



LUDOWICI ROOF TILE, INC.
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New Lexington, Ohio 43764
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CLAY ROOF TILES

CSI Section:

07 32 13 Clay Roof Tiles

1.0 RECOGNITION

The Ludowici clay roofing tiles recognized in this report have been evaluated for weather resistance, wind uplift resistance and fire classification and found to comply with IBC Chapter 15 and IRC Chapter 9 for use as a component in a Class A, B, or C roof covering assembly. The following code editions are recognized:

- 2015, 2012, 2009, 2006 International Building Code® (IBC)
- 2015, 2012, 2009, 2006 International Residential Code® (IRC)
- 2016 California Building Code (CBC) - attached Supplement
- 2016 California Residential Code (CRC) - attached Supplement

2.0 LIMITATIONS

Use of the Ludowici clay roofing tiles recognized in this report is subject to the following limitations:

2.1 The roof tiles shall be manufactured, identified and installed in accordance with this report, the applicable code and the Roof Tile Installation Manual. In the event of a conflict this report governs.

2.2 Ludowici’s clay roof tile shall be installed on minimum roof slopes as indicated in Table 2 of this report.

2.3 The supporting structure shall be designed to support the loads and is beyond the scope of this report.

2.4 Tiles installed with less than a 3-inch (76 mm) head lap shall be installed “over solid sheathing complying with the IBC or IRC, as applicable, and fastened with a minimum of one fastener per tile complying with IBC Table 1507.3.7 or IRC Section R905.3.7, as applicable.” [AC180]

3.0 PRODUCT USE

3.1 General: Ludowici’s clay roof tiles recognized in this report are identified in Table 2 and Figures 1 through 10 of this report.

These tiles and their accessory trim pieces:

- satisfy the requirements of ASTM C1167
- provide a Class A Fire Classification when tested on combustible decks in accordance with ASTM E108

3.2 Anchoring: Ludowici’s clay roof tiles may be anchored by fasteners complying with Section 1507.3.6 of the IBC or R905.3.6 of the IRC, as applicable.

3.3 Wind loads on clay tile roof coverings shall be in accordance with Section 1609.5 of the IBC. Wind resistance is addressed in Section 4 of this report.

4.0 PRODUCT DESCRIPTION

4.1 General: Ludowici’s clay roof tile installation shall be in accordance with the applicable code, the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions, dated August 2015, published by the Tile Roofing Institute and the Western States Roofing Contractors Association, and this report. In the event of a conflict, provisions of this report govern. The TRI manual is available for download attached to ER-2015 from the UES website at www.uniform-es.org.

4.2 Attachment: Tile shall be attached to the roof structure based on the applicable code as noted in Table 1 of this report:

TABLE 1
ATTACHMENT DESIGN

| APPLICABLE CODE | CRITERIA FOR APPLICABILITY | DESIGN INFORMATION LOCATION |
|------------------------------|--|--|
| 2015 or 2012 IBC | Ultimate Design Wind Speeds (V_{ult}) \leq 130 MPH and Mean Roof Height \leq 60 feet | Roof Tile Installation Manual & Table 1507.3.7 of the applicable IBC |
| 2009 or 2006 IBC | Basic Wind Speed (3 sec gust) \leq 100 mph and Mean Roof Height \leq 60 feet | |
| 2015, 2012, 2009 or 2006 IRC | Mean Roof Height \leq 40 feet | Roof Tile Installation Manual & Section R905.3.7 |

4.3 Fire Classification: Ludowici’s clay roof tiles, installed in accordance with this evaluation report, are Class A roof coverings when installed in accordance with Section 1505.2 of the IBC and Section R902.1 of the IRC, as applicable.

When installed with ASTM D226, Type II, underlayment in accordance with Section 1507.3.3 of the IBC and Section R905.3.3 of the IRC and this report, the medium profile French Tile and the high profile Straight Barrel Mission Tiles are Class A roof coverings.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





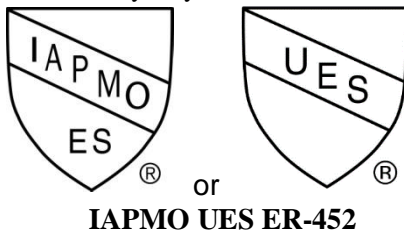
When installed with Ludowici Pro 70 underlayment recognized in IAPMO UES ER-487 or MB Technology TU70 underlayment, recognized in a current and valid evaluation report from a recognized agency, the following roof tiles, from Table 2 of this report, are Class A roof coverings:

- **Shingle Tiles:** Antique, Brittany, Crude, Colonial, Provincial, Norman, Calais, Georgian
- **Interlocking Tiles:** Americana, Williamsburg, Classic, Lanai, LudoSlate, LudoShake
- **Spanish Tiles:** Spanish 13¼, Spanish 18¾
- **Mission Tiles:** Palm Beach Mission, Cubana
- **Bear Creek Series:** Century Shake, Lexington Slate

4.4 Reroofing Applications: Reroofing applications shall follow the requirements of the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions. In addition, Section 1511 of the 2015 IBC, Section 1510 of the 2012, 2009 and 2006 IBC or Section R908 of the 2015 IRC, Section R907 of the 2012, 2009 and 2006 IRC, as applicable shall be met.

5.0 IDENTIFICATION

Shipping pallets are identified with the report holder’s name (Ludowici), manufacturing address, product name, installed weight, approved inspection agency, the UES Mark of conformity and evaluation report number (ER-452). Either UES Mark of Conformity may be used as shown below:



6.0 SUBSTANTIATING DATA

Data in accordance with ICC-ES AC180, dated February 2012 (editorially revised March 2018), data in accordance with SBCCI SSTD 11-97 Test Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles, manufacturer’s descriptive literature and installation instructions. Test results are from laboratories in compliance with ISO/IEC 17025.

Ludowici’s clay roof tiles are manufactured in New Lexington, Ohio, under a quality control program.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Ludowici clay roof tiles to assess their conformance to the codes and standards shown in Section 1.0 of this report and documents the product’s certification.

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For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org



**TABLE 2
LUDOWICI CLAY TILES**

| TILE PROFILE CATEGORY AND NAME | SEE FIGURE NO. | INSTALLED DRY WEIGHT ¹ (psf) | DIMENSIONS (inch) | | | HEADLAP (inch) | TILE TYPE ⁵ (ASTM C1167) |
|--|----------------|---|-------------------|-----------------------|-----------|---------------------|-------------------------------------|
| | | | LENGTH | WIDTH | THICKNESS | | |
| Rustic Shingle Tiles | | | | | | | |
| - Antique | 5 | 16.5 | 12 | 7 | 1/2 | 7 ³ | Type III-Flat |
| - Brittany | 5 | 19 | 12 | 7 | 5/8 | 7 ³ | Type III-Flat |
| - Crude | 5 | 19.35 | 12 | 6 | 5/8 | 7 ³ | Type III-Flat |
| - Colonial | 5 | 18 | 14-5/8 | 7-3/8 | 5/8 | 8-5/16 ³ | Type III-Flat |
| Formal Shingle Tiles | | | | | | | |
| - Provincial | 5 | 15.75 | 15 | 7 | 1/2 | 8-1/2 ³ | Type III-Flat |
| - Norman | 5 | 16 | 15 | 7 | 1/2 | 8-1/2 ³ | Type III-Flat |
| - Calais | 5 | 16 | 15 | 7 | 1/2 | 8-1/2 ³ | Type III-Flat |
| - Georgian | 5 | 16 | 15 | 8 | 1/2 | 8-1/2 ³ | Type III-Flat |
| Interlocking Tiles | | | | | | | |
| - Americana 14" | 2 | 8 | 14 | 9 | 3/4 | 3 ² | Type III-Flat |
| - Americana 16" | 1 | 7.2 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - Williamsburg 14" | 2 | 8 | 14 | 9 | 3/4 | 3 ² | Type III-Flat |
| - Williamsburg 16" | 1 | 7.25 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - Classic 14" | 2 | 8 | 14 | 9 | 3/4 | 3 ² | Type III-Flat |
| - Classic 16" | 1 | 7.2 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - Lanai 14" | 2 | 8 | 14 | 9 | 3/4 | 3 ² | Type III-Flat |
| - Lanai 16" | 1 | 7.3 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - LudoSlate | 1 | 6 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - LudoShake | 1 | 6 | 16 | 10-3/4 | 3/4 | 3 ² | Type III-Flat |
| - French Tile | 6 | 10.25 | 16-1/4 | 9 | 3/8 | 2-7/8 ² | Type II-Medium |
| - Century Shake | 3 | 6.8 | 14-1/2 | 10-1/2, 7-3/16, 5-1/2 | 3/4 | 3 ² | Type III-Flat |
| - Lexington Slate | 4 | 7.85 | 10-1/2 | 14-3/4, 11-3/8, 7-5/8 | 3/4 | 3 ² | Type III-Flat |
| Spanish Tile | | | | | | | |
| - Spanish 13 ¹ / ₄ | 7 | 9 | 13-1/4 | 9-3/4 | 1/2 | 3 ⁴ | Type I-High Profile |
| - Spanish 18 ³ / ₈ | 7 | 8 | 18-3/8 | 9-3/4 | 1/2 | 3 ⁴ | Type I-High Profile |
| Mission Tile | | | | | | | |
| - Straight Barrel Mission 18 ³ / ₈ | 8 | 11.65 | 18-3/8 | 8 | 1/2 | 3 ³ | Type I-High Profile |
| - Straight Barrel Mission 16 | 8 | 11.9 | 16 | 8 | 1/2 | 3 ³ | Type I-High Profile |
| - Straight Barrel Mission 14 ¹ / ₄ | 8 | 12.5 | 14-1/4 | 8 | 1/2 | 3 ³ | Type I-High Profile |
| - Palm Beach Mission | 10 | 11 | 18-3/8 | 8 | 1/2 | 3 ³ | Type I-High Profile |
| - Cubana | 9 | 12 | 18-3/8 | 8-1/8 | 1/2 | 3 ³ | Type I-High Profile |

For SI: 1 inch = 25.4 mm, 1 psf = 4.882 kg/m²

¹Approximate weight for an installation with the minimum slope and headlap indicated.

² Minimum slope of 3:12 (25%)

³ Minimum slope of 5:12 (42%)

⁴ Minimum Slope of 4:12 (33%)

⁵ Tiles are Grade 1 - Providing resistance to severe frost action, in accordance with ASTM C1167.

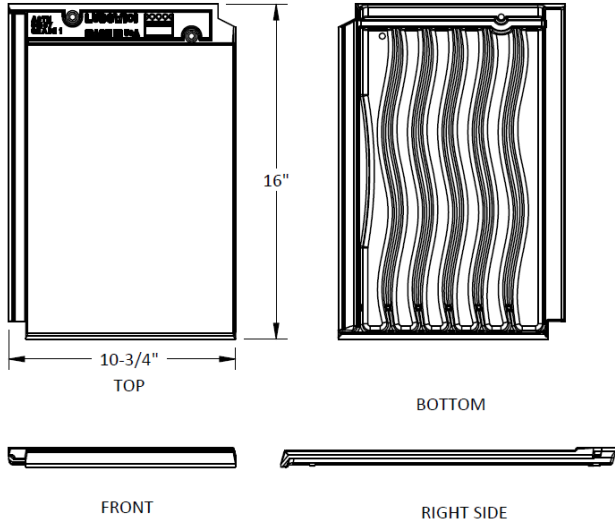


FIGURE 1 - INTERLOCKING TILE 16" MORANDO SERIES
 LudoSlate, LudoShake, Americana 16",
 Classic 16", Lanai 16", Williamsburg 16"

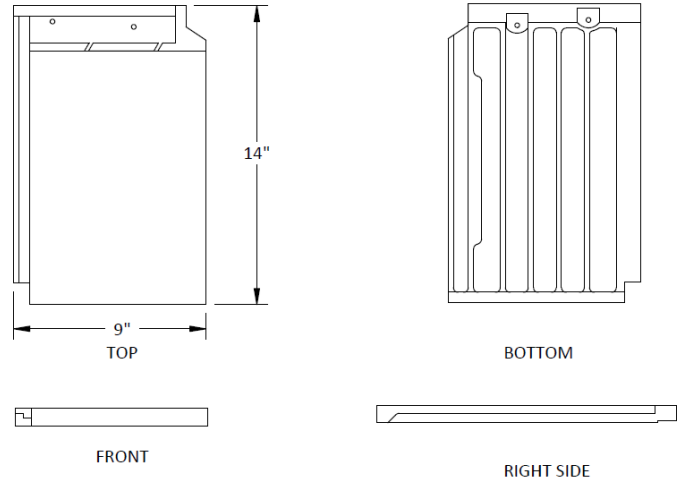


FIGURE 2 - INTERLOCKING TILE 14" MORANDO SERIES
 Americana 14", Classic 14", Lanai 14", Williamsburg 14"

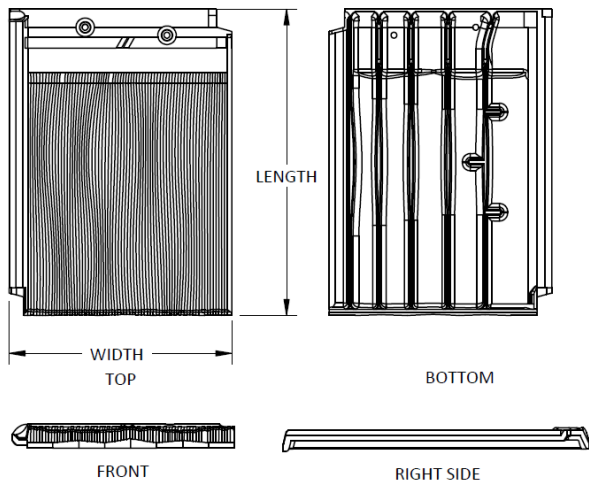


FIGURE 3 - INTERLOCKING TILE BEAR CREEK SERIES
 Century Shake

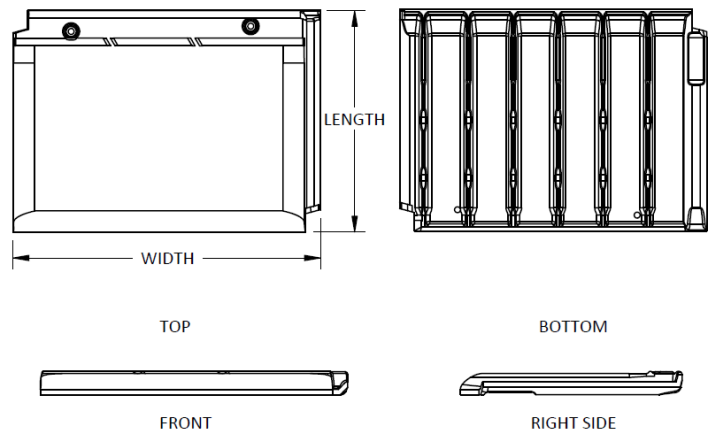


FIGURE 4 - INTERLOCKING TILE BEAR CREEK SERIES
 Lexington Slate

For SI: 1 inch = 25.4 mm

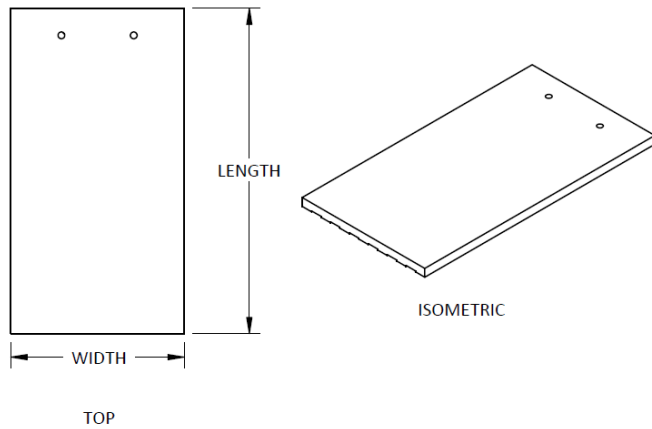


FIGURE 5 - SHINGLE TILES

Antique, Brittany, Calais, Colonial, Crude, Georgian, Norman, Provincial

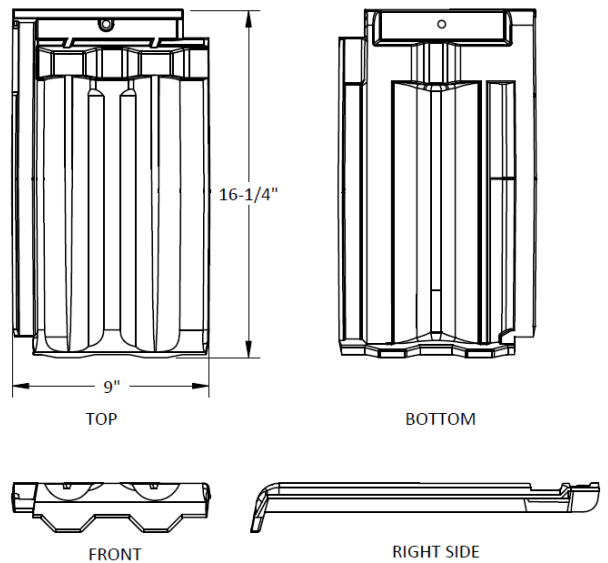


FIGURE 6 - MEDIUM PROFILE TILE

French

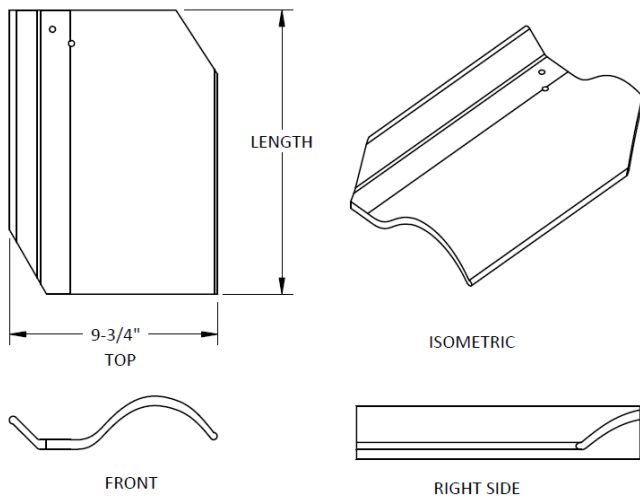


FIGURE 7 - ONE PIECE HIGH PROFILE BARREL

13-1/4" Spanish, 18-3/8" Spanish

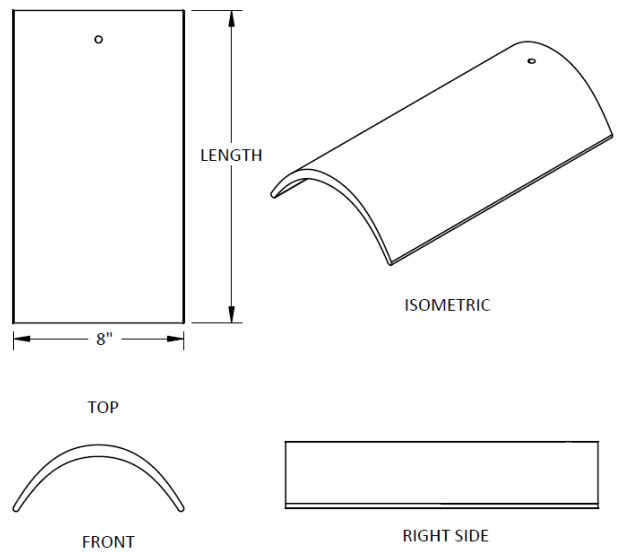
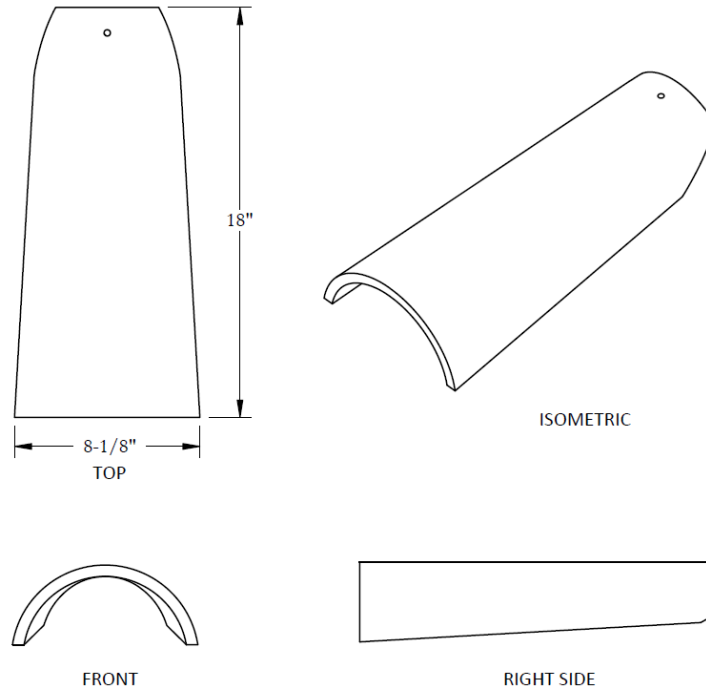


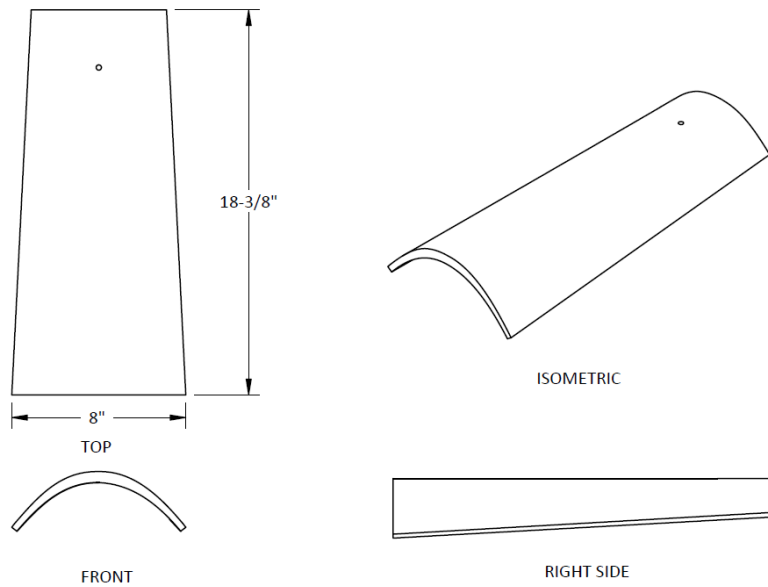
FIGURE 8 - TWO PIECE HIGH PROFILE BARREL

14-1/4" Straight Barrel Mission, 16" Straight Barrel Mission, 18-3/8" Straight Barrel Mission

For SI: 1 inch = 25.4 mm



**FIGURE 9 - TWO PIECE HIGH PROFILE BARREL
Cubana**



**FIGURE 10 - TWO PIECE HIGH PROFILE BARREL
18-3/8" Palm Beach**

For SI: 1 inch = 25.4 mm

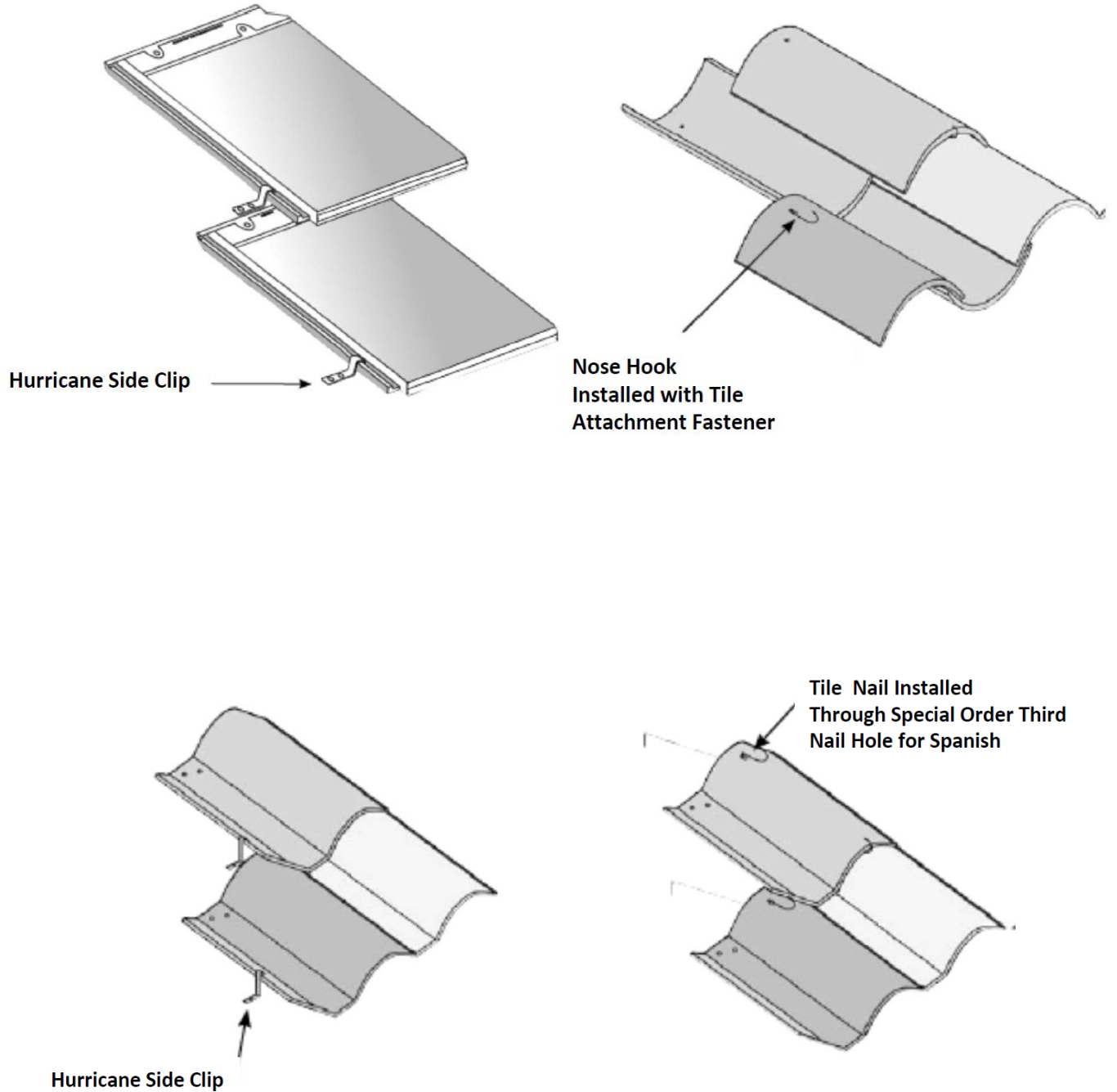


FIGURE 11 – HURRICANE CLIPS



CALIFORNIA SUPPLEMENT

LUDOWICI ROOF TILE, INC.

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CLAY ROOF TILES

CSI Section:

07 32 13 Clay Roof Tiles

1.0 RECOGNITION

The Ludowici clay roof tiles evaluated in IAPMO UES ER-452 are satisfactory alternatives to the following codes and regulations:

- 2013 California Building Code (CBC)
- 2013 California Residential Code (CRC)

2.0 PRODUCT USE

2.1 GENERAL

The Ludowici clay roof tiles may be used as a Class A, B, or C roof covering system complying with Sections 1505.1.1 of the CBC or R902.1.1 of the CRC; Sections 1505.1.2 of the CBC or R902.1.2 of the CRC; or Sections 1505.1.3 of the CBC or R902.1.3 of the CRC, respectively.

The design and installation of the Ludowici clay roof tiles shall be in accordance with Sections 1507.3.10 and 1512 of the CBC or Section 905.3 of the CRC, as applicable, and ER-452.

Ludowici clay roof tiles may be used in “new buildings located in any Fire Hazard Severity Zone or any Wildland-Urban Interface Fire Area designated by the enforcing agency constructed after the application date shall comply with the provisions” in accordance with Sections 701A.3 and 705A of the CBC or Sections R327.1.3.1 and R327.5 of the CRC, as applicable, and with the 2012 IBC as presented in ER-452.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org