



LUDOWICI ROOF TILE, INC. 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 be in compliance with IBC Chapter 15 and IRC Chapter 9 for use as a component in a Class A, B or C roof covering. The following code editions are recognized:

- 2015, 2012, 2009, 2006 International Building Code® (IBC)
- 2015, 2012, 2009, 2006 International Residential Code® (IRC)
- 2013 California Building Code (CBC) and 2013 California Residential Code (CRC) - See attached Supplement

2.0 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 must 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 can 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 uplift 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 below:

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.

When installed with 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:



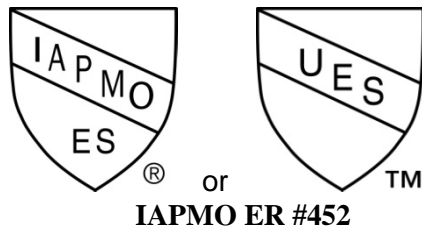


- **Shingle Tiles:** Antique, Brittany, Crude, Colonial, Provincial, Norman, Calais, Georgian
- **Interlocking Tiles:** Americana, Williamsburg, Classic, Lanai, LudoSlate, LudoShake
- **Spanish Tiles:** Spanish 13¼, Spanish 18¾
- **Mission Tiles:** Palm Beach Mission, Cubana
- **Bear Creek Series:**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



8.0 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.

Brian Gerber, P.E., S.E.
Vice President, Technical Operations
Uniform Evaluation Service

Richard Beck, PE, CBO, MCP
Vice President, Uniform Evaluation Service

GP Russ Chaney
CEO, The IAPMO Group

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

6.0 SUBSTANTIATING DATA

Data in accordance with ICC-ES AC180, dated February 2012 (editorially revised April 2015), 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 CONTACT INFORMATION

Ludowici Roof Tiles, Inc.
4757 Tile Plant Road
New Lexington, Ohio 43764
www.ludowici.com



**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

¹ Approximate 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.

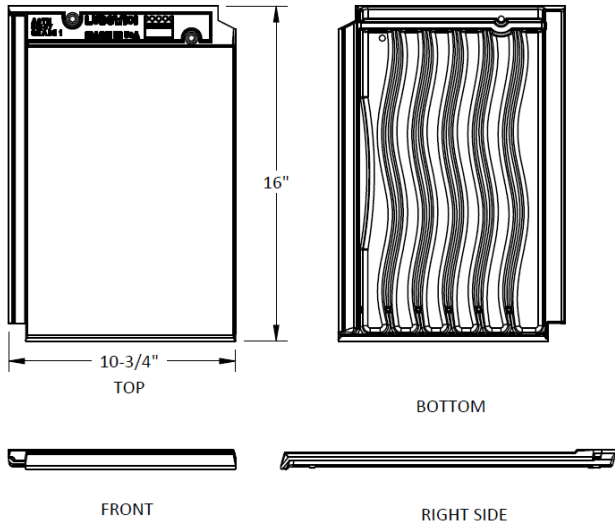


FIGURE 1 - INTERLOCKING TILE 16" MORANDO SERIES
LudoSlate, LudoShake, Americana 16",
Classic 16", Lanai 16", Williamsburg 16"

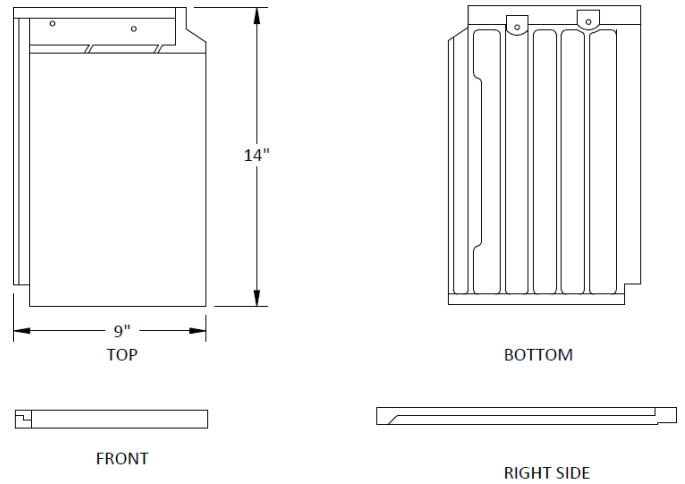


FIGURE 2 - INTERLOCKING TILE 14" MORANDO SERIES
Americana 14", Classic 14", Lanai 14", Williamsburg 14"

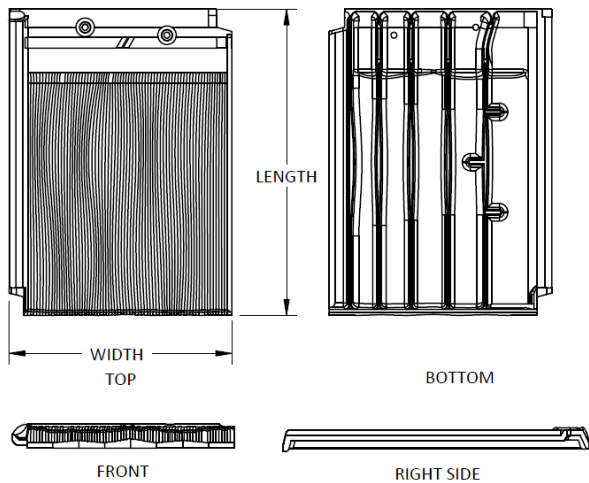


FIGURE 3 - INTERLOCKING TILE BEAR CREEK SERIES
Century Shake

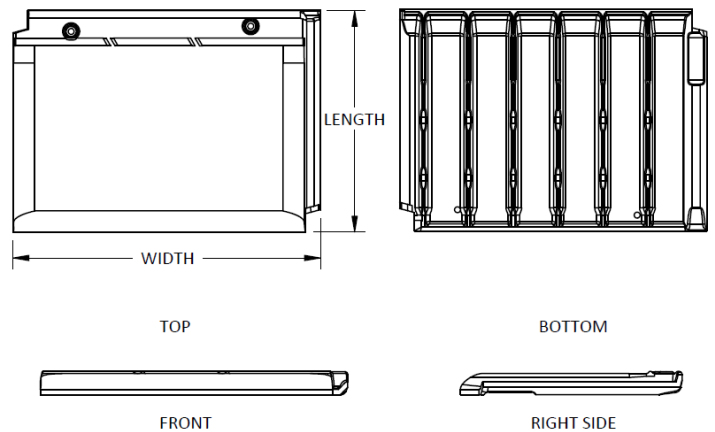


FIGURE 4 - INTERLOCKING TILE BEAR CREEK SERIES
Lexington Slate

For SI: 1 inch = 25.4 mm

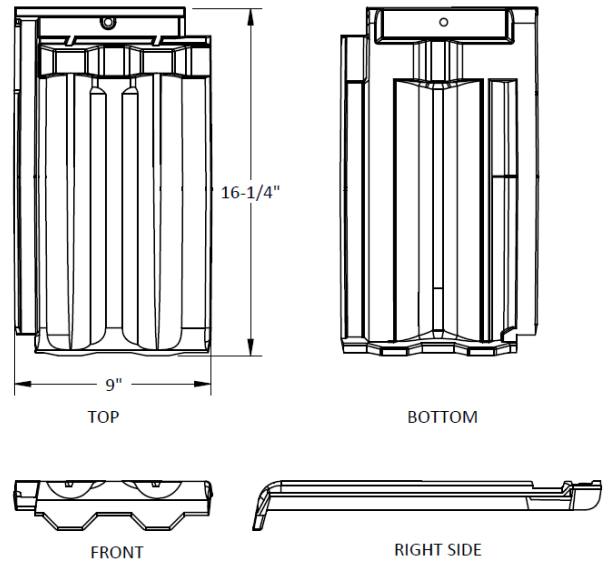
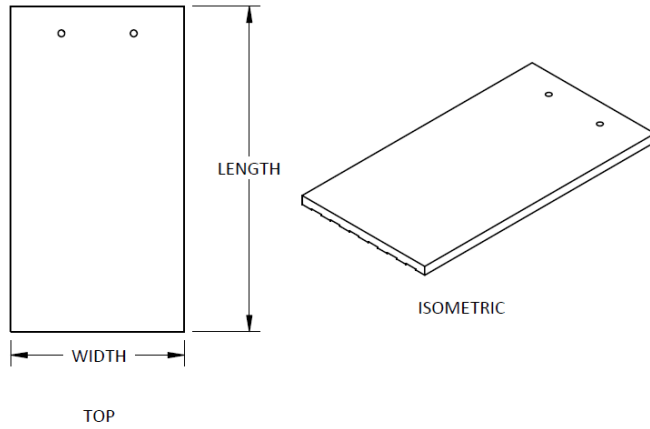


FIGURE 5 - SHINGLE TILES
 Antique, Brittany, Calais, Colonial, Crude, Georgian, Norman, Provincial

FIGURE 6 - MEDIUM PROFILE TILE
 French

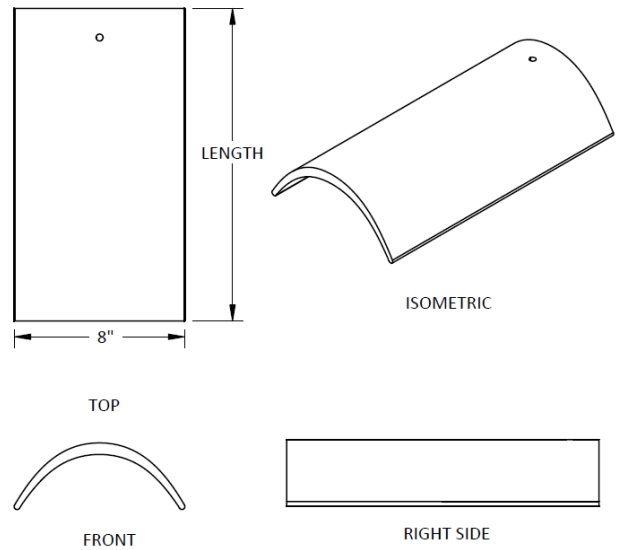
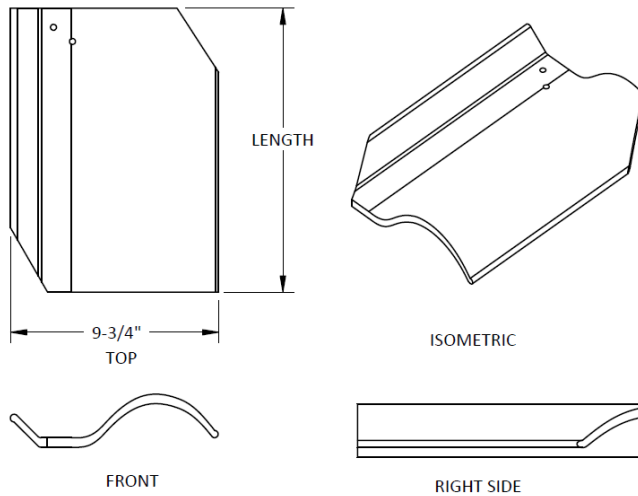
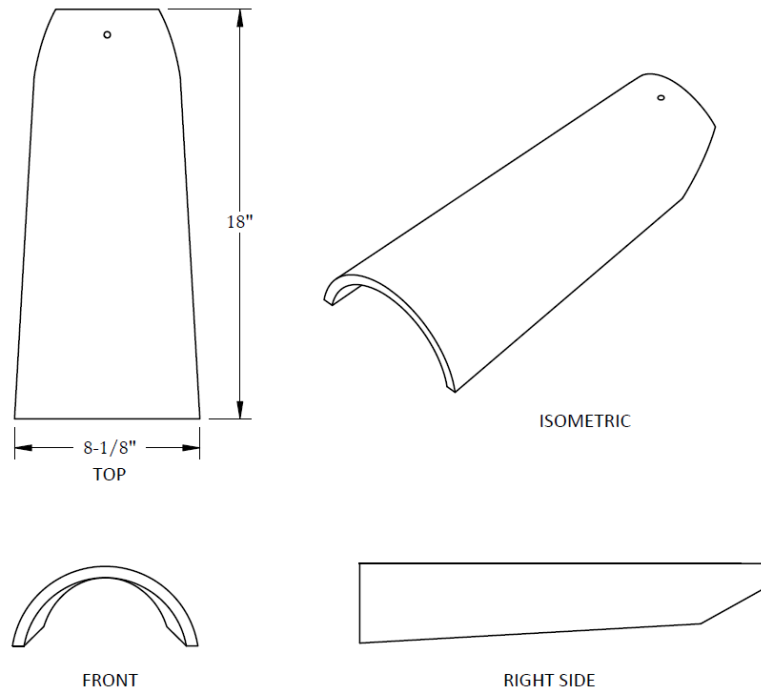


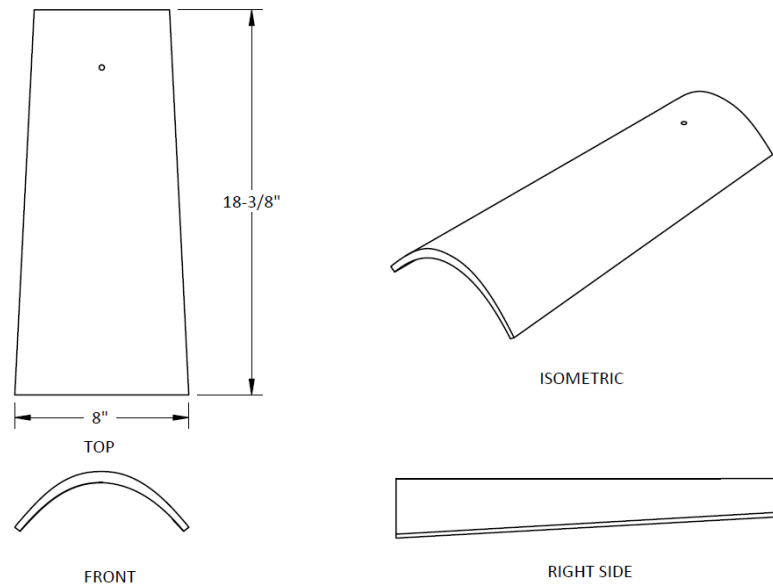
FIGURE 7 - ONE PIECE HIGH PROFILE BARREL
 13-1/4" Spanish, 18-3/8" Spanish

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

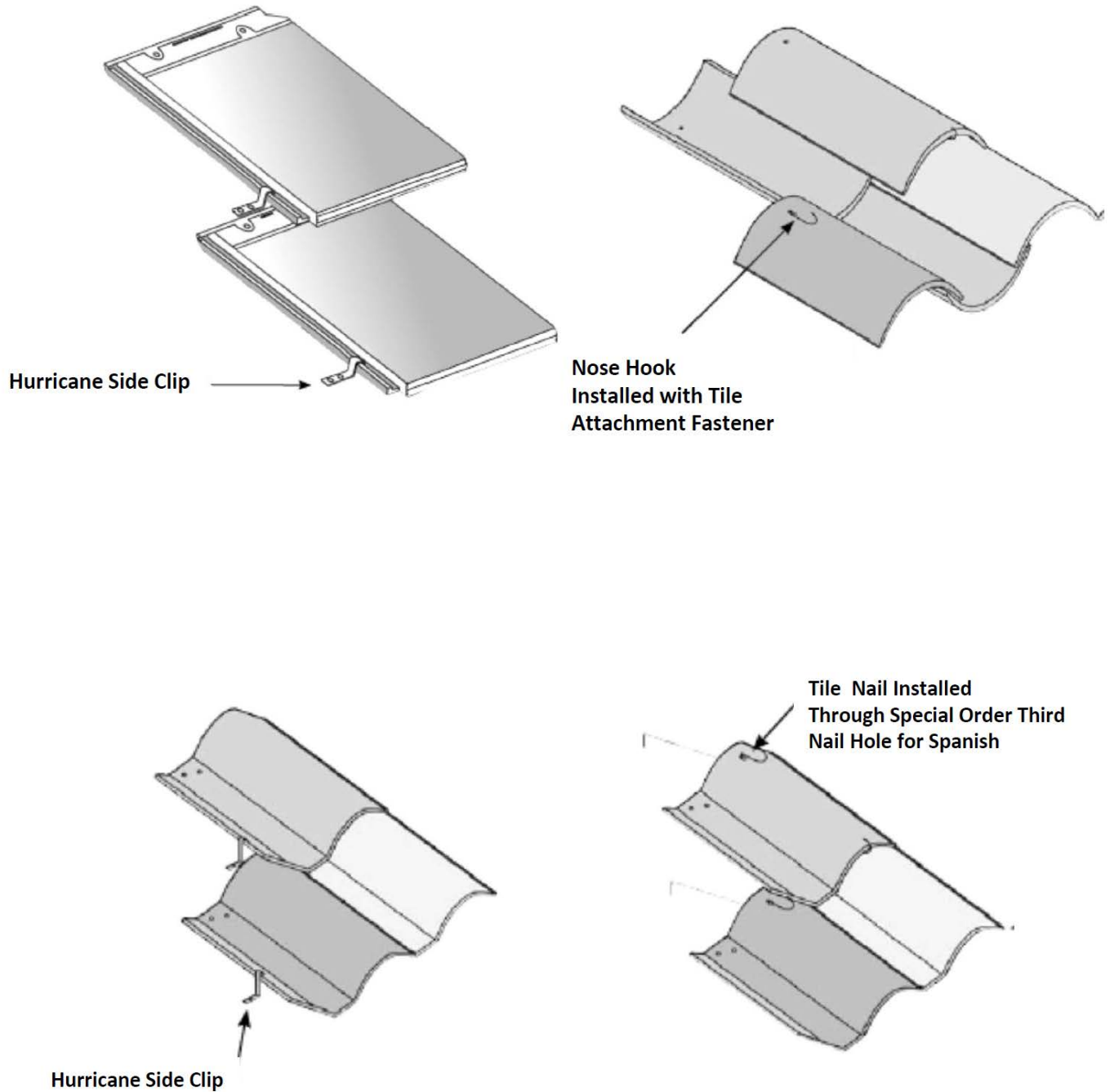


FIGURE 11 – HURRICANE CLIPS



CALIFORNIA SUPPLEMENT

LUDOWICI ROOF TILE, INC. CLAY ROOF TILES

Ludowici Roof Tiles, Inc.
4757 Tile Plant Road
New Lexington, Ohio 43764
www.ludowici.com

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 systems 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 at info@uniform-es.org