



## **TECHNICAL INFORMATION**

### SECTION 07320

#### **ONE PIECE MISSION “S” CLAY ROOFING TILE**

##### PART 1 GENERAL

###### 1.01 SECTION INCLUDES

- A. Formed clay roofing tiles, complete with components and other required accessories as needed for a complete and proper installation.
- B. Underlayment, eave, valley, rake, and ridge protection; nailers, sheet metal flashings and tile fastening.

###### 1.02 REFERENCES

- A. ICBO Report No. 3523 - Clay Roofing Tiles.
- B. ASTM Standard Specifications
  - 1. C144 - Aggregate for masonry mortar.
  - 2. C150 - Portland Cement.
  - 3. D226 - Asphalt-saturated organic felt used in roofing and waterproofing.
  - 4. D1002 - Silicone sealant.
  - 5. D2626 - Asphalt-saturated and coated organic felt base used in roofing.
  - 6. D2822 - Asphalt roof cement.

###### 1.03 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Submit Shop Drawings showing details on hip, ridge, valley and rake configurations, methods of fastening, and collaborated details of related work.
- C. Product Data: Submit manufacturer's data on tile properties, configurations and colors.
- D. Samples: Submit two tile Samples illustrating color, surface finish and texture, and tile configuration for Architect's approval.

###### 1.04 QUALITY ASSURANCE

- A. Use adequate number of skilled workmen who are thoroughly skilled and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of the Work of the Section.

###### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. All material shall be handled and stored in a manner which will prevent its damage.
- B. Materials shall be stored in original pallets and shall be clearly marked with the manufacturer's name.

## 1.06 WARRANTY

- A. Manufacturer shall warrant the products against manufacturing defects and shall include material and labor to repair or replace defective materials as specified in manufacturer's warranty.
  - a. Warranty Period - Clay Roof Tile: Transferable Lifetime Limited Warranty with 10 year labor and 20 year no fade guaranties.
  - b. Warranty Period – 17 Watt Solar Tiles: Refer to manufacturer's specific 20 year limited product warranty.

## PART 2 PRODUCTS

### 2.01 CLAY ROOFING TILE

- A. Where indicated on the Drawings, provide One-Piece Mission “S” Clay Roofing Tile or ClayLite as manufactured by US Tile Co., 909 Railroad St, Corona, CA 92882 (800) 252-9548, in color " \_\_\_\_\_ " with matching hip, ridge, rakes, boosters and birdstops.
  
- B. Green/Sustainable Attributes
  - a. Cradle to Cradle Certified
  - b. Recycle content: Min 40% Post Industrial/Pre-consumer
  - c. Recyclable: 100%
  
- C. Cool Roof Tiles
  
- D. US Tile Solar Roofs:
  - a. Weight: Standard weight clay roof tiles.
  - b. Weight: Lightweight clay roof tiles.
  - c. Shape: One Piece “S” tile or ClayLite
  - d. Color of Clay Tiles: As selected
  - f. Trim Tile:
    - i. Hip & Ridge: As indicated.
      - 1. Color: As selected to match Field Tile
    - ii. Universal Rake & Boosters: As indicated.
      - 1. Color: As selected to match Field Tile.
  - h. 17 Watt Solar Tile as manufactured by SRS Energy Corporation.
  - j. 17 Watt Solar Tile: Blue
  - l. Balance of Solar System (Inverters and Home Run Cables): As specified by SRS Energy.
  - m. Roof Penetration Flashing: 26 Gauge Galvanized.
  - n. Fasteners: Corrosion resistant screws of sufficient length to penetrate  $\frac{3}{4}$  inch into or through the thickness of the sheathing.
  - o. Special Application: High Wind Areas – Call for details
  - p. Underlayment: One layer of Versashield and one layers of 30# felt. Refer to Other Materials provisions.
  - q. 15 inches (380 mm) Flex Vent: Minimum Net free airflow of 10 sq. per running foot

## 2.02 OTHER MATERIALS

### A. Underlayment:

#### 1. Underlayment shall conform to one of the following:

- a. Roll underlayment: ASTM D226 non-perforated.
- b. Roll underlayment for areas of frequent ice build up or high wind areas: ASTM D2626.
- c. Upgraded Underlayment: Versashield by GAF Corp.
- d. Comply with the Tile Roofing Institute Moderate Climate Installation Guide's Table 1A and Table 1B for specific requirements according to roof pitch

### B. Nailers:

#### 1. Where indicated on the Drawings or where required for proper fastening, provide:

- a. 2 inch by 6 inch wood nailing strips at all hips and ridges.
- b. 2 inch by 4 inch wood nailing strips under first row of cover tile after gable roll, with adjacent 2 inch by 2 inch wood nailing strip along rake sides.

### C. Flashing:

1. Valley flashing: minimum 26 gauge corrosion-resistant metal.
2. Other: lead, copper or other approved material.

### D. Fasteners:

1. Nails: corrosion-resistant box nails, minimum 11 gauge.
2. Other: other approved fastening systems.

### E. Mortar materials, plastic cement and sealant:

1. Sand: ASTM C144
2. Portland cement: ASTM C150s type 1.
3. Plastic cement: ASTM D2822.
4. Silicone sealant: ASTM D1002.

## PART 3 EXECUTION

### 3.01 EXAMINATION AND PREPARATION

A. Verify that deck surfaces are clean, dry, free of ridges, warp or voids.

B. Verify roof openings are correctly framed prior to installing work of this Section. Do not proceed until all unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

#### A. Underlayment:

1. For roof slopes of 3:12 to <4:12, two (2) layers of ASTM D226 Type II (No.30 Felt) are required per IBC and IRC.

2. For pitches of 4/12 and greater: Minimum one layer ASTM D226 Type II (No.30 Felt) (ASTM D4869 Type IV) head lapped 2 inches and end lapped 6 inches, or approved equal per UBC.

## B. Flashing:

### 1. Flash at valleys in strict accordance with Chapter 15 of the Uniform Building Code:

- a. Provide no lighter than 26 gauge corrosion resistant metal valley flashing that extends at least 11 inches each way from the center point.
- b. Provide a splash diverter rib not less than 1 inch high at flow line formed as a part of flashing.
- c. Provide end laps of not less than 6 inches.
- d. Longitudinal edges shall be turned in not less than 30 degrees, and shall be not less than 1/2 inch in height to prevent water overflow.
- e. For roof slopes of 3/12 and over, the metal valley flashing shall have a 36 inch wide underlayment directly under it consisting of a minimum of one layer of Type 15 felt running the full length of the valley, in addition to other specified underlayment.

### 2. At sides of dormers, chimneys and other walls, extend flashing at least 6 inches up vertical surface.

- a. Thoroughly counter flash.
- b. Extend flashing under tile at least 4 inches and turn edge up 1-1/2" inches.

### 3. At lower sides of dormers, chimneys and other walls, extend flashing at least 4 inches up wall and 4 inches over tile, and then thoroughly counter flash.

### 4. At wood saddles and returns, line with 16 oz. copper extending up roof slope not less than 14 inches, and up vertical walls not less than 6 inches, and thoroughly counter flash.

### 5. Make all counter flashing plugged, pointed and secure.

## C. Birdstops, boosters and starters:

1. Install clay birdstops along entire length of all eaves.
2. Install first course of pan tile leaving a 2 to 3 inch overhang at eave.
3. Install 3 inch booster tiles on top of birdstops.
4. Install 15 inch starter tiles on top of booster tiles along perimeter of all eaves.

## D. Fasteners: (Edit to avoid conflicting requirements)

1. At plywood decks, provide minimum of 11 gauge, large headed, corrosion resistant nails of sufficient length to penetrate 3/4 inches into or through the sheathing, whichever is less.
2. At nailable concrete decks, use stainless steel or silicon bronze screw shank nails of sufficient length to penetrate 1/2 to 3/4 their length into, but not through the deck.
3. Provide two fasteners per tile in snow areas.
4. In areas designated by the building officials as being subject to repeated wind velocities in excess of 80 mph, or where roof height exceeds 40 feet above grade, all tiles shall be attached as follows:
  - a. The heads of all tiles shall be nailed.
  - b. The noses of all eave tiles shall be fastened with approved clips.
  - c. All rake tiles shall be nailed with two nails.
  - d. The noses of all hip, ridge and rake tiles shall be set in a bead of approved roofer's mastic.

5. On slopes over 7/12, the nose end of all tiles shall be securely fastened with "Storm Locks" or "Wind Locks", as manufactured by The Wire Works, Inc (800)341-8828, or with other approved fastening system.
6. Provide Twisted Wire Tile-Tye, or Riness Tile-Tie system of brass, copper or galvanized wire as manufactured by The Wire works, Inc. (800)341-8828, or other approved fastening system.

E. Install field tile in courses beginning at eave working up incline of roof deck.

1. Install "S" tiles in vertical rows at a maximum of 11 inch centers, with each tile fastened with one nail, providing a maximum exposure of 15 inches for each tile.
2. As an alternate, end caps can be embedded in cement mortar for a more rustic appearance.
3. As an alternate, cover tiles can be added using booster tiles laid dry or laid in cement mortar.
4. Install hip and ridge tiles:
  - a. Provide cement mortar or other approved materials at all hips and ridges to completely fill voids and to weatherproof the roof.
  - b. All hip, ridge and first row of cover tiles after gable roll shall be set in cement mortar and fastened by non-corrosive nails.

6. All tiles in contact with cement mortar shall be immersed in water for two minutes before laying.

7. To avoid color problems on roof:

- a. Roof load tiles from different pallets.
- b. Visually inspect application from the ground level after installing 100 tiles.
- c. Visually verify that roof tile color is uniform and even, and verify that tile courses are straight and true.

8. Correct any color or installation problems before proceeding with the installation.

9. Complete installation to provide weather tight service.

### 3.03 CLEAN UP

A. Clean roof to remove all pieces of debris.

B. Remove and dispose of all work-related refuse and debris.

END OF SECTION

**Products:**

US Tile Authentic Clay Roof Tiles