



CLAY TILE VENTURE INC. / dba REDLAND CLAY TILE – CLAY ROOF TILES

CSI Section: 07 32 13 Clay Roof Tiles

1.0 RECOGNITION

The Redland Clay Tile’s roofing tiles recognized in this report have been evaluated for weather resistance, wind uplift resistance and fire classification and found to be comply 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
- 2014 Florida Building Code, Building (FBC, Building) and 2014 Florida Building Code, Residential (FBC, Residential) - 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 Redland Clay Roofing Tile’s “clay roof tile shall be installed on roof slopes of 2½ units vertical in 12 units horizontal (21-percent slope) or greater.” IBC Section 1507.3.2 and IRC Section R95.3.2, as applicable.

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

3.0 PRODUCT USE

3.1 General: Redland Clay Roof Tiles recognized in this report are identified in Table 2 and Figures 1 through 14 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: Redland Clay Tile’s 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 uplift resistance is addressed in Section 4 of this report.

4.0 PRODUCT DESCRIPTION

4.1 General: Redland Clay Tile’s 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 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: Redland Clay Tile’s roof tiles, installed in accordance with this evaluation report, are Class A fire-retardant roof coverings in accordance with Section 1505.2 of the IBC and Section R902.1 of the IRC, as applicable.

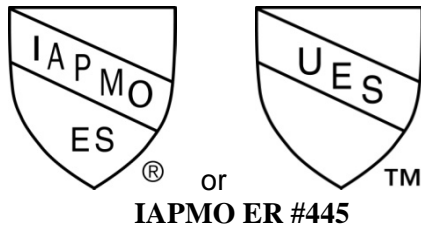
4.4 Reroofing Applications: Reroofing applications shall follow the requirements of the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions. In addition, Section 1511 of the 2015 IBC, Section 1510 of the 2012, 2009 and 2006 IBC or Section R908 of the 2015 IRC, Section R907 of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

5.0 IDENTIFICATION

Shipping pallets are identified with the report holder’s name (Redland Clay Tile), manufacturing address, product name, installed weight, approved inspection agency, the UES Mark of conformity and evaluation report number (ER-445). Either UES Mark of Conformity may be used as shown below:

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.





6.0 SUBSTANTIATING DATA

Data in accordance with ICC-ES AC180, dated February 2012 (editorially revised April 2015), manufacturer's descriptive literature and installation instructions. Test results are from laboratories in compliance with ISO/IEC 17025.

Redland Clay Tile roof tiles are manufactured in Tecate, Baja California, Mexico, under a quality control program.

7.0 CONTACT INFORMATION

Clay Tile Venture Inc. /Redland Clay Tile
9155 Brown Deer Road, Suite 5
San Diego, CA 92121
www.redlandclaytile.com

8.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research carried out by IAPMO Uniform Evaluation Service on Eagle Roofing Product's Concrete Roof Tiles to assess its 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

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www.uniform-es.org or email at info@uniform-es.org



Table 2 – Redland Clay Tiles

Tile	See Figure No's.	Installed Dry Weight ¹ (psf)	Center to Center Spacing (inch)	Dimensions (inch)					Tile Type/Grade ²
				Length	Width		Thickness	Height	
					Large end	Small end			
Two piece Mission Tile	1, 10	10.7	11	20	8 ^{1/2}	7	1/2	3	Type I –High Profile/ Grade 2
Two piece Baja Mission Tile	2, 10	9.4	9	17 ^{1/2}	6 ^{3/4}	6	1/2	2 ^{3/4}	Type I-High Profile/ Grade 2
S tile	3, 11	7.3	11	18	12	-	1/2	2 ^{3/4}	Type I-High Profile/ Grade 2
Alfaro	4	8.1	8	18	10	-	1/2	2 1/2	Type I-High Profile/ Grade 2
Cambridge	6, 14	16	-	15	6 ^{3/4}	-	5/8	-	Type III-Flat/ Grade 2
Napa "S"	5, 13	10.5	8 ^{1/2}	13 ^{3/4}	10.5	-	1/2	2 ^{5/16} max	Type I High Profile/ Grade 1
Roman Pan	7, 12	10.5	13	17 ^{3/4}	11	-	5/8	2 ^{3/8}	Type I-High Profile/ Grade 2
Junipero	8	14	9	16 ^{3/4}	7	5 ^{3/4}	1/2	3 ^{1/8}	Type I-High Profile/ Grade 2
Cabrillo "S"	-	7.5	11	20	12.2	-	1/2	3	Type I-High Profile/ Grade 2
Angulo	9	13	9	18 ^{1/2}	7 ^{1/4}	5 ^{7/8}	1/2	3 ^{1/2}	Type I-High Profile/ Grade 3

For SI: 1 inch = 25.4 mm, 1 psf = 4.88 kg/m²

¹Approximate weight for an installation with a head-lap of 3 inches when installed at the center to center spacing shown. Cambridge shingle is based on a 8^{1/2} head lap.

²Tile type and grade are based on ASTM C1167.

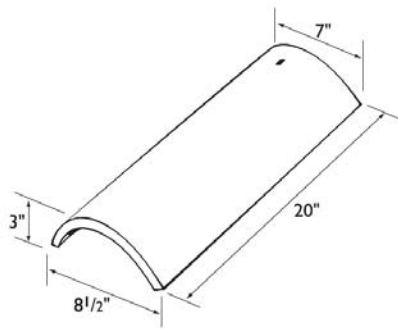


Figure 1
Two-piece Mission

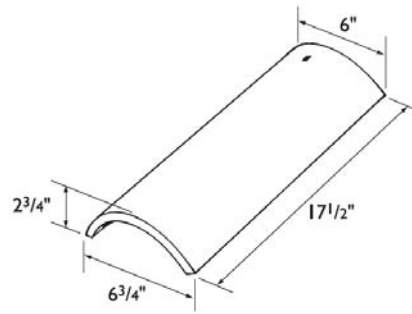


FIGURE 2
Two piece Baja Mission

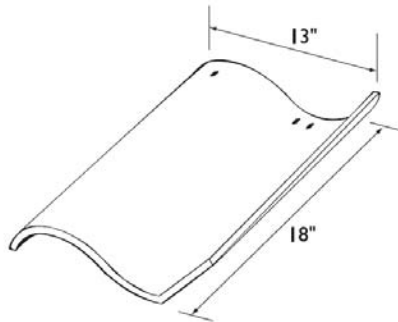


FIGURE 3
S-TILE

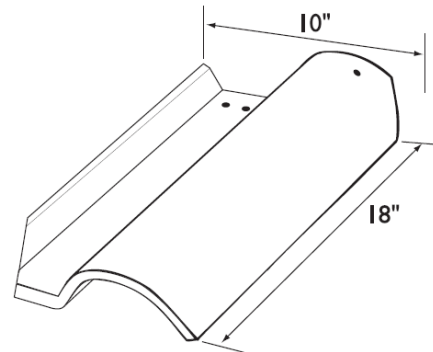


FIGURE 4
ALFARO

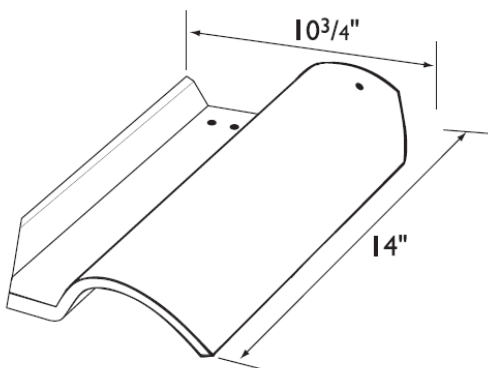


FIGURE 5
NAPA

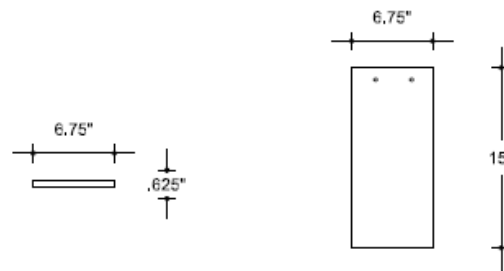
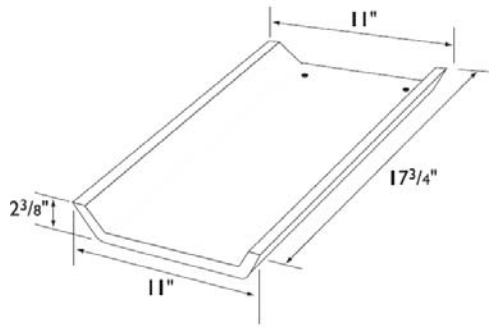
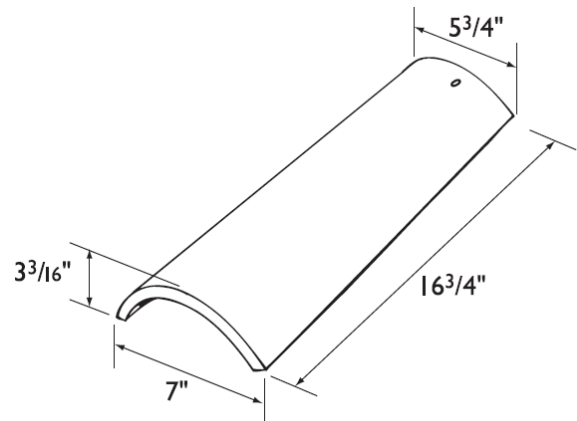


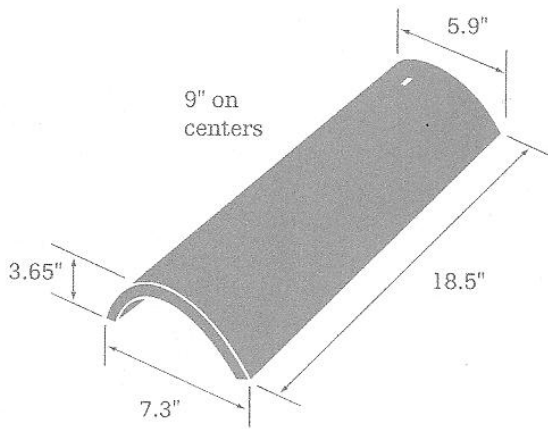
FIGURE 6
CAMBRIDGE



**FIGURE 7
ROMAN PAN**



**FIGURE 8
JUNIPERO**



**FIGURE 9
ANGULO**

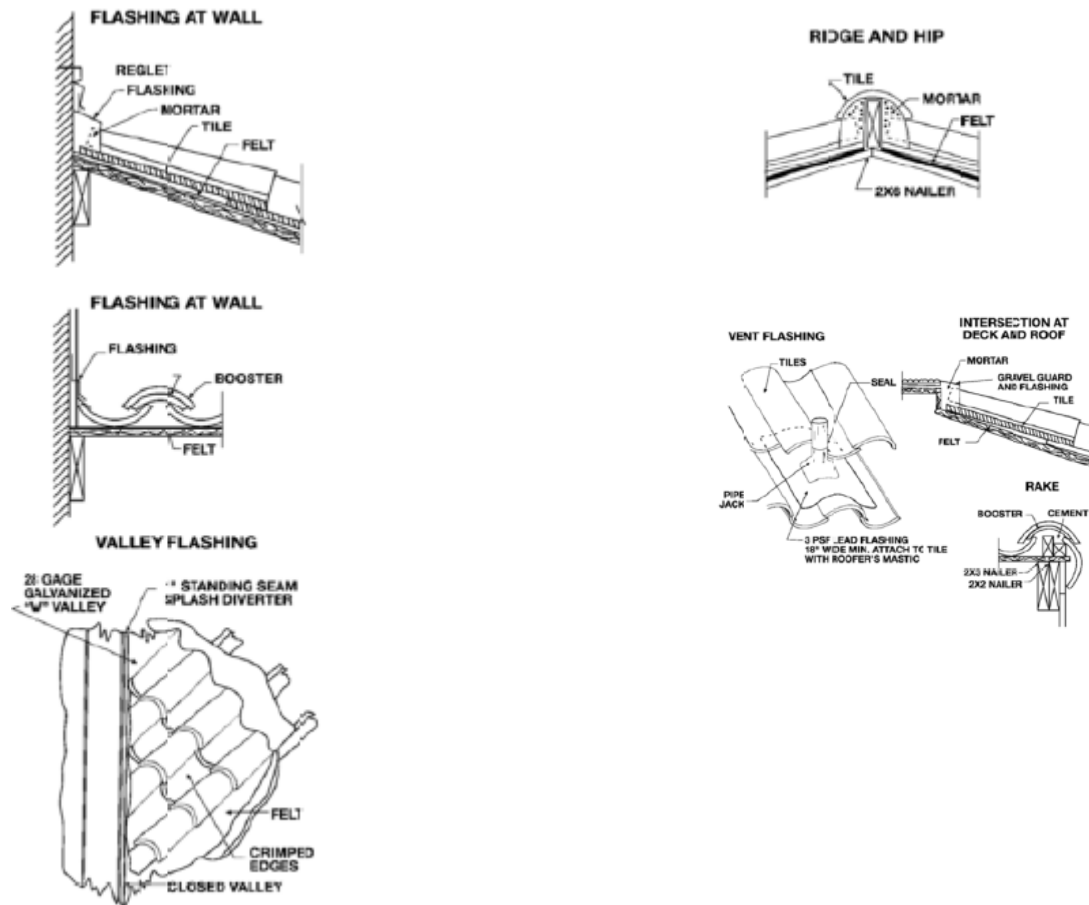


FIGURE 10
MISSION AND BAJA MISSION DETAILS

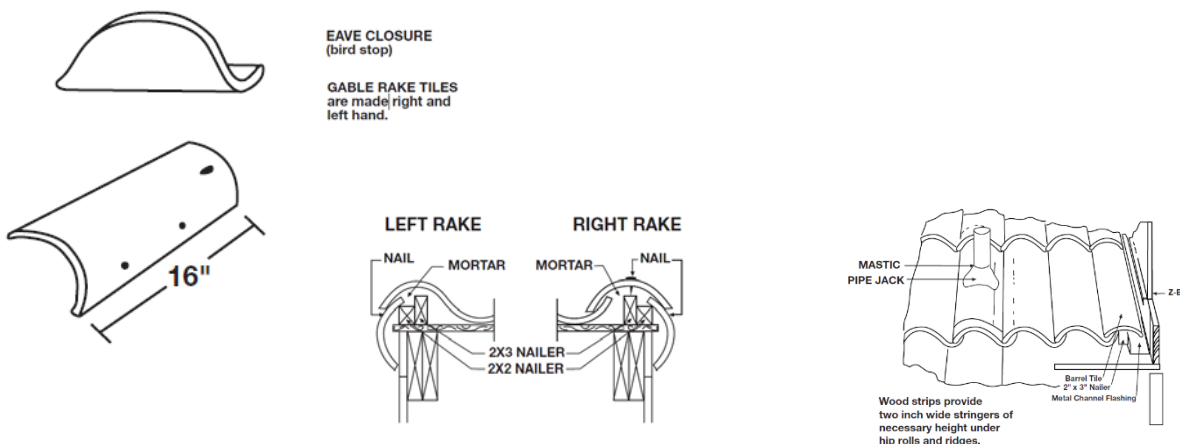


FIGURE 11
S-TILE DETAILS

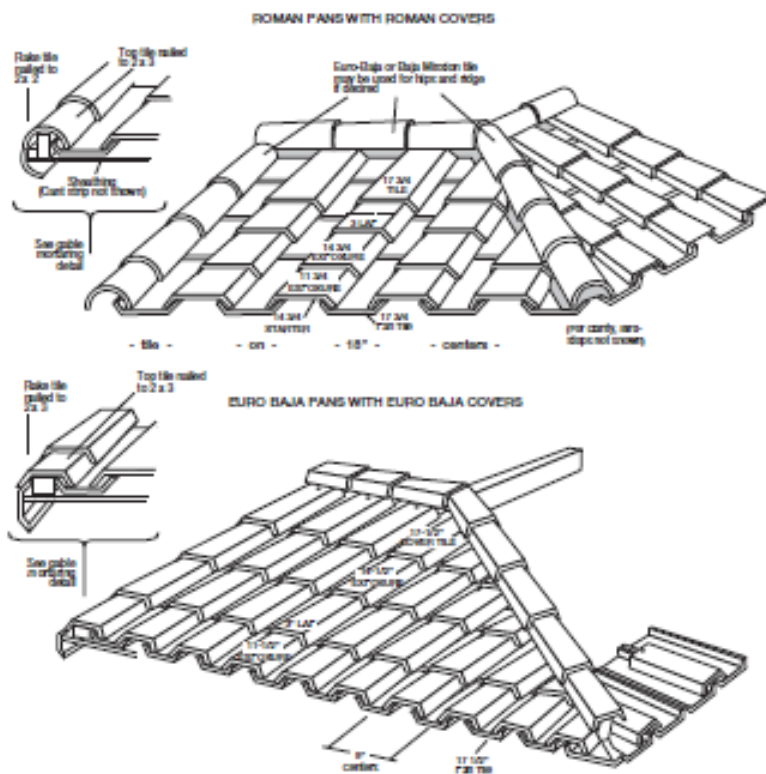
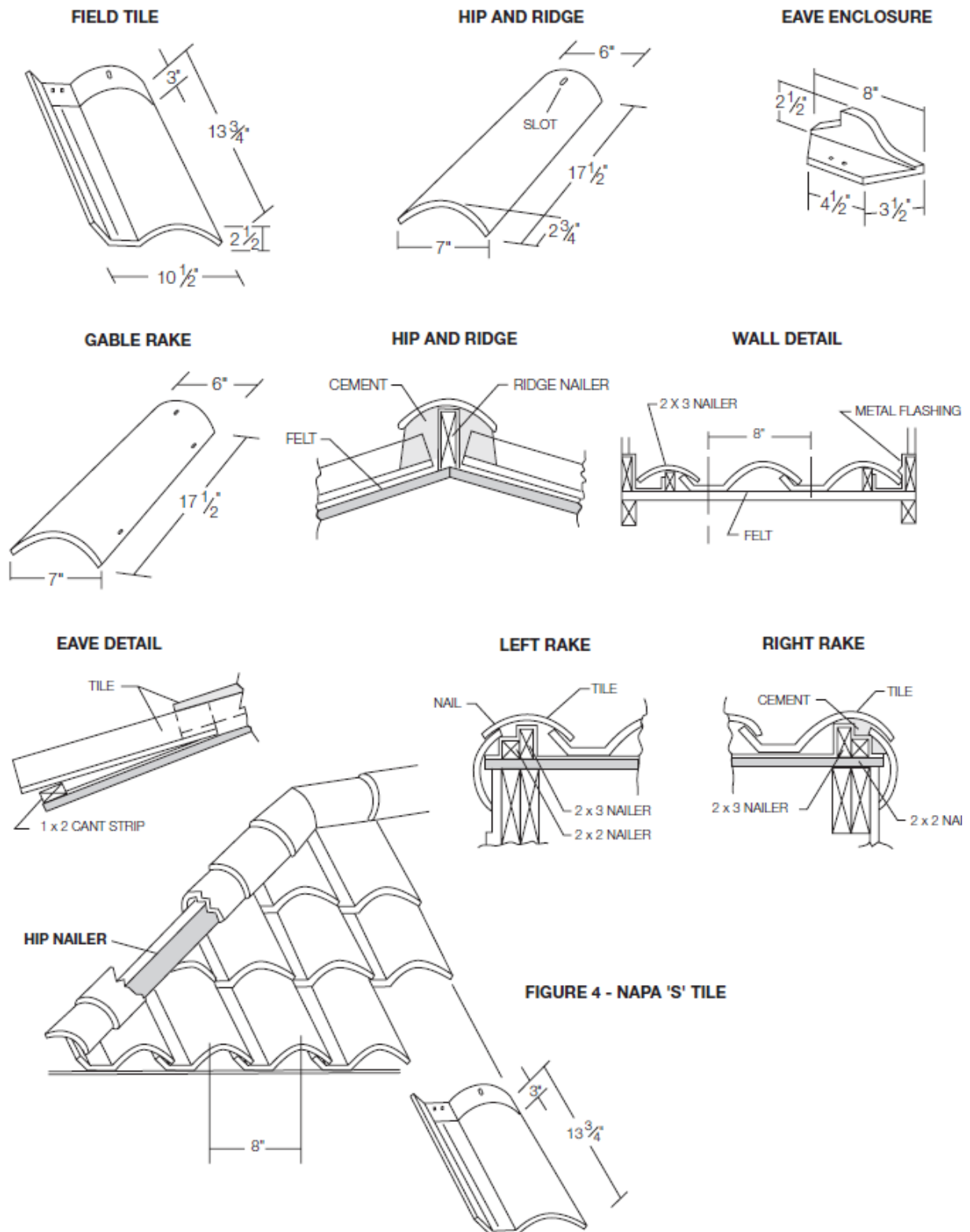
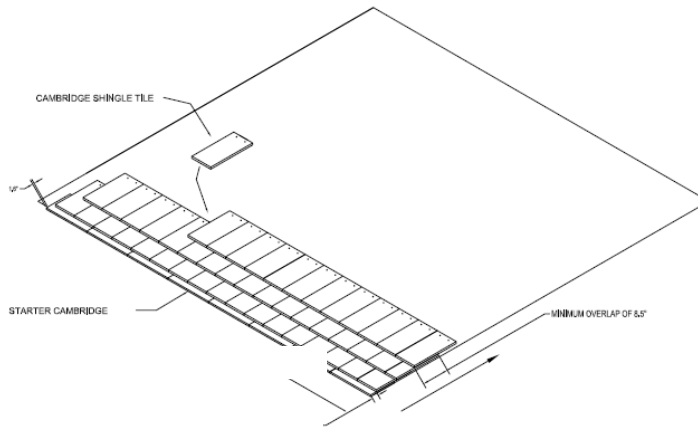


FIGURE 12
ROMAN PAN TILE DETAILS

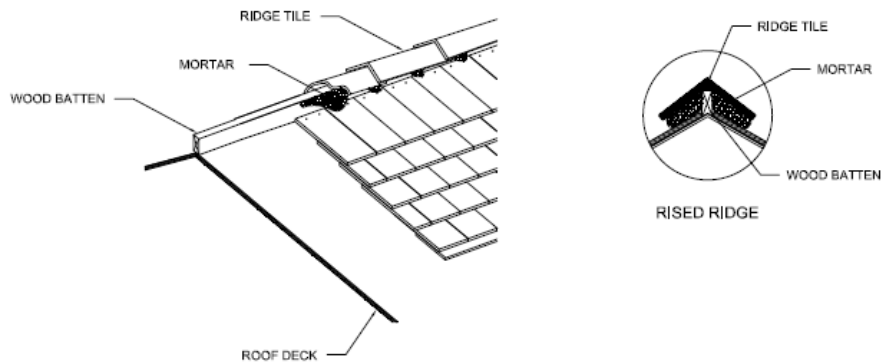




**FIGURE 13
NAPA "S" TILE DETAILS**



CAMBRIDGE SHINGLE TILE LAYOUT



**FIGURE 14
CAMBRIDGE DETAILS**



CALIFORNIA SUPPLEMENT

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CSI Section: 07 32 13 Clay Roof Tiles

1.0 RECOGNITION

The Redland Clay Roof Tiles evaluated in IAPMO UES ER-445 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 Redland 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 Redland 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-445.

Redland 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-445.

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



FLORIDA SUPPLEMENT

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Load combinations shall be in accordance with Sections 1605.2 or 1605.3 of the FBC, Building, as applicable.
Design wind loads shall be in accordance with Section 1609.5 of the FBC, Building or Section R301.2.1 of the FBC, Residential, as applicable.

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1.0 RECOGNITION

The Redland Clay Roof Tiles evaluated in IAPMO UES ER-445 are satisfactory alternatives to the following codes and regulations:

- 2014 Florida Building Code, Building (FBC, Building)
- 2014 Florida Building Code, Residential (FBC, Residential)

2.0 LIMITATIONS

2.1 Verification shall be provided that a quality assurance agency audits the manufacturers quality assurance program and audits the production quality of products, in accordance with Section (5)(d) of Florida Rule 61G20-3.008. The quality assurance agency shall be approved by the Commission (or the building official when the report holder does not possess an approval by the Commission).

2.2 Evaluation to the high-velocity hurricane zone provisions in Sections 1518, 1620 and 1626 of the FBC, Building and Chapter 44 of the FBC, Residential is beyond the scope of this report.

3.0 PRODUCT USE

The design and installation of the Redland Clay Roof Tiles shall be in accordance with the 2012 International Building Code and the 2012 International Residential Code as noted in ER-445. In accordance with FBC, Building Section 1507.3 and FBC, Residential Section R905.3 the installation of the Redland Clay Roof Tiles “shall be in accordance with the requirements of the FRSA/TRI *Florida High Wind Concrete and Clay Roof Tile Installation Manual*, Fifth Edition where the V_{asd} is determined in accordance with” FBC, Building Section 1609.3.1, FBC, Residential Section R301.2.1.3, or the recommendations of RAS 118, 119 or 120.