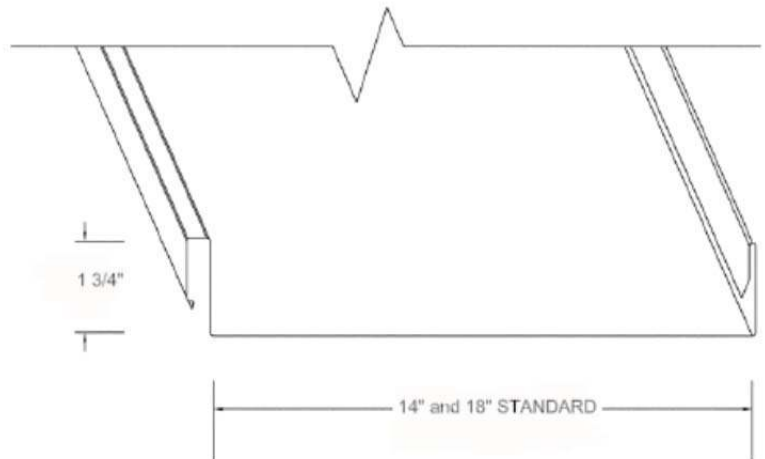


FIGURE 3—SL-1750 PANEL
For SI: 1 inch = 25.4 mm

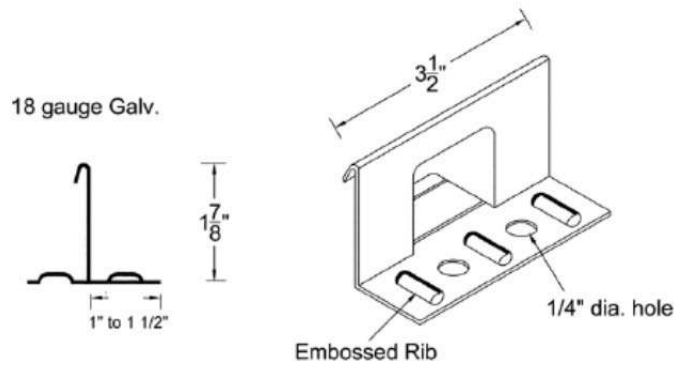


FIGURE 4—SL-1750 ANCHOR CLIP
For SI: 1 inch = 25.4 mm

ICC-ES Evaluation Report**ESR-2048 CBC and CRC Supplement**

Issued March 2015

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(888) 875-8484
www.custombiltmetals.com**EVALUATION SUBJECT:****CUSTOM-BILT STANDING SEAM METAL ROOF PANELS: CB-150 AND SL-1750****1.0 REPORT PURPOSE AND SCOPE****Purpose:**

The purpose of this evaluation report supplement is to indicate that Custom-Bilt Standing Seam Metal Roof Panels, recognized in ICC-ES master report ESR-2048, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2010 *California Building Code* (CBC)
- 2010 *California Residential Code* (CRC)

2.0 CONCLUSIONS**2.1 CBC:**

The Custom-Bilt Standing Seam Metal Roof Panels described in the master report ESR-2048 may be used where a Class A roof covering complying with CBC Section 1505.1.1, a Class B roof covering complying with CBC Section 1505.1.2, or a Class C roof covering complying with CBC Section 1505.1.3 is required, provided installation is in accordance with the master report.

The roofing panels may be used in the construction of new buildings located in a Fire Hazard Zone within a State Responsibility Area or any Wildland-Urban Interface Fire Area, provided installation is in accordance with the master report and the additional requirements of Sections 701A.3 and 705A of the CBC.

2.2 CRC:

The Custom-Bilt Standing Seam Metal Roof Panels described in the master report ESR-2048 may be used where a Class A roof cover complying with CRC Section R902.1.1, a Class B roof covering complying with CRC Section R902.1.2, or a Class C roof covering complying with CRC Section R902.1.3 is required, provided installation is in accordance with the master report and the additional requirements of Section R905.4 of the CRC.

The roofing panels may be used in the construction of new buildings located in any Wildland–Urban Interface Fire Area, provided installation is in accordance with the master report and the additional requirements of Sections R327.1.3.1 and R327.5 of the CRC.

The products recognized in this supplement have not been evaluated for compliance with the *International Wildland–Urban Interface Code*®.

This supplement expires concurrently with the master report reissued March 2015.