

ICC-ES Evaluation Report

ESR-4036

Reissued May 2024


This report also contains:

- FBC Supplement

Subject to renewal May 2025

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<p>DIVISION: 07 00 00— THERMAL AND MOISTURE PROTECTION</p> <p>Section: 07 31 16—Metal Shingles</p> <p>Section: 07 32 19—Metal Roof Tiles</p>	<p>REPORT HOLDER: TEFUTE USA, INC.</p>	<p>EVALUATION SUBJECT: TEFUTE STEEL ROOFING TILES: BOND TILE, CLASSICAL TILE, SHINGLE TILE, ROMAN TILE AND WOOD SHAKE TILE</p>	
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2021, 2018, 2015 and 2012 [International Building Code® \(IBC\)](#)
- 2021, 2018, 2015 and 2012 [International Residential Code® \(IRC\)](#)

Properties evaluated:

- Fire classification
- Wind uplift resistance
- Weather resistance

2.0 USES

The Tefute Steel Roofing Tiles (Bond Tile, Classical Tile, Shingle Tile, Roman Tile and Wood Shake Tile) covered in this report comply with IBC Section 1507.5 and IRC Section R905.4. The tiles have been evaluated as Class A roof covering assemblies on new or existing roofs, when installed in accordance with Section 4.0 of this report.

3.0 DESCRIPTION

3.1 General:

The Tefute metal roof tiles are pressure-formed from nominally 0.0177-inch-thick (0.45 mm) sheet steel complying with ASTM A792, Grade SS, Grade 33, having an aluminum-zinc alloy coating (AZ50). The top surface of the tiles is coated with a layer of stone granules. See [Figure 1](#) for typical panel profiles.

Panel leading edges are bent down $7/8$ -inches (22 mm) with a $1\frac{1}{2}$ inches (38 mm) return for weather protection, interlocking and fastening purposes.

3.2 Bond Tiles, Shingle Tiles and Classical Tiles:

The Bond Tiles, Shingle Tiles and Classical Tiles are nominally $16\frac{9}{16}$ inches (420 mm) wide by $52\frac{3}{4}$ inches (1340 mm) long. Each shingle has a nominal weight of 5.25 pounds (2.38 kg), and an installed weight of 1.0 pound per square foot (4.88 kg/m²).

3.3 Roman Tiles:

The Roman Tiles are nominally $16^{9/16}$ inches (420 mm) wide by $51^{3/16}$ inches (1300 mm) long. Each shingle has a nominal weight of 5.4 pounds (2.4 kg) and an installed weight of 1.05 pounds per square foot (5.13 kg/m^2).

3.4 Wood Shake Tiles:

The Wood Shake Tiles are nominally $16^{9/16}$ inches (420 mm) wide by $52^{3/8}$ inches (1330 mm) long. Each shingle has a nominal weight of 5.4 pounds (2.4 kg), and an installed weight of 1.05 pounds per square foot (5.13 kg/m^2).

3.5 Accessories:

Accessories are formed from the same material as the tiles and include EveRidge, DuraRidge, Angle Hip, Box Barge Cover, and Circular Hip flashing. See [Figure 2](#) for additional flashing details.

3.6 Fasteners:

Fasteners used to attach the tiles and flashing to wood battens shall be minimum No. 11 [0.12-inch-diameter]-by- $1\frac{1}{4}$ -inch (32 mm)-long corrosion resistant, ring-shank roofing nails.

3.7 Underlayment:

Underlayment must be a minimum of one layer of ASTM D226, Type II, asphalt-saturated organic felt or one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection ([ESR-2053](#)).

3.8 Wood Battens:

Wood battens must nominally be $1\frac{1}{2}$ inches (38 mm)-by- $1\frac{3}{4}$ inches (45 mm) standard-grade Douglas fir-larch or better. Wood battens are to be attached to roof sheathing with #9 corrosion resistant screws with sufficient length to penetrate the roof sheathing a minimum of $\frac{1}{2}$ -inch (13 mm).

4.0 INSTALLATION

4.1 Roof Slope:

The tiles must be installed on minimum roof slopes of 3:12 (25 percent slope) over minimum $1\frac{5}{32}$ -inch-thick (11.9 mm) solid or closely fitted plywood sheathing.

4.2 Installation—New Construction:

The Tefute metal roof tiles must be installed in accordance with the manufacturer's published installation instructions, this report, and IBC Section 1507.5 and IRC Section R905.4. The tiles are attached to wood battens spaced at a maximum of $14^{9/16}$ inches (370 mm) on center with fasteners as described in Section 3.6. Each shingle is to be attached to the wood batten with a total of four equally-spaced fasteners. The wood battens are attached to solid or closely-fitted, minimum $1\frac{5}{32}$ -inch-thick (11.9 mm) plywood sheathing installed in accordance with the applicable code. Underlayment as described in Section 3.7 must be installed over the sheathing 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 905.4.3 of the 2012 IBC), as applicable. As an alternative, when used as a component of a classified Class A roof covering, one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection, as described in Section 3.7, must be installed in accordance with Section 4.1 of [ESR-2053](#). When required, 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 and 2012 IBC) or IRC Sections R905.1.2 and R905.4.3.1 (Section R905.4.3.1 2012 IRC), as applicable. Valley flashings must comply with, and be installed in accordance with, IBC Section 1507.5.7 and IRC Section R905.4.6. Other flashing must be installed in accordance with IBC Section 1503.2 or IRC Section R903.2, as applicable.

4.3 Installation—Reroofing

The existing roof covering must be completely removed and the Tefute metal roof tiles installed in accordance with Section 4.2 of this report, except when installation is over existing asphalt shingle roofs as described in this section. 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. The Tefute metal roof tiles may be installed over existing asphalt shingle roofs provided the roof slope and roof deck comply with Section 4.1 of this report and the requirements of IBC Section 1511 (Section 1510 of the 2012 IBC) or IRC Section R908 (Section R907 of the 2012 IRC) are met. Following installation of new underlayment as described and in accordance with Section 3.7, the wood battens must be fastened through the new underlayment and existing roof covering to the roof sheathing in the same manner as described in Section 3.6 and Section 4.2, of sufficient length to penetrate a minimum of $\frac{3}{4}$ inch (19.1 mm) into the roof sheathing or through the roof sheathing, whichever is less. The

Tefute metal roof tiles must be fastened to the wood battens in the same manner as described in Section 4.2. Existing flashings must be removed and replaced with new flashing. New flashing must be installed over and around all existing vents, valleys and chimneys in accordance with this report and the applicable code. Raised perimeters must be covered by Tefute metal roof tiles.

4.4 Wind Resistance:

4.4.1 2021 and 2018 IBC: When installed in accordance with this report, the Tefute tiles are limited to installation in Exposure B areas where the maximum basic design wind speed is 130 mph (209 km/h) on structures with a maximum roof height of 40 feet (12.2 m) or less.

4.4.2 2021 and 2018 IRC, 2015 IBC, 2015 IRC and 2012 IBC: When installed in accordance with this report, the Tefute tiles are limited to installation in Exposure B areas where the maximum ultimate design wind speed is 130 mph (209 km/h) on structures with a maximum roof height of 40 feet (12.2 m) or less.

4.4.3 2012 IRC: When installed in accordance with this report, the Tefute Tiles are limited to installation in Exposure B areas where the maximum basic wind design wind speed is 100 mph (161 km/h) on structures with a maximum roof height of 40 feet (12.2 m) or less.

4.5 Fire Classification:

4.5.1 New Construction Classification: The Tefute Steel Roofing Tiles have been evaluated as Class A roof assemblies under IBC Section 1505.2 and IRC Section R902.1 when installed as described in Section 4.2 of this report over wood battens attached to solid or closely-fitted, minimum ¹⁵/₃₂-inch-thick (11.9 mm) plywood sheathing and one layer of GAF VersaShield® Fire-Resistant Roof Deck Protection ([ESR-2053](#)).

4.5.2 Reroofing Classification: When the Class A assembly described in Section 4.5.1 of this report is installed as described in Section 4.3 over an existing classified asphalt shingle roof covering, the resulting roof classification is Class A.

5.0 CONDITIONS OF USE:

The Tefute Steel Roofing Tiles 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 products are manufactured, identified and installed in accordance with this report, the applicable code and the report holder's published installation instructions. In the event of a conflict between the report holder's installation instructions and this report, this report governs.
- 5.2 Only Tefute steel roofing tile accessories and specified fasteners must be used in the installation of the roof covering system.
- 5.3 Tefute steel tiles are manufactured in Pizhou City, Jiangsu, China, 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 ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-4036) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.
- 7.2 In addition, each package of Tefute steel roofing tiles shall be labeled with the report holder's address and the product name.
- 7.3 The report holder's contact information is the following:

TEFUTE USA, INC.
4545 SPRING VALLEY ROAD
FARMERS BRANCH, TEXAS 75244
(909) 673-1399
www.tefuteusa.com



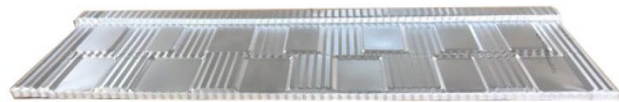
BOND TILE



CLASSICAL TILE



ROMAN TILE



SHINGLE TILE



WOOD SHAKE TILE

FIGURE 1—PANEL PROFILES

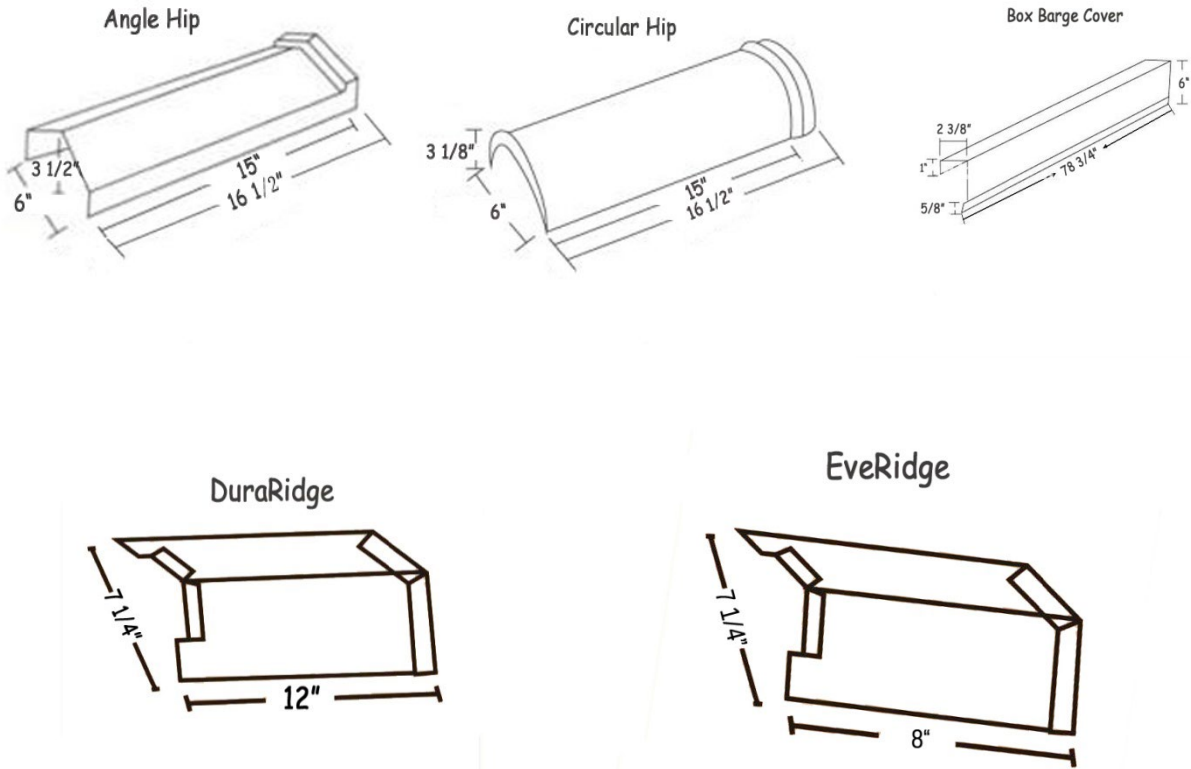


FIGURE 2—TRIM AND FLASHING PROFILES

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Section: 07 31 16—Metal Shingles
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REPORT HOLDER:

TEFUTE USA, INC.

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TEFUTE STEEL ROOFING TILES: BOND TILE, CLASSICAL TILE, SHINGLE TILE, ROMAN TILE AND WOOD SHAKE TILE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Tefute Steel Roofing Tiles (Bond Tile, Classical Tile, Shingle Tile, Roman Tile and Wood Shake Tile), described in ICC-ES evaluation report ESR-4036, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 Florida Building Code—Building
- 2023 Florida Building Code—Residential

2.0 CONCLUSIONS

The Tefute Steel Roofing Tiles, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-4036, comply with the *Florida Building Code—Building* and *Florida Building Code—Residential*. The design requirements shall be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-4036 for the 2021 *International Building Code*® meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable, subject to the following conditions:

1. Fire classification of the Tefute Steel Roofing Tiles (Sections 2.0 and 4.5 of ICC-ES evaluation report ESR-4036) is outside the scope of this supplement.
2. Flashing must be in accordance with Section 1503.2 of the *Florida Building Code—Building* or Sections R903.2 and R905.4.6 of the *Florida Building Code—Residential*, as applicable.
3. Gutters and roof downspouts must be installed in accordance with Section 1503.7 of the *Florida Building Code—Building* or Section R903.4.2 of the *Florida Building Code—Residential*, as applicable.
4. Fasteners must be in accordance with Section 1506.5, 1506.6, or 1506.7, as applicable, of the *Florida Building Code—Building* or Section R904.5 of the *Florida Building Code—Residential*, as applicable.
5. Underlayment and underlayment installation must be in accordance with Section 1507.1.1 of the *Florida Building Code—Building* or Section R905.1.1 of the *Florida Building Code—Residential*, as applicable.

Use of the Tefute Steel Roofing Tiles for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued May 2024.