



ICC-ES Evaluation Report

Reissued August 2022

ESR-3564

This report is subject to renewal August 2024.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 31 16—Metal Shingles

Section: 07 41 13—Metal Roof Panels

REPORT HOLDER:

EDCO PRODUCTS, INC.

EVALUATION SUBJECT:

METAL ROOFING PANELS: ARROWLINE, INFINITI AND GENERATIONS SHINGLE-SHAKE AND ARROWLINE SLATE

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015, 2012 and 2009 *International Building Code*® (IBC)
- 2021, 2018, 2015, 2012 and 2009 *International Residential Code*® (IRC)

Properties evaluated:

- Wind resistance
- Weather resistance

1.2 Evaluation to the following green code:

2019 California Green Building Standards Code (CALGreen), Title 24, Part 11

Attributes verified:

See Section 3.1

2.0 USES

The ArrowLine, Infiniti and Generations Shingle-Shake and ArrowLine Slate metal roofing panels complying with IBC Section 1507.5 and IRC Section R905.4 are used as nonclassified roof covering assemblies when installed over new and existing roofs.

3.0 DESCRIPTION

3.1 General:

The metal roofing panels are fabricated from No. 28 gage [0.016-inch (0.41 mm) base-metal thickness] galvanized steel sheets, complying with ASTM A653, with G90 zinc

coating. The panels are approximately 50.7 inches long by 12.8 inches wide (1288 mm by 325 mm), with an exposure of 50 inches by 12 inches (1270 mm by 305 mm). See Figure 1.

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 for 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 ArrowLine Shingle-Shake:

The ArrowLine Shingle-Shake roofing panels are stamped to simulate a traditional shake roof covering. The tops of the shingles are coated with a polyvinylidene fluoride (PVDF) paint. The undersides of the panels are finished with a corrosion-resistant coating. See Figure 1.

3.3 Generations Shingle-Shake:

The Generations Shingle-Shake roofing panels are identical to the ArrowLine Shingle-Shake roofing panels except they have a wood grain pattern printed over the PVDF clear coat. See Figure 1.

3.4 Infiniti Shingle-Shake:

The Infiniti Shingle-Shake roofing panels are identical to the ArrowLine Shingle-Shake roofing panels except they have a powder-coated, textured finish applied over the PVDF paint. See Figure 1.

3.5 ArrowLine Slate:

The ArrowLine Slate roofing panels are stamped to simulate a traditional slate roof covering. The tops of the shingles are coated with a PVDF paint. The undersides of the panels are finished with a corrosion-resistant coating. See Figure 2.

3.6 Accessories:

Metal accessories such as eave and rake starters, end wall and valley flashings, and hip and ridge caps must be from No. 28 gage [0.016-inch (0.397 mm) base-metal thickness] galvanized steel sheets, complying with ASTM A653, with G90 zinc coating. They must be texture fabricated with velvet embossing and coated with PVDF fluoropolymer finish.

3.7 Shingle and Valley Clips:

Shingle and valley clips must be manufactured from No. 24 gage [0.024-inch (0.61 mm) base-metal thickness] galvanized steel sheets, complying with ASTM A653, with G90 zinc coating. See Figure 3 for the shingle clip and Figure 4 for the valley clip.

3.8 Fasteners:

Fasteners used to attach the shingle and valley clips to the sheathing must be minimum No.10-12 by minimum 1-inch-long (25.4 mm), hex washerhead (HWH), self-tapping, corrosion-resistant steel screws, long enough to penetrate $\frac{3}{4}$ inch (19 mm) into or through the thickness of the plywood sheathing.

3.9 Underlayment:

Underlayment must be a minimum of one layer of asphalt-saturated felt complying with ASTM D226, Type II (No. 30).

4.0 INSTALLATION

4.1 General:

The ArrowLine, Infiniti and Generations Shingle-Shake and ArrowLine Slate metal roofing panels must be installed in accordance with IBC Section 1507.5 and IRC Section R905.4, as applicable, the manufacturer's published installation instructions and this report. The manufacturer's installation instructions must be available at all times on the jobsite during installation.

4.1.1 New Roofing:

The roofing panels must be installed over minimum $\frac{15}{32}$ -inch-thick (11.9 mm) solid or closely fitted decking complying with the applicable code, on roofs having a minimum slope of 4:12 (33 percent slope). The decking must be covered with the underlayment specified in Section 3.9, installed in accordance with IBC Sections 1507.1.1 and 1507.5.3 (Section 1507.5.3 of the 2015 and 2012 IBC) or IRC Sections R905.1.1 and R905.4.3 (Section R905.4.3 of the 2012 and 2009 IRC), as applicable.

The roofing panels are installed over the underlayment and secured to the decking with the shingle clips as described in Section 3.7, with a minimum of five shingle clips per roofing panel.

Valley flashings must comply with, and be installed in accordance with, IBC Section 1507.5.7 or IRC Section R905.4.6, as applicable. Other flashing must comply with IBC Section 1503.2.1 or IRC Section R903.2.1, as applicable.

4.1.2 Ice Barrier: In areas where there has been a history of ice forming along the eaves and causing a backup of water, an ice barrier must be installed in accordance with IBC Sections 1507.1.2 and 1507.5.4 (Section 1507.5.4 of the 2015, 2012 and 2009 IBC) or IRC Sections R905.1.2 and R905.4.3.1 (Section R905.4.3.1 of the 2012 and 2009 IRC), as applicable.

4.2 Fire Classification:

The roofing panels are limited to use as nonclassified roof coverings.

4.3 Wind Resistance:

The metal roofing panels described in Section 3.0 have the following allowable uplift resistance when installed in accordance with Section 4.1, with the clips and fasteners as noted:

1. No. 28 gage ArrowLine, Infiniti and Generations Shingle-Shake roofing panels with No. 24 gage shingle clips at 10 inches (254 mm) on center and one No. 10-12 by 1-inch-long (25.4 mm) HWH screw per clip. Allowable uplift resistance = 101 psf (4.8 kPa).
2. No. 28 gage ArrowLine, Infiniti and Generations Shingle-Shake roofing panels with No. 24 gage shingle clips at 8 $\frac{1}{2}$ inches (215.9 mm) on center and one No. 10-12 by 1-inch-long (25.4 mm) HWH screw per clip. Allowable uplift resistance = 116 psf (5.5 kPa).
3. No. 28 gage ArrowLine Slate roofing panels with No. 24 gage shingle clips at 10 inches (254 mm) on center and one No. 10-12 by 1-inch-long (25.4 mm) HWH screw per clip. Allowable uplift resistance = 71 psf (3.4 kPa).

4.4 Reroofing:

If the existing roof covering is completely removed, installation must be in accordance with Section 4.1 of this report.

For the shingles to be installed over existing roofing materials without removal of the existing roof covering, installation must be in accordance with Section 1512 of the 2021 IBC (Section 1511 of the 2018 and 2015 IBC, Section 1510 of the 2012 and 2009 IBC) or Section R908 of the IRC (Section R907 of the 2012 and 2009 IRC), as applicable. Prior to installation of the new roof covering, the existing hip and ridge materials must be removed and the roof cleaned of any loose gravel or debris.

5.0 CONDITIONS OF USE

The ArrowLine, Infiniti and Generations Shingle-Shake and ArrowLine Slate metal roofing 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 must be manufactured, identified, and installed in accordance with the applicable codes, this report, and the manufacturer's published installation instructions. If there is a conflict between the manufacturer's instructions and this report, this report governs.
- 5.2 The roofing panels are manufactured in Hopkins, Minnesota, 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.

7.0 IDENTIFICATION

- 7.1 The cartons are identified with a label bearing the product name, the manufacturer's name (Edco Products, Inc.) and address, the production date code, and the ICC-ES evaluation report number (ESR-3564).
- 7.2 The report holder's contact information is the following:

EDCO PRODUCTS, INC.
8700 EXCELSIOR BOULEVARD
HOPKINS, MINNESOTA 55343
(952) 938-6313
www.edcoproducts.com

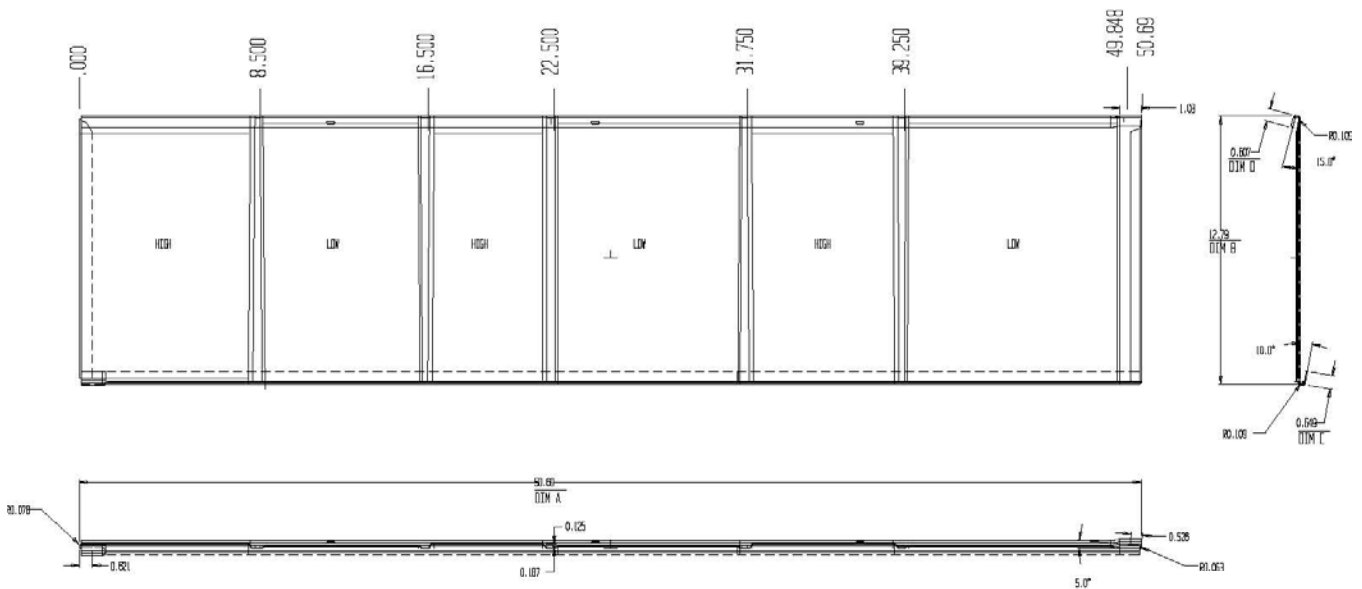


FIGURE 1—ARROWLINE, INFINITI AND GENERATIONS SHINGLE-SHAKE

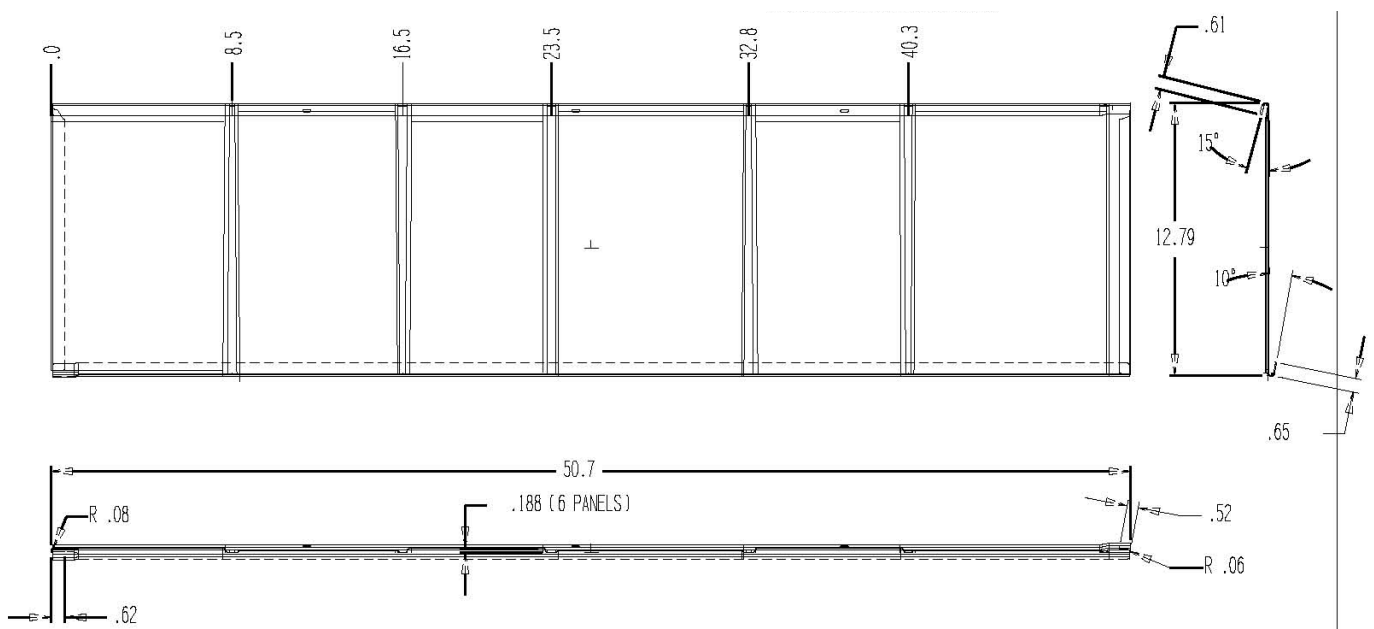
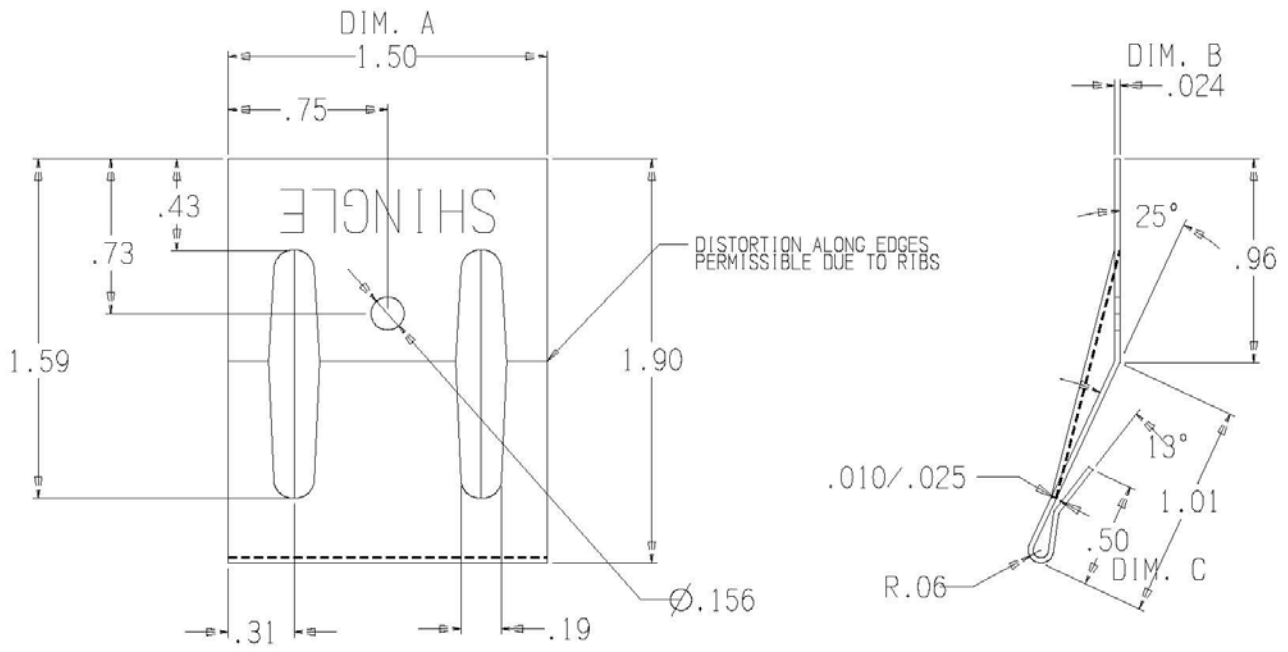


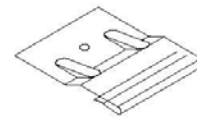
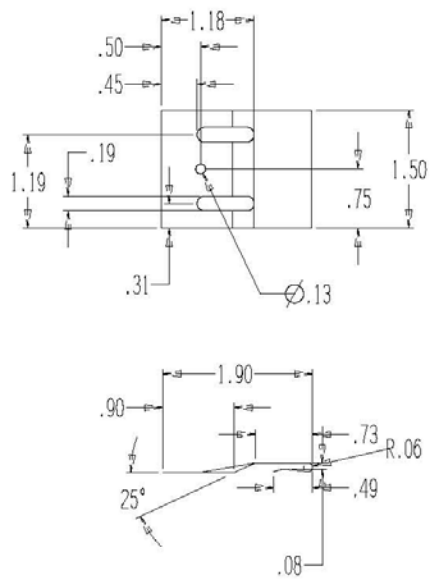
FIGURE 2—ARROWLINE SLATE



REVISED 4/16/2008 - INCREASED SIZE OF STIFFENING RIBS

MATERIAL: .024" G-90 GALVANIZED STEEL
ASTM - A653, CS TYPE B

FIGURE 3—SHINGLE CLIP



MATERIAL: .024" G-90 GALVANIZED STEEL

FIGURE 4—VALLEY CLIP

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The purpose of this evaluation report supplement is to indicate that Metal Roofing Panels: Arrowline, Infiniti and Generations Shingle-Shake And Arrowline Slate, described in ICC-ES evaluation report ESR-3564, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 and 2019 *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 Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 and 2019 *California Residential Code* (CRC)

2.0 CONCLUSIONS**2.1 CBC:**

The Metal Roofing Panels: Arrowline, Infiniti and Generations Shingle-Shake And Arrowline Slate, described in the evaluation report ESR-3564, may be used where the CBC requires a Class A roof covering complying with 2022 or 2019 CBC Section 1505.1.1, a Class B roof covering complying with 2019 CBC Section 1505.1.2, or a Class C roof covering complying with 2022 CBC Section 1505.1.2 or 2019 CBC Section 1505.1.3, provided the design and installation are in accordance with the 2021 or 2018 *International Building Code*® (IBC) provisions noted in the evaluation report, as applicable.

The products have not been evaluated under Chapter 7A for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC:

The Metal Roofing Panels: Arrowline, Infiniti and Generations Shingle-Shake And Arrowline Slate, described in the evaluation report ESR-3564, may be used where the CRC requires a Class A roof cover complying with 2022 or 2019 CRC Section R902.1.1, a Class B roof covering complying with 2019 CRC Section R902.1.2, or a Class C roof covering complying with 2022 CRC Section R902.1.2 or 2019 CRC Section R902.1.3, provided the design and installation are in accordance with the 2021 or 2018 *International Residential Code*® (IRC) provisions noted in the evaluation report and the additional requirements of CRC Section R905.4, as applicable.

The products have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in a Fire Hazard Severity Zone within State Responsibility Areas or any Wildland–Urban Interface Fire Area.

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 evaluation report, issued August 2022.