

TWO-PIECE
MISSION
ROOFING TILE



TILE LAYOUT/ALIGNMENT GUIDE

2-Piece Mission Tile Layout/Alignment Guide



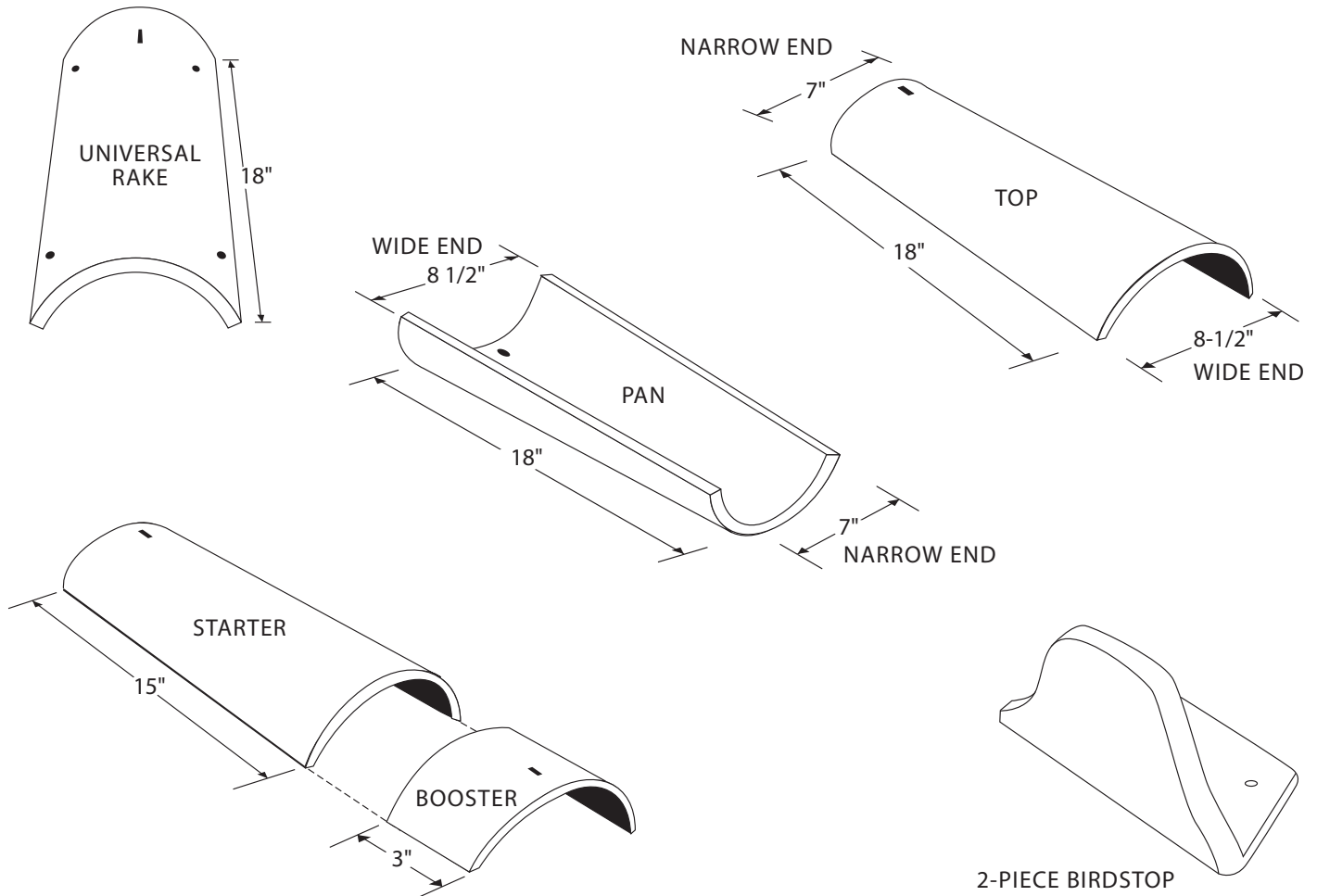
NOMINAL WIDTH*	7" - 8 1/2"
NOMINAL LENGTH*	18"
HEIGHT	3"
MINIMUM HEADLAP	3"

APPROX. TILES PER SQ. AT RECOMMENDED HEADLAP	172
APPROX. WEIGHT PER SQ. AT RECOMMENDED HEADLAP	1,000 lbs.

***Tile Size Disclaimer:** Kiln fired clay roof tiles are allowed, by ASTM C1167, a plus or minus 5% variance from the manufacturer's stated "nominal dimensions." Due to these allowable tolerances, it is the installer's responsibility to (a) verify the delivered roof tiles' dimensions prior to commencing with the roof layout, (b) verify that the delivered roof tiles are compatible with the proposed fastening system prior to installation and (c) insure that the installed tiles are installed with a minimum 3" headlap and within the maximum on-center spacing requirements.

Notice: U.S. Tile Co. clay roofing tiles shall be installed in accordance with the Concrete and Clay Roof Tile Installation Manual for Moderate Climate Regions (ICC-ES ESR-2015P) published by the Tile Roofing Institute (TRI). THIS GUIDE IS PROVIDED TO ASSIST THE ROOFING CONTRACTOR WITH ONLY THE ALIGNMENT ASPECT OF THE ROOFING TILES THEMSELVES, ALONG WITH BASIC PICTORIAL REPRESENTATIONS OF OUR PRODUCTS FOR ARCHITECTS AND DESIGNERS. Where doubt exists about any of THE ASPECTS OF THIS GUIDE, please refer to the TRI Installation Manual for clarification BEFORE COMMENCING WITH INSTALLATION.

Disclaimer: This alignment guide is being furnished as general information to users of US Tile products. US Tile is only the manufacturer of clay roofing tiles. The installation of the roofing tiles is the responsibility of the roofing contractor and must be performed in accordance with prevailing building code requirements. In some instances, a licensed engineer must also approve the roofing tile installation. Accordingly, US Tile makes no representations or warranties of any type regarding (1) the effectiveness of any particular method installation, (2) the accuracy of the information contained herein: or (3) the suitability of its materials for any particular application.



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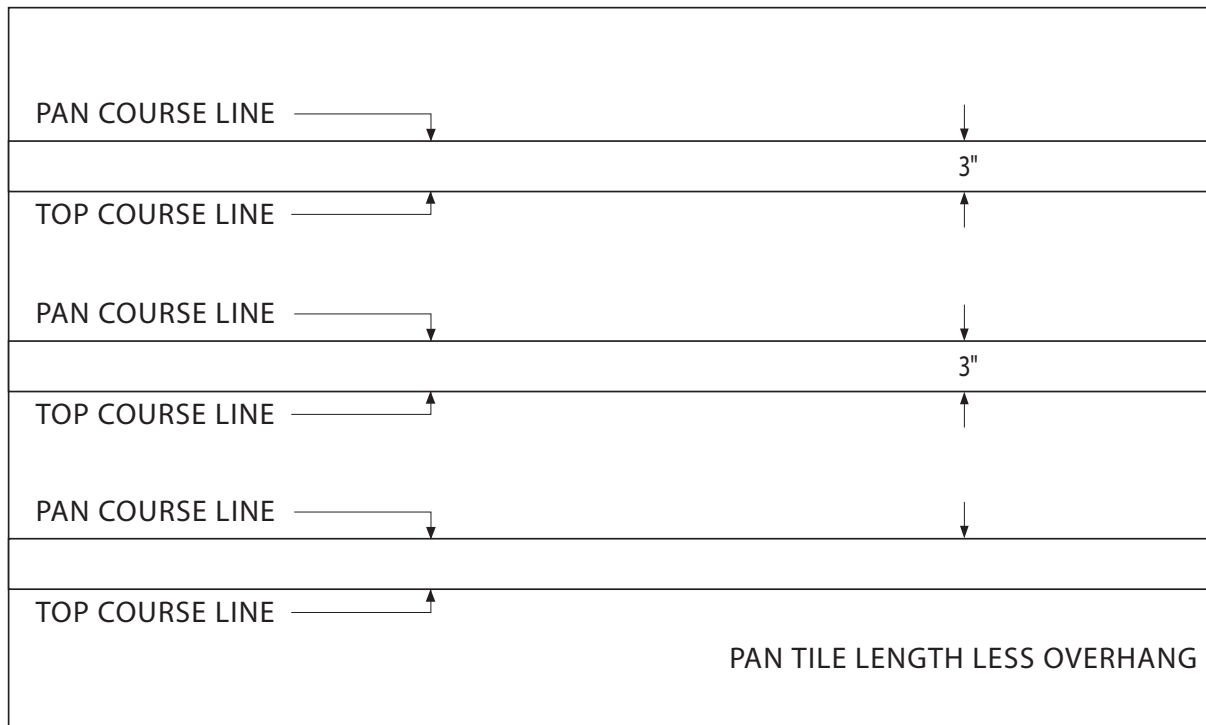
TILE LAYOUT/ALIGNMENT

The specifier or owner should properly specify and identify all application details, such as exposure, boosting, open or closed valley detail, eave closure type, hip detail, mortar set, mortar pigment color, etc., before job commences. Two-Piece Mission tiles can be installed using a multitude of application techniques to achieve a wide variety of architectural effects.

COURSE SPACING

HORIZONTAL OR COURSE LINES FOR TWO-PIECE TILE

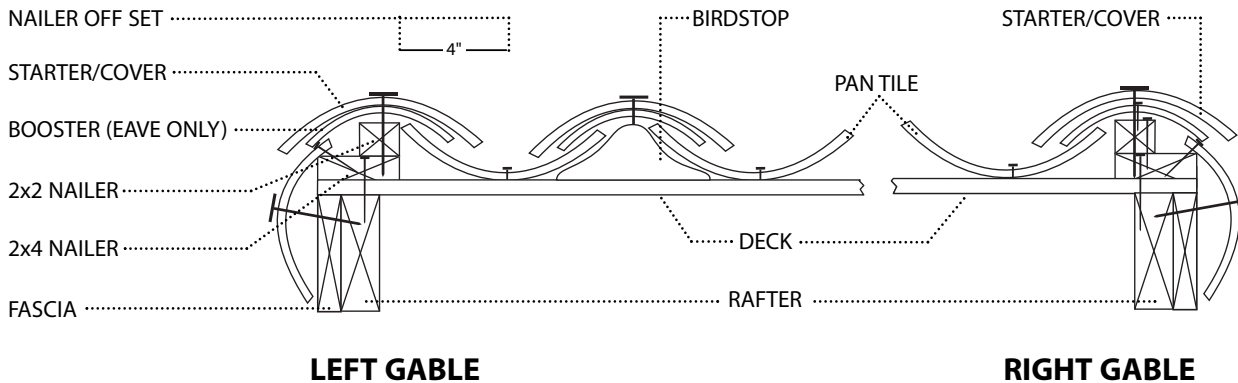
Two-Piece tile require horizontal lines for both the tops and pans. The first pan course is determined by subtracting the overhang from the length of the tile at the eave. The first pan tile course line should then be marked and snapped with a chalk line. The first top tile course line is then marked and snapped 3" lower from the first pan course line along the eave. Some installers like to use a different color chalk line for the pan and top tiles when laying out the roof. The remaining course lines are marked by measuring the distance from the first pan or top tile line along the eave to approximately 1 1/2" from the center of the ridge line and dividing that distance by 15" (nominal exposure for an 18" tile). Typically, you want to attempt to finish with a full top tile along the ridge by decreasing the exposure. The pan tile will need to be cut along the ridge when terminating with a full top tile. A minimum 3" headlap must be maintained for both the top and pan tiles. Once all horizontal lines have been marked, snap chalk lines starting at the eave and finishing at the ridge.



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VERTICAL ALIGNMENT

The vertical lines (or on-center spacing) for Two-Piece tile are marked perpendicular to the horizontal course lines. This can be accomplished by marking the eave and ridge course lines with the positions of the vertical lines, typically the center of the two-piece tile. On gable roof decks, the first vertical lines should be marked approximately 4" from the inside of either the left and right rake nailer boards. Measure between these two lines and divide by 11" (the maximum on-center spacing) to determine the number of vertical rows of tile needed. The on-center "spacing" (or distance) of the tile can be adjusted between 10 1/2" and 11" in an attempt to finish with a full tile at the gable ends. If starting from a gable end to a hip or valley, the on-center distance should also be 11". After the vertical lines are marked along the eave as described above, mark the on-center spacing along the ridge perpendicularly to the previous marks along the eave. Care must be taken that the vertical lines are snapped at right angles to the course lines. Vertical alignment can be checked with the use of a large carpenter's square (along the eave) and by "swinging" a vertical line to the ridge in an effort to determine a true 90 degree angle.

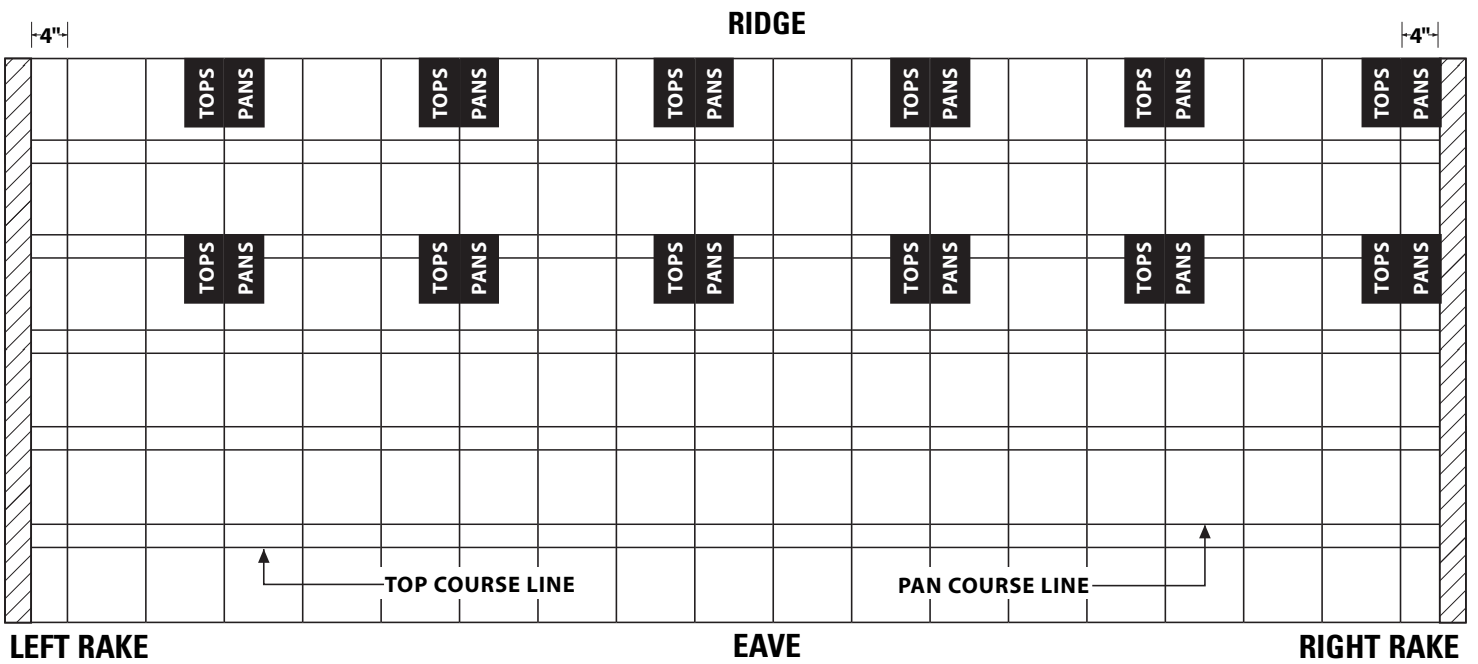


2x4 AND 2x2 ARE CUT BACK 5"-9" FROM EAVE

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LOADING GUIDE

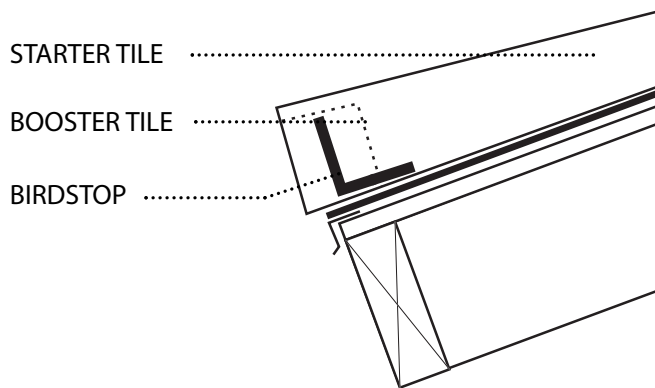
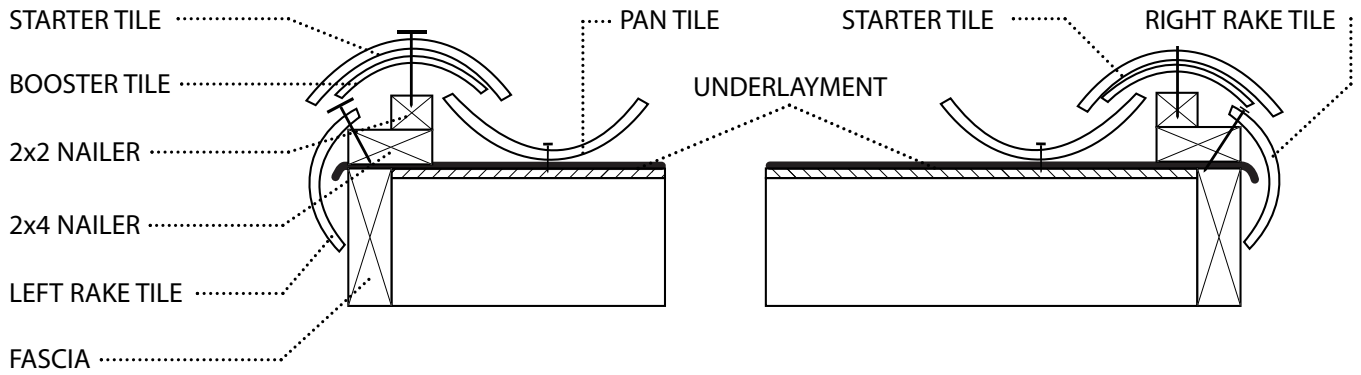
Two-piece tile can be installed by starting from either the right or left side of the roof deck, so the stacking of the tile can be done from either the right or the left to suit the installer's preference. The typical loading pattern is to start stacking tops and pans (placed side by side) starting on the third course up from the eave and on the third vertical line in from the rake board on whichever side the installer chooses. Equal stacks of tops and pans are then placed on every third course line up the roof deck. At gable ends (rakes), two-piece tile uses a separate rake and top tile.



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STARTER TILE INSTALLATION

Secure birdstops between each row of pan tiles along the eave. The starter-booster tile is then separated into two pieces at the score line. The 15" starter tile is placed over the smaller 3" booster piece and centered between the pan tiles.

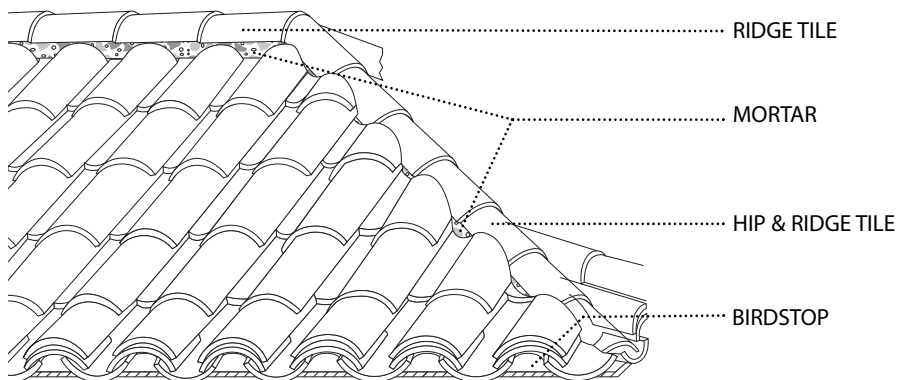
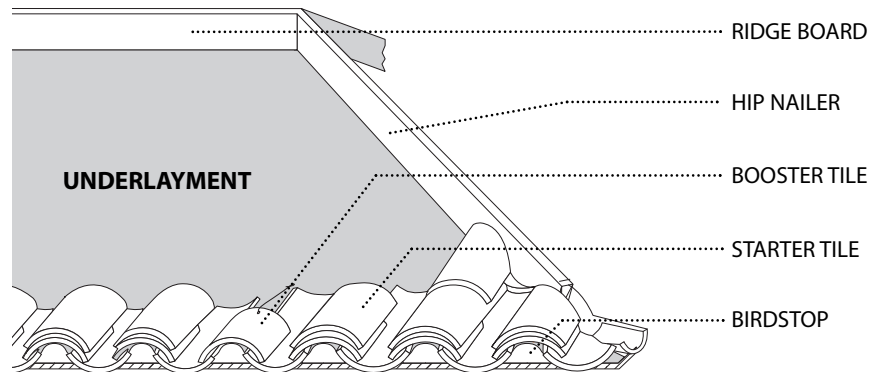
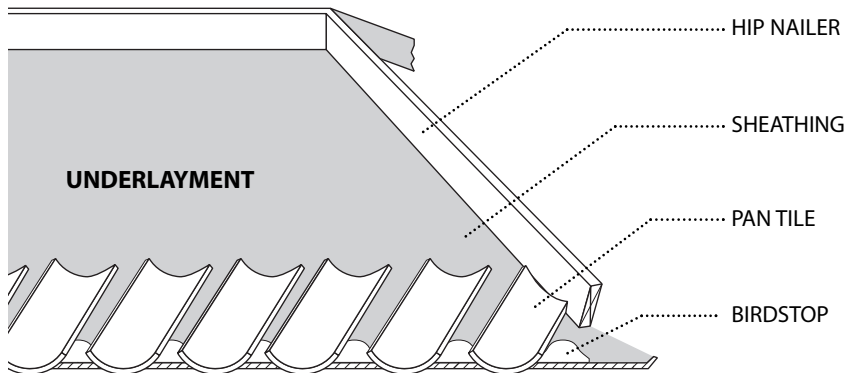
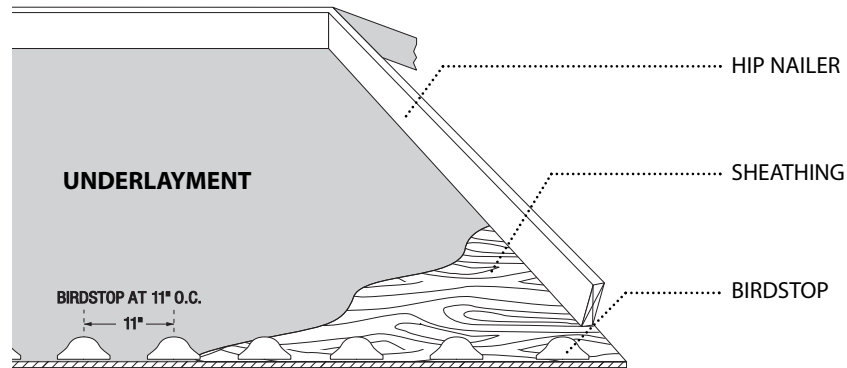


SET EAVE COURSE TO DESIRED OVERHANG

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FIELD TILE INSTALLATION

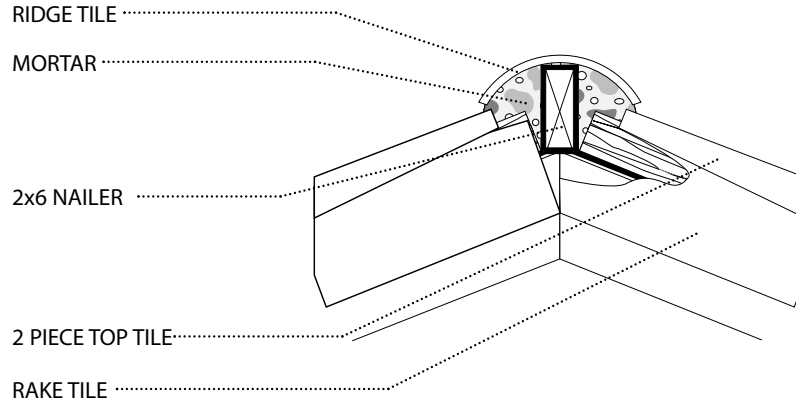
Once the first row of booster tiles are installed along the eave, continue up the roof deck by installing the pan tiles first and then the top tiles.



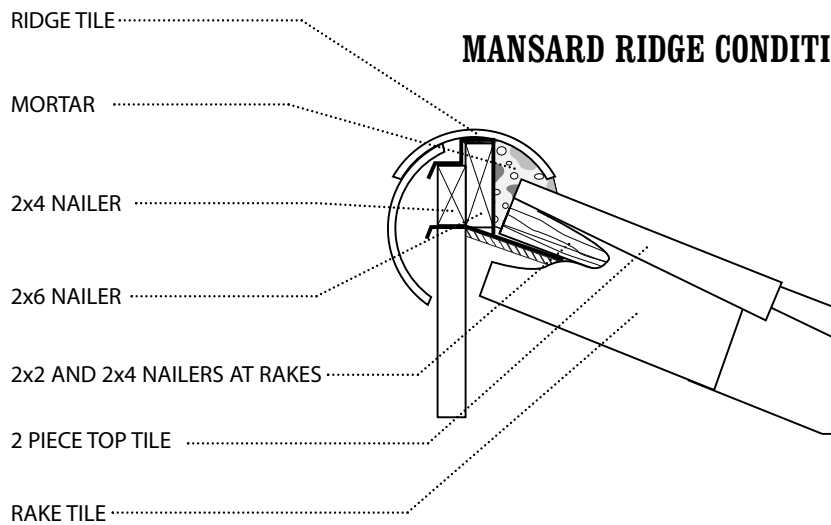
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STANDARD HIP AND RIDGE CONDITION

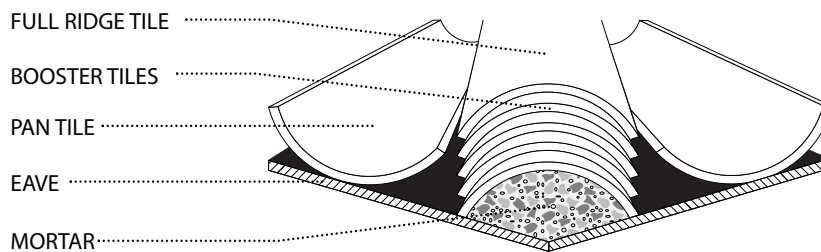
Nailer boards are to be of sufficient height to maintain an even plane of the trim tiles. The typical nailer board size for 2-pc tile is a nominal 2 x 6. Some roof slopes may require a different nailer board size.



MANSARD RIDGE CONDITION



HIP BOOSTER CONDITION



COLOR

U.S TILE REAL CLAY ROOF TILES COME WITH A TRANSFERABLE LIFETIME LIMITED WARRANTY THAT INCLUDES FADE AND LABOR COVERAGE.

U.S. TILE'S ROOFING WARRANTY OFFERS—

- **Lifetime coverage for the original owner**
- **Transferability to a future owner**
- **Non-prorated coverage for the entire term of the warranty**
- **FADE AND LABOR COVERAGE* so that your customers know their roof will look good both now and in the future**

***See our warranty for specific details.**

Colors depicted may vary from actual colors due to the inherent variations in natural clay products and the limitations of the lithographic printing process (or variations in equipment and monitor settings on the Web).

The concerned parties should examine actual color samples at both the time of initial color selection and once again from the delivered production run prior to roof loading and installation.

In order to avoid unattractive color patterning during the installation of blended colors, the skilled installer should periodically view the roof from ground level at the distance of about 50 feet and make any necessary corrections. This will help ensure that any "hot spots," checkerboarding, streaks, or stairstepping in the finished roofscape will be avoided.

Acceptable blending cannot be done at the factory or on the ground; it can only be done as the product is installed.