



DANISH TILE INSTALLATION MANUAL

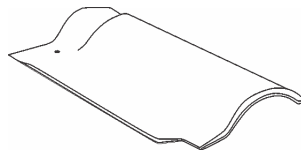
Tile installed over a plywood deck

SCOPE

This installation manual provides the minimum installation instructions for Laminados de Barro's DANISH tiles. It is intended to be used as a guide for common roof tile installations. Please contact your local building officials for local codes or special requirements in your area. For conditions not covered by this manual, please refer to the Tile Roofing Institute's Design Criteria Manual for Moderate Climate Regions or Manual for Cold and Snow Regions installation where applicable.

FIELD TILE

Provide ASTM C 1167 grade 1 Danish Tile manufactured by Laminados de Barro.



DANISH TILE

FIELD TILE	Dimension	Exposure	Weight per 100 sq ft	Pieces per 100 sq ft	SLOPE
DANISH	9" 5/8 x 15" 7/8	8 1/8" x 12" 7/8	566	138	3:12

INSTALLATION

SLOPE

Minimum recommended slope for Laminados de Barro Danish Tiles is 3:12. Any roof slope less than 3:12 shall be considered decorative.



SHEATING

Structural grade sheathing with a minimum of $\frac{3}{4}$ " thick is recommended, plywood shall be in conformance with APA rating decking.

Deck shall be smooth, clean and dry before underlayment application.

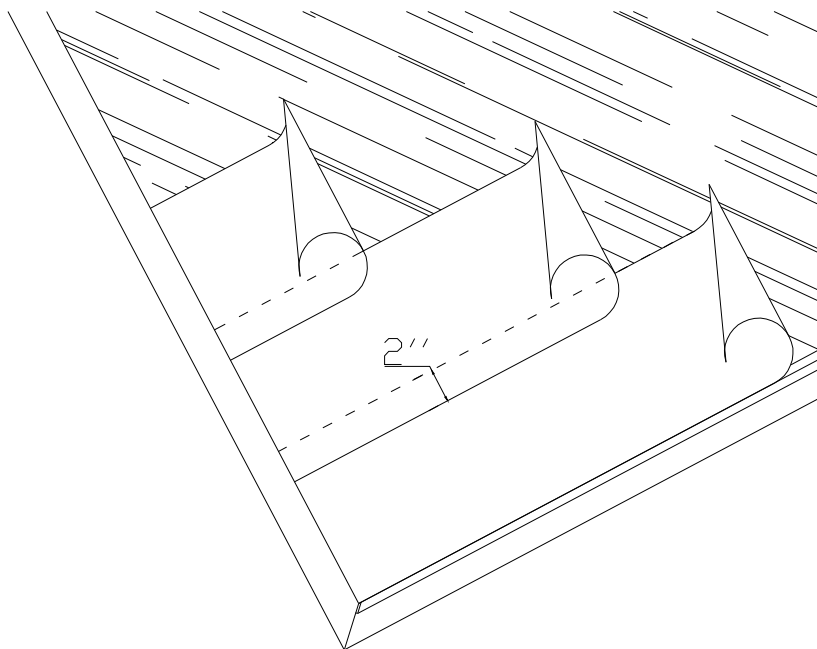
UNDERLAYMENT

-Apply on decks two layers of No. 30 asphalt impregnated felt type II conforming to ASTM D226 or one layer of No. 43 coated base underlayment in conformance with ASTM D2626. Headlap shall be a minimum of 2" and sidelap shall be a minimum of 6".

Ensure that deck is properly clean and dry before underlayment application.

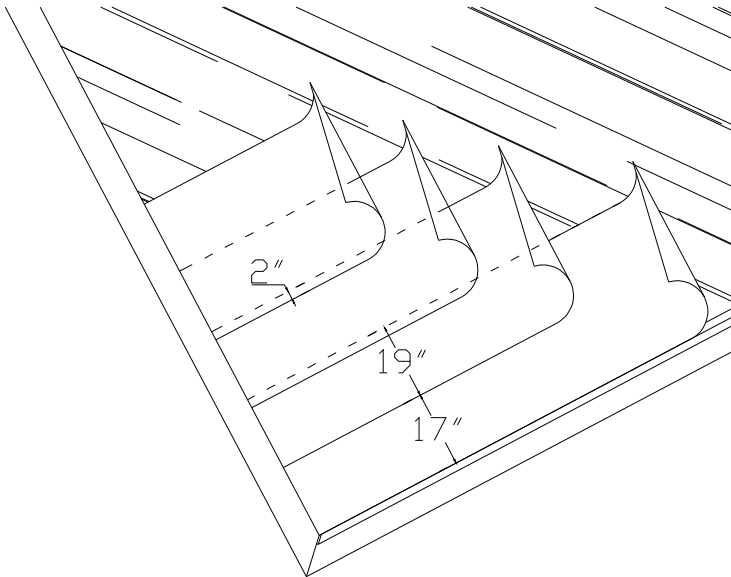
Alternate underlayments may be applied when approved by local building codes.

Single Layer Application.



- Install with a minimum 2" headlap and a minimum 6" sidelap.
- Where applicable, install according to manufacturer instructions a double layer underlayment or self adhesive Ice and Water Shield a minimum of 24" inside the decking measured from the exterior wall line of the building.

Double Layer Application.



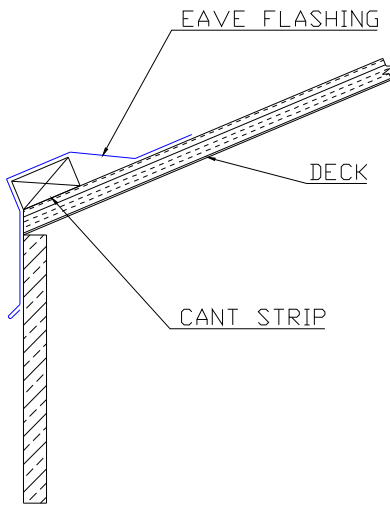
- Install with a minimum 19" headlap and a minimum 6" sidelap.
- Where applicable, install according to manufacturer instructions a double layer underlayment or self adhesive Ice and Water Shield a minimum of 24" inside the decking, measured from the exterior wall line of the building.

FIELD TILE INSTALLATION

Danish tiles are installed from right to left, typically in a diagonal fashion. Determine the average width and length exposure dimensions before chalking the roof. Chalk lines are usually struck from the roof center to the edges on hip roofs. Strike the first vertical line in the middle of the roof between hips. Vertical lines must be parallel to the water flow or perpendicular to the eave if it is straight. When marking the horizontal lines consider the overhang at the eave for the first line, typically 2", ensure that horizontal gauges are perpendicular to the water flow.

Install the first course over the eave from right to left. Then install your first vertical line on the left side of the roof. Install the first tile of the following row over the preceding row, and next to the tile on the right covering the tile sidelap. Proceed with the rest of the tiles from right to left typically in a diagonal fashion and continue the installation in the same procedure described before.

Use a cant strip under the eave course to maintain the same slope as in the field tiles. Cover with a copper eave flashing drip edge and a 6" self adhesive Ice and Water underlayment.



Cant strip detail.

FASTENERS

Use at a minimum Stainless Steel ring shank nails or screws #8 or #9 of sufficient length to penetrate at least $\frac{3}{4}$ " into the deck thickness or into the battens. Other fastening systems may be used when approved by code or local building officials. Do not over tighten the screws.

In high wind areas, the tiles in the first row at the eave must be clipped.

INSPECTION

It is of the best roofing practices to blend tiles from different pallets prior to distributing them over the roof.

Slight color variations are a consequence of the firing process and clay raw materials. Such variations are not to be considered a defect but a desired characteristic in clay roof tiles. Periodically inspect at a distance of 40ft to 45ft the tile installation to ensure a proper color blending.