

## Product Evaluation

RC523 | 0220

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-523

**Effective Date:** February 1, 2020

**Re-evaluation Date:** March 2024

**Product Name:** Tilcor North America Lightweight Stone Coated Steel Shingles

**Manufacturer:** Ross Roof Group dba Tilcor North America  
P.O. Box 5125  
Galt, CA 95633  
(916) 838-1940

### General Description:

The stone coated lightweight steel roofing panels are pressure formed, 26-gauge, and 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 similar to the panels. Flashing pieces are made from the same material as the panels but may or may not have the stone granule coating.

The following panels are applicable to this evaluation report:

**Antica:** The panels are 52.4" long by 16.3" wide. The panels have an exposure of 48" long by 14.5" wide. Refer to Figure 1.

**Bond:** The panels are 52.2" long by 16.8" wide. The panels have an exposure of 49.8" long by 14.5" wide. Refer to Figure 1.

**Classic:** The panels are 52.2" long by 16.5" wide. The panels have an exposure of 49.8" long by 14.5" wide. Refer to Figure 1.

**Shake:** The panels are 52.6" long by 16.8" wide. The panels have an exposure of 49.6" long by 14.5" wide. Refer to Figure 1.

**Royal:** The panels are 52.6" long by 16.5" wide. The panels have an exposure of 49.6" long by 14.5" wide. Refer to Figure 1.

**Tudor:** The panel are 52.4" long by 16.7" wide. The panels have an exposure of 49.8" long by 14.5" wide. Refer to Figure 1.

**CF Shingle:** The panel are 52.6" long by 16.6" wide. The panels have an exposure of 49.6" long by 14.6" wide. Refer to Figure 1.

**CF Shake:** The panel are 52.6" long by 16.7" wide. The panels have an exposure of 49.6" long by 14.6" wide. Refer to Figure 1.

**Limitations:**

**Roof Framing:** The metal roofing panels must be installed over a solidly sheathed minimum 15/32" plywood roof deck. The roof framing members (rafters or trusses) must be spaced a maximum of 24" on center.

**New Roof Framing Attachment:** The roof framing must meet or exceed the uplift requirements of the IRC or IBC and must be installed as required for resistance to wind loads.

**Battens:** Battens may or may not be used. Refer to the Assemblies in this evaluation report.

**Design Wind Pressures:** The design pressure uplift load resistance must be as specified in each assembly.

**Roof Slope:** The roofing panels must not be installed on roof slopes less than 3:12.

**Installation:**

**General Installation Requirements:** Manufacturer's installation instructions must be followed, unless otherwise specified by this product evaluation. All edge, corner, and penetration flashing must be installed according to the manufacturer's installation instructions. Use fasteners that are corrosion resistance as specified in the IRC and the IBC.

### Assembly No. 1 Direct to Deck

**Design Wind Pressure:** -75.0 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** N/A

**Panel Attachment:** The Antica, Bond, Classic, Shake, Royal, and Tudor panels are installed with a 2.4" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the deck with four (4) No. 12-8 x 1-1/4" long hex washer head screws located in the factory tabs that are located on the top edge of the panel. Two (2) screws are located 4" in from each edge and the remaining screws are 15" on center. On the front of each panel, four (4) No. 9-16 x 1-1/2" hex washer head screws are stitch fastened 1" from both ends and 17" on center in between through the nose attaching the preceding course. These fasteners do not penetrate into the roof deck. Refer to Figure 2.

### Assembly No. 2 Direct to Deck

**Design Wind Pressure:** -97.5 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** N/A

**Panel Attachment:** The Antica, Bond, Classic, Shake, Royal, and Tudor panels are installed with a 2.4" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the deck with seven (7) No. 12-8 x 1-1/4" long hex washer head screws located in the factory tabs that are located on the top edge of the panel. Two (2) screws are located 4" in from each edge and the remaining screws are 7-1/2" on center. On the front of each panel, seven (7) No. 9-16 x 1-1/2" hex washer head screws are stitch fastened 1" from both ends and 8-1/2" on center in between through the nose attaching the preceding course. These fasteners do not penetrate into the roof deck. Refer to Figure 2.

### Assembly No. 3 Battens

**Design Wind Pressure:** -37.5 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** Nominal 2" x 2" wood, Douglas Fir-Larch or better. Battens are spaced 14-1/2" on center. Battens are secure through the deck and into the roof framing with one 12d (0.131" x 3-1/4") smooth shank nail. Roof framing spaced a maximum of 24" on center.

**Panel Attachment:** The Antica, Bond, Classic, Shake, Royal, and Tudor panels are installed with a 2.4" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the batten with four (4) 8d x 2-1/2" long ring shank nails located through the nose of the overlapping panel through the proceeding course panel into the batten. Fasteners are located 1" in from each edge and the remaining screws are 17" on center. Refer to Figure 3.

### Assembly No. 4 Battens

**Design Wind Pressure:** -75.0 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** Nominal 2" x 2" wood, Douglas Fir-Larch or better. Battens are spaced 14-1/2" on center. Battens are secure through the deck and into the roof framing with one No. 9 x 3-1/4" torx, bugle head screw. Roof framing spaced a maximum of 24" on center.

**Panel Attachment:** The Antica, Bond, Classic, Shake, Royal, and Tudor panels are installed with a 2.4" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the batten with four (4) 8d x 2-1/2" long ring shank nails located through the nose of the overlapping panel through the proceeding course panel into the batten. Fasteners are located 1" in from each edge and the remaining screws are 17" on center. Refer to Figure 3.

### Assembly No. 5 Battens

**Design Wind Pressure:** -135.0 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** Nominal 2" x 2" wood, Douglas Fir-Larch or better. Battens are spaced 14-1/2" on center. Battens are secure through the deck and into the roof framing with two No. 9 x 3-1/4" torx, bugle head screws per roof framing member. Roof framing spaced a maximum of 24" on center.

**Panel Attachment:** The Antica, Bond, Classic, Shake, Royal, and Tudor panels are installed with a 2.4" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the batten with seven (7) 8d x 2-1/2" long ring shank nails located through the nose of the overlapping panel through the proceeding course panel into the batten. Fasteners are located 1" in from each edge and the remaining screws are 8-1/2" on center. Refer to Figure 3.

### Assembly No. 6 Direct to Deck (Field Installation)

**Design Wind Pressure:** -82.5 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** N/A

**Panel Attachment:** The CF Shingle and the CF Shake panels are installed with a 2.95" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the deck with five (5) No. 12-10 x 1-1/2" long hex head screws with bonded washers fastened into the headlap and into the roof deck. Fasteners are located 2.5" in from each edge and the remaining screws are 10" on center. Refer to Figure 4.

### Assembly No. 7 Direct to Deck (Corner Locations)

**Design Wind Pressure:** -120 psf

**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

**Battens:** N/A

**Panel Attachment:** The CF Shingle and the CF Shake panels are installed with a 2.95" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the deck with nine (9) No. 12-10 x 1-1/2" long hex head screws with bonded washers fastened into the headlap and into the roof deck. Fasteners are located 2.5" in from each edge and the remaining screws are 5.5" on center. Refer to Figure 5.

### **Assembly No. 8 Direct to Deck (Field Locations)**

**Design Wind Pressure:** -37.5 psf

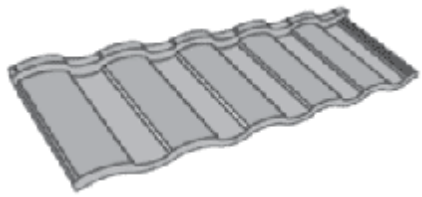
**Deck:** The roof deck must be solidly sheathed with minimum 15/32" plywood.

**Underlayment:** Minimum of one layer of underlayment conforming to ASTM D 226, ASTM D 4869, or ASTM D 1970. The underlayment must be installed in accordance with the IRC or IBC.

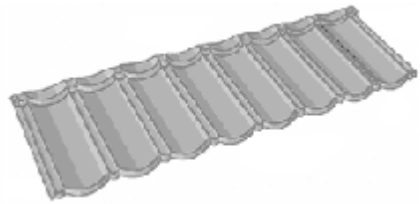
**Battens:** N/A

**Panel Attachment:** The CF Shingle and the CF Shake panels are installed with a 2.95" minimum side lap and are overlapped in the vertical position with the course below. Each panel is secured to the deck with five (5) 0.113 x 2-3/8" ring shank nails fastened into the headlap and into the roof deck. Fasteners are located 2.5" in from each edge and the remaining screws are 10" on center. Refer to Figure 4.

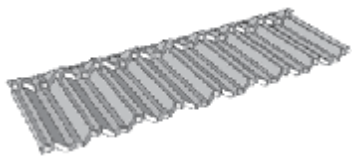
**Note:** Keep the manufacturer's installation instructions on the job site during the installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.



Antica



Bond



Classic



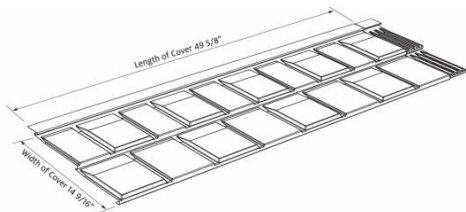
Shake



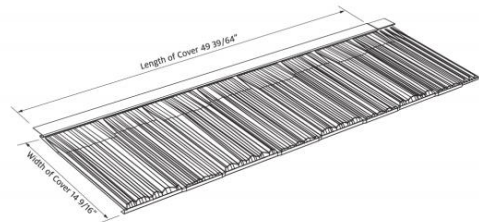
Royal



Tudor



CF Shingle



CF Shake

Figure 1. Panel Profiles

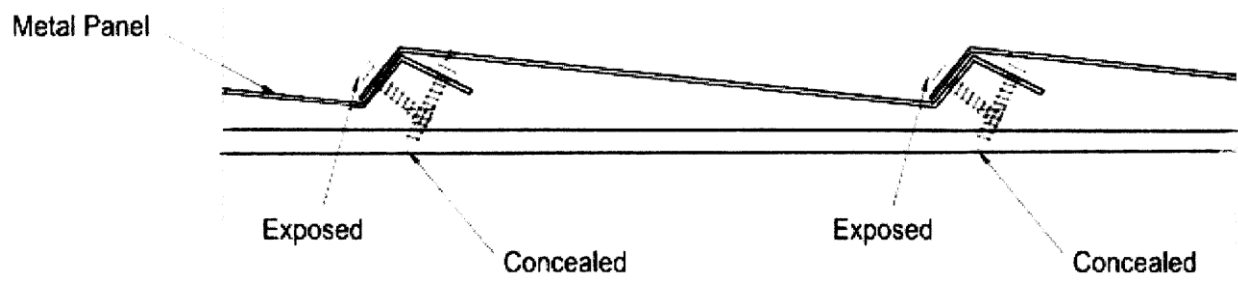


Figure 2. Direct to Deck Panel Installation

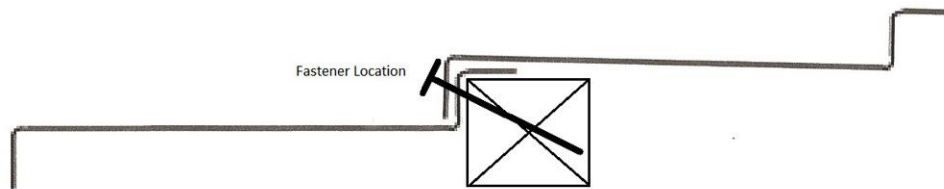


Figure 3. Direct to Batten Panel Installation





Figure 4: Direct to Deck Field Installation

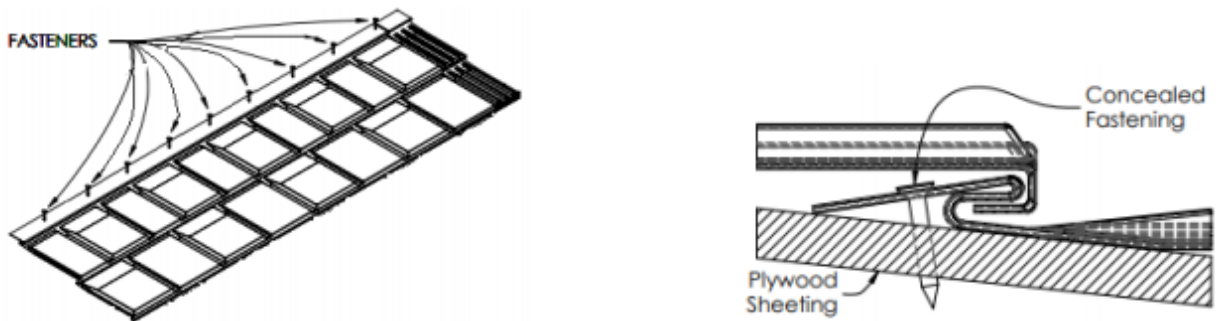


Figure 5: Direct to Deck Corner Installation

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