

Product Evaluation

RC281 | 0821

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: RC-281

Effective Date: August 1, 2021

Re-evaluation Date: August 2025

Product Name: DECRA Shake, DECRA Tile, and DECRA Shingle Plus Lightweight Steel Shingles
Installed Over a Plywood Roof Deck

Manufacturer: DECRA Roofing Systems, Inc.
1230 Railroad Street
Corona, CA 92882
(951) 272-8180

General Description:

The lightweight steel roofing panels are pressure formed, 26-gauge, 55 percent aluminum-zinc alloy coated steel. The steel is coated with a corrosion-inhibiting acrylic primer, an acrylic resin base coat, an embedded stone granule surface, and a clear acrylic resin binder. Ridge, gable rake, and hip trim pieces are constructed like the panels. Flashing pieces are made from the same material as the panels but may or may not have the stone granule coating. The panels may be installed directly to the roof deck, on a batten system consisting of nominal 2x2 battens attached to the roof deck, or on a batten system consisting of nominal 2x2 battens and 1x4 counter battens attached to the roof deck.

Table 1. Panel Profiles, Dimensions, and Exposure.

Profile	Panel Dimensions	Installed Exposure
Decra Tile	16-1/2" x 52"	14-1/2" x 50"
Decra Shake	14-5/8" x 53"	12-5/8" x 51"
Decra Shingle Plus	17-1/2" x 52"	14-1/2" x 50"

Limitations:

Roof Slope: Do not install the product on roof slopes less 3:12.

Roof Deck: Minimum nominal 15/32" thick plywood sheathing.

Battens: Minim Spruce-Pine-Fir lumber. Size as specified in the Installation section.

Roof Framing: Rafters or trusses must not exceed 24" on center.

Roof Deck Attachment: The roof deck must be secured to the roof framing to resist the required wind uplift design pressures.

Design Wind Pressures: The design pressure uplift load resistance shall be as specified in Table 2.

Table 2. Design Pressures

System	Design Wind Pressure
1	-86.0 psf
2	-153.5 psf
3	-78.5 psf
4	-146.0 psf

Installation Over an Existing Roof Covering: Installation over an existing roof covering is limited to a maximum of one existing layer of composition shingles, wood shingles or shakes, built-up roofing, or roll roofing. The existing roof deck must be minimum 15/32" plywood. Note: Inspection of the existing roof deck must be made before installing the roof panels. The condition of the existing roof deck must be acceptable to receive the roof panels before the roof panel installation can proceed. A layer of underlayment over the existing roof covering is not required.

Installation:

Underlayment: A minimum of one layer of No. 30 (Type II) asphalt felt must be used. The underlayment used must comply with one or more of the following: ASTM D 226, ASTM D 4869, or ASTM D 1970. The felt must be installed with minimum 6" side laps and minimum 2" end laps. The underlayment must be applied with corrosion-resistant fasteners in accordance with manufacturer's installation instructions. Fasteners must be applied along the overlaps not farther apart than 36" on center.

Attachment of Metal Roofing Panels to Roof Deck: The metal roofing panels shall be secured to the roof deck as follows:

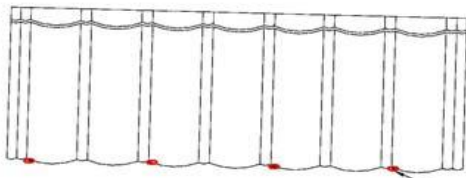
System 1: The 2"x2" wood battens are fastened using No. 9 x 3-1/2" long coated all-purpose steel exterior wood screws with one screw at each intersection with joists, maximum 24" on center. The steel panels are installed with a 2" side lap and are overlapped in the vertical position with the course and 2"x2" batten below (Figure 1). The panels are attached to the 2"x2" battens with four No. 8 by 1-1/2" long hex head steel screws in the front lip where the panel fits over the panels on the course below and into the 2"x2" batten. One screw is installed where the panels overlap, and the balance of the screws are spaced out along the panel length.

System 2: The 2"x2" wood battens are fastened using No. 9 x 3-1/2" long coated all-purpose steel exterior wood screws with two screws at each intersection with joists, maximum 24" on center and one No. 8 x 2-1/2" long all-purpose steel exterior wood screw centered between the joists. The steel panels are installed with a 2" side lap and are overlapped in the vertical position with the course and 2"x2" batten below (Figure 1). The panels are attached to the 2"x2" battens with seven No. 8 x 1-1/2" long hex head steel screws in the front lip where the panel fits over the panels on the course below and into the 2"x2" batten. One screw is installed where the panels overlap, and the balance of the screws are spaced out along the panel length.

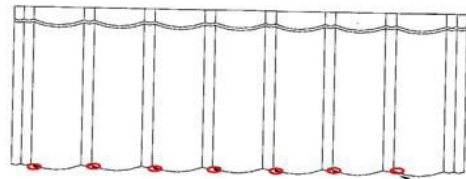
System 3 (with Counter battens): The 1"x4" counter battens are fastened with 16d smooth shank box nails 3-1/4" long (0.131" dia.) to the joists on 12" on center. The 2"x2" wood battens are fastened using No. 9 x 3-1/2" long coated all-purpose steel exterior wood screws with one screw at each intersection with joists, maximum. 24" on center. The steel panels are installed with a 2" side lap and are overlapped in the vertical position with the course and 2"x2" batten below (Figure 1). The panels are attached to the 2"x 2" battens with four No. 8 x 1-1/2" long hex head steel screws in the front lip where the panel fits over the panels on the course below and into the 2"x2" batten. One screw is installed where the panels overlap, and the balance of the screws are spaced out along the panel length.

System 4 (with counter battens): The 1"x4" counter battens are fastened with 16d smooth shank box nails 3-1/4" long (0.131" dia.) to the joists on 7" on center. The 2"x2" wood battens are fastened using No. 9 x 3-1/2" long coated all-purpose steel exterior wood screws with two screws at each intersection with joists, maximum 24" on center. The steel panels are installed with a 2" side lap and are overlapped in the vertical position with the course and 2"x2" batten below (Figure 1). The panels are attached to the 2"x2" battens with seven No. 8 x 1-1/2" long hex head steel screws in the front lip where the panel fits over the panels on the course below and into the 2"x2" batten. One screw is installed where the panels overlap, and the balance of the screws are spaced out along the panel length.

DECRA Tile

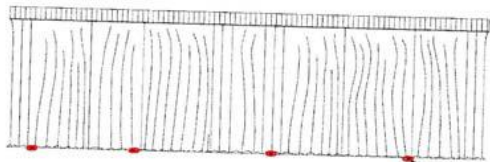


Four (4) per Panel

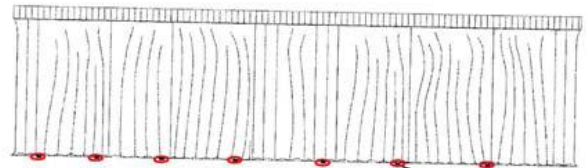


Seven (7) per Panel

DECRA Shake

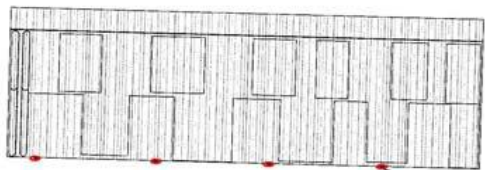


Four (4) per Panel

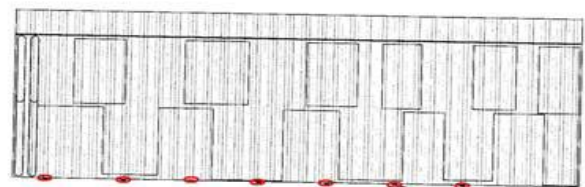


Seven (7) per Panel

DECRA Shingle Plus



Four (4) per Panel



Seven (7) per Panel

Figure 1. DECRA Tile, Shake, Shingle Plus

Note: Keep the manufacturer's installation instructions available on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.