

## Product Evaluation

RC169 | 0221

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-169

**Effective Date:** February 1, 2021

**Re-evaluation Date:** February 2025

**Product Name:** Spanish Clay Roofing Tiles Installed with Roof Tile Adhesive

**Manufacturer:** Claymex Brick and Tile, Inc.  
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P.O. Box 3398  
Eagle Pass, TX 78852  
(830) 773-5955

### General Description:

The Spanish clay roofing tiles are interlocking tiles that are machine formed from natural clay. The clay roofing tiles are available in a wide variety of colors. Each clay roofing tile has an interlocking rib along each longitudinal edge to provide a water stop and which will restrict lateral movement.

**Adhesive Attachment:** The Claymex Spanish roofing tiles are to be installed adhesively with Tile Bond™ Roof Tile Adhesive. The clay roofing tiles are to be adhered to battens and to the roofing tiles themselves with the Tile Bond™ Roof Tile Adhesive.

**Tile Bond™ Roof Tile Adhesive:** The Tile Bond™ Roof Tile Adhesive is manufactured by Dow Chemical Company. The Tile Bond™ Roof Tile Adhesive is a single component polyurethane foam adhesive for adhering the clay roofing tiles to the wood battens and to the adjacent clay roofing tiles. The Tile Bond™ Roof Tile Adhesive is dispensed from a 23 lb portable canister using a Tile Bond™ gun dispenser. The adhesive is dispensed in the form of paddies. The Tile Bond™ Roof Tile Adhesive must be used as specified in the Tile Bond™ Roof Tile Adhesive Operating Instructions and Maintenance Booklet Form No. 179-04057, published March 2016 by The Dow

Chemical Company and referred to as the TILE Bond™ Booklet in this evaluation report. A copy of the Tile Bond™ Booklet must be available at the job site.

**Roofing Tile Dimensions:** The dimensions of the Claymex Spanish roofing tiles that apply to this product evaluation report are specified in Table 1.

**Table 1**  
**Roofing Tile Dimensions**

Tile Designation	Width (in.)	Length (in.)	Thickness (in.)
Spanish	9-1/4	15-7/8	1/2

**Limitations and Installation:**

**Roof Framing and Roof Deck:** Roof framing members must be in accordance with either the IRC or the IBC. The roof framing members must not be spaced greater than 24" on center.

The roof deck must be solidly sheathed with minimum 7/16" wood structural panels (plywood or OSB). The roof deck must be fastened to the roof framing members in accordance with either the IRC or the IBC.

If the existing roof deck is a spaced board deck, then a solid deck must be created using one of the following two options:

1. The spaced boards must be removed and replaced with a wood structural panel deck (plywood or OSB) with a minimum 7/16" thickness, or
2. The spaced boards must be covered with a wood structural panel deck (plywood or OSB) with a minimum 7/16" thickness. The wood structural panel deck must be installed over the spaced boards in accordance with either the IRC or the IBC.

**Metal Drip Edge:** A metal drip edge must be fastened to the roof deck with either 11-gauge or 12-gauge roofing nails spaced a maximum of 10" on center. Note: The underlayment and the drip edge may be fastened with the same fastener as long as the more stringent fastener pattern is used.

At the eaves, the drip edge must be fastened directly to the deck and the underlayment applied over the drip edge. At the gable ends, the drip edge must be applied over the underlayment.

**Roof Underlayment:**

**3:12 Roof Slope to Under 4:12 Roof Slope:** Two layers of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. The underlayment must be installed as specified in either the IRC or the IBC and in the manufacturer's installation instructions.

**4:12 Roof Slope and Greater:** One layer of underlayment complying with ASTM D 226, Type II (No. 30 asphalt felt) or equivalent. The underlayment must be lapped a minimum of 2" at the head laps and a minimum of 6" at the side laps. The underlayment must be installed as specified in either the IRC or the IBC and in the manufacturer's installation instructions.

**Battens:** The roofing tiles shall be installed over battens. As a minimum, the battens must be nominal 1x2 Southern Yellow Pine wood members. The battens must be installed over the underlayment. The battens must be spaced a maximum of 13-3/8" on center (space battens to allow for a 2-1/2" headlap of the roofing tiles). The battens must be fastened to the roof deck with minimum No. 8 x 2-1/2" screws. The fasteners must be located at each end and spaced a maximum of 8" on center. The fastener must be long enough to penetrate a minimum of 3/4" into or through the roof deck. Batten ends must be separated a minimum of 1-1/2" every 4' to allow for drainage.

**Roof Slope Limitations:** The roofing tiles must only be installed on buildings with a roof slope greater than or equal to 3:12, but not exceeding 12:12.

**Moment of Resistance:** The overturning resistance (moment of resistance) due to wind of the roof tiles based on the installation method for the roof tiles is shown in Table 2.

**Table 2: Moment of Resistance Based on Roof Tile Installation Method**

Tile Designation	Moment of Resistance
Spanish Tile	141.1 ft-lbs.

**Aerodynamic Uplift Moment:** The aerodynamic uplift moment for the roof tile is calculated using Equation 16-34 from the 2018 IBC. The aerodynamic uplift moment is calculated based on the mean roof height for the installation and the required wind speed and Exposure condition for the installation location using ASCE 7-16.

**Permissible Tile Installation:** The roof tiles may be installed if the Moment of Resistance for the roof tile specified in this evaluation report is greater than the Aerodynamic Uplift Moment for the roof tile calculated for the structure location.

**Roof Tile Installation:** The roofing tiles must be installed using the TILE Bond™ Roof Tile Adhesive as specified in the TILE Bond™ Booklet and this evaluation report.

**Certified Applicators:** Installation of the TILE Bond™ Roof Tile Adhesive must be by qualified applicators that have been trained and certified by Dow Chemical Company.

**General:** The roofing tiles and the underlayment system must be clean and dry at the time of their application.

The TILE Bond™ Roof Tile Adhesive must only be applied to the wood battens and to the roofing tiles themselves. Application of the TILE Bond™ Roof Tile Adhesive to the underlayment is not required.

The roofing tiles must be installed with a 2-1/2" headlap.

**Eave Tiles:** For the first tile, apply an adhesive paddy directly to the batten at the head of the tile. The adhesive paddy must be minimum 1-1/2" wide x 1" deep x 6" long. Install the tile. For subsequent tiles, apply an adhesive paddy directly to the batten at the head of the tile. The adhesive paddy must be 1-1/2" wide x 1" deep x 6" long. Apply an adhesive paddy to the longitudinal exposed edge of the previous adjacent tile at a location near the nose of the tile to be installed. The adhesive paddy must be 1-1/2" wide x 1" deep x 4" long. Install the tile. When the adhesive paddies are compressed, the contact area must be a minimum of 10 square inches per paddy. Install the remaining tiles in a similar manner. At least one tile per square must be pulled up to confirm contact area.

**Nose Clips:** Custom-shaped nose clip. The nose clip is 3" in length and is 1/2" in width. They are manufactured of either galvanized steel or Type 304 stainless steel. The nose clip is required for the first course (starter course) of roofing tiles only. The nose clip is hooked over the left side of the roofing tile. The nose clip must be secured to the roof deck with one fastener. The fastener must be a smooth shank nail (minimum 3" long; minimum shank diameter of 0.120", minimum 3/8" diameter). Refer to the manufacturer's installation instructions for nose clip installation details.

**Field Tiles:** A total of three adhesive paddies are required. First, apply an adhesive paddy directly to the batten at the head of the tile. The adhesive paddy must be minimum 1-1/2" wide x 1" deep x 6" long. Second, apply an adhesive paddy along the flat edge of the head of the previous course tile located below the nose of the tile to be installed. The adhesive paddy must be 1-1/2" wide x 1" deep x 4" long. Third, apply an adhesive paddy to the longitudinal exposed edge of the previous adjacent tile at a location near the nose of the tile to be installed. The adhesive paddy must be 1-1/2" wide x 1" deep x 4" long. Install the tile. When the adhesive paddies are compressed, the contact area must be a minimum of 10 square inches per paddy. Install the remaining tiles in a similar manner. At least one tile per square must be pulled up to confirm contact area.

**Hip, Ridge, and Rake Tiles:** Refer to the TILE Bond™ Booklet for the installation requirements.

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