

PRECISE® LAMINATED SHINGLES

Architectural Specifications: ASTM D-3018-94, Type I ASTM D-3462-99

APPLICATION INSTRUCTIONS

1 General Instructions

ALWAYS FOLLOW LOCAL BUILDING CODES. TO QUALIFY FOR WARRANTY PROTECTION AND TO OBTAIN STATED COVERAGE, THESE DIRECTIONS MUST BE FOLLOWED. Your local supplier and applicator should have PABCO warranties. Ask for one.

IMPORTANT: THE DIAGONAL APPLICATION (5" horizontal offset) DESCRIBED HERE IS NECESSARY TO GENERATE THE CORRECT PATTERN APPEARANCE. PABCO IS NOT RESPONSIBLE FOR THE APPEARANCE WHERE THIS DIAGONAL METHOD OF APPLICATION IS NOT USED.

Correct vertical exposure is 5³/₈" of each course to the weather.

The instructions below apply to standard slope-inclines between 4" and 21" per foot. For low slopes (between 2" and 4" per foot) and for steep slopes (more than 21" per foot), modify the installation as described in Section #7. Do not apply these shingles on roofs having a slope less than 2" per foot.

Ventilation: To prevent harmful condensation, air must circulate freely under the roof deck. FHA Minimum Property Standard indicates: A minimum of 1 square foot of total net free ventilating area is required for each 150 square feet of ceiling area, or 1 square foot for each 300 square feet of ceiling area if (A) a vapor barrier is installed on the warm side of the ceiling or (B) approximately one-half the ventilation is provided near the ridge.

2 Roof Deck Requirements: New Construction

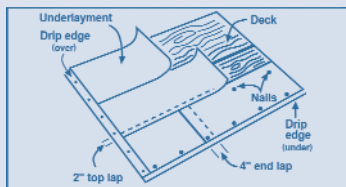
Plywood decks must be at least 3/8" thick plywood or 7/16" OSB type board conforming to the specifications of the American Plywood Association and the building code, or wood board decks must be made from well-seasoned sheathing, minimum nominal thickness 1", not over 6" in width.

PABCO SHINGLES SHOULD NEVER BE APPLIED TO ANY OTHER DECK without first obtaining written approval from PABCO'S Regional Sales Manager. Requests for approval must be accompanied by the deck manufacturer's recommended application procedure for asphalt shingles.

3 Underlayment

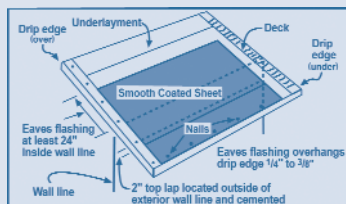
On decks with a pitch of 4" per foot or greater, for new construction or when old roofing has been removed, apply a single layer of underlayment felt complying with ASTM D226 or ASTM D4869 and the building code. Lap the underlayment 2" horizontally with 4" end laps. Lap the felt a minimum of 6" from both sides over all hips, ridges and valleys.

Drip edges are made of corrosion resistant materials that extend 2" minimum back from the roof edges and bend downward over them. Apply drip edges directly to the deck (under the underlayment) along the eaves and over the underlayment along the rakes. Using drip edge is strongly recommended.



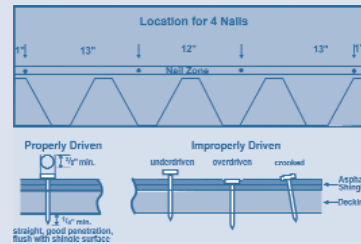
4 Eaves Flashing

If winter temperatures average 25° F or less, and ice may form along eaves to cause a back-up of water, install an eaves flashing for ice dam protection. Install a smooth coated sheet complying with ASTM D224 or ASTM D6380, Class S over the underlayment, parallel to the eaves. With drip edge, it should overhang 1/4" to 3/8". If drip edge is not used, overhang the eave flashing 1/2" to 3/4". This sheet extends up the roof to at least 24" inside the interior wall line. Horizontal laps (when needed), should be located over the overhang area. Horizontal overlaps are at least 2", end laps are at least 12", and both are cemented for water tightness with asphalt roof cement complying with ASTM D4586, Type II.



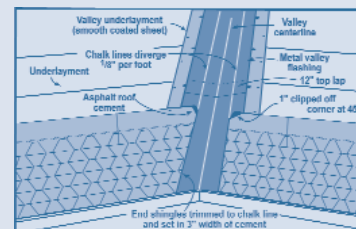
5 Nailing Instructions

Four nails per shingle are used for normal application, positioned in the nail zone as shown below. Nails shall be aluminum or galvanized, 3/8" head, 11 or 12 gauge roofing nails. They must be long enough to penetrate through roofing materials and at least 3/4" into the roof deck, or through the roof deck if less than 3/4" thick. NAILS MUST BE DRIVEN FLUSH WITH SHINGLE SURFACE. NAILS MUST NOT BE OVERDRIVEN TO CUT INTO SHINGLES.



6 Valleys

Valley application must be consistent with the building code. Where allowed, PABCO recommends open metal valleys. These valleys start with a base layer of 36" underlayment felt centered down the valley. The underlayment covering the decks extends over this and is trimmed overlapping 6". A second layer of smooth coated sheet roofing (ASTM D224, ASTM D6380 Type S, or heavier) is applied over this underlayment, centered down the valley. The metal valley flashing must be 26 gauge (minimum) galvanized metal or an equally corrosion resistant metal, at least 24" wide. It is to be formed with a "W" shape and center rib. Apply the metal valley without puncturing it by using suitable clips or cleats. Center the metal in the valley over the second layer of underlayment, trimming the bottom edge flush with the drip edge. If more than one piece of flashing metal is needed, the lower piece is nailed at the top. The upper piece laps over the lower piece nails by at least 12", and the lap is cemented together with asphalt roof cement complying with ASTM D4586, Type II. Snap 2 chalk lines down the valley, starting 3" on either side of the valley center line and diverging 1/8" per foot down the valley. Apply the shingles into the valley in the normal sequence of application for the rest of the roof. Trim the shingles to the chalk line, but never use a piece less than 12" wide. If necessary, trim the preceding shingle on the course. Apply the shingles into the valley so that no nails pass through the valley metal. Clip the upper shingle corner (in the valley) 1" at 45°. Embed each shingle end in a 3" wide strip of asphalt roof cement.



7 Special Applications

CSA A123.5-M90 requires shingles applied in Canada between Sept. 1 and April 30 be adhered with a field applied adhesive.

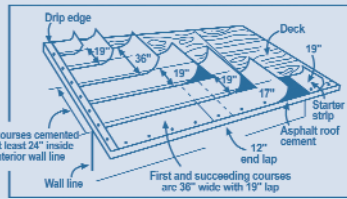
For areas where local knowledge indicates exposure to high winds may occur, shingles must be applied with 6 nails (spaced as shown below) and sealed to qualify for wind damage warranty coverage.

Steep Slope Application: On slopes greater than 21" per foot (Mansard type roofs), 6 nails are required, spaced as shown below. Shingles must be hand sealed. Apply 4 spots of asphalt roof cement (ASTM D4568, Type II) about the size of a quarter equally spaced along the nail zone, above the exposed shingle area.



7 Special Applications Continued

Low Slope Application: On slopes of 2" to 4" per foot, provide a double layer of underlayment felt (ASTM D226 or ASTM D4869) by applying a 19" wide underlayment strip across the eaves. Over this, apply a full 36" wide sheet. Continue 36" wide sheets, lapping each 19" over the preceding course. If winter temperatures average 25° F or less, cement felts to each other with Asphalt Roof Cement (ASTM D4586, Type II) from eaves to at least 24" inside interior wall line.



8 Application, 5" Diagonal Offset Pattern

STARTER COURSE: Use a self sealing three tab shingle with the tabs cut off and the adhesive at the eave. Cut 6" off the length of the first slab of starter course and apply at the lower left hand corner of the roof. If drip edge is used, the starter course overhangs the rake edge and drip edge 1/4 to 3/8". Without a drip edge, overhangs are to be 1/2" to 3/4". Continue the starter course with full length shingles.

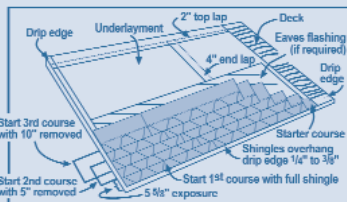
FIRST COURSE: Start with a full shingle applied flush with the starter course at the lower left hand corner of the roof.

SECOND COURSE: Cut 5" from the left end of a shingle and apply the 35" long piece over the headlap of the first course shingle, exposing the first course 5 5/8". Tooth ends must be aligned with the space between the teeth in the course below.

THIRD COURSE: Cut 10" from the left end of the shingle and apply the 30" long piece over the headlap of the second course shingle, exposing the second course 5 5/8". Tooth ends must be aligned with the space between the teeth in the course below.

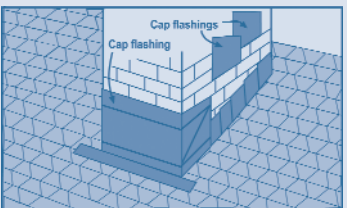
SUCCEEDING COURSES: Courses four through eight are begun with a partial shingle 5" shorter progressively, establishing the overall diagonal pattern. See illustration below. (Pieces cut from shingles along the left rake can be used to finish off courses at the right rake.) Now apply a full shingle to each of the first eight courses starting with the first course. Courses nine through sixteen repeat the process beginning with a full 40" shingle and starting each succeeding course with a partial shingle 5" shorter each time.

The 5" horizontal offset: To align bottom tooth ends with the space between teeth in the course below is critical to the final appearance of the roof.



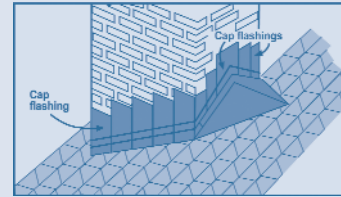
9 Base Flashing and Step Flashing

The base flashing for the front of the chimney shall be as manufactured by the metal flashing company, installed as illustrated over the headlap of the last course of shingles below the chimney, and extending up the chimney. Set both the roof and chimney overlaps in asphalt roof cement. Where the roof abuts the chimney or vertical wall, the shingles must be flashed with metal step flashing shingles applied over the end of each course of shingles. The flashing shingles are approximately 8" by 7 1/8", bent to extend 4" out over the shingles on the roof deck and 4" up the vertical surface. Each flashing shingle is placed so that its bottom edge is just back from the exposed edge of the shingle which will overlap it. It is secured to the deck with one nail near the top corner. See ARMA Residential Asphalt Roofing Manual for more details.



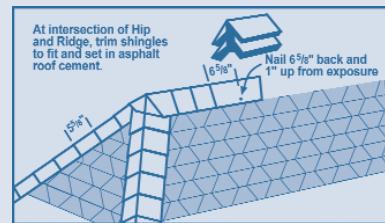
10 Cap (Counter) Flashing

The base flashing of chimneys, skylights, vents, and adjoining walls must be covered with cap flashings of sheet metal. The cap flashings must extend at least 1" into the masonry mortar joints and be caulked with asphalt roof cement to insure a water-tight connection. Base flashing should be cut to cover the entire cricket and extend 6" up the brickwork on the chimney.



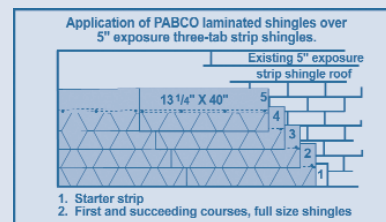
11 Hips and Ridges

Trim shingles to be even with the ridge and cap with hip & ridge shingles exposed 5 1/8" to the weather. Nail 6 1/8" back from the exposed edge and 1" up from the side with galvanized roofing nails long enough to penetrate deck 3/4". A double course of ridge shingles is recommended to accent the hip & ridge lines. **IMPORTANT:** In cold weather (40° F or below) store shingles for hip & ridge in heated warehouse or truck 24 hours prior to application to assist in forming properly.



12 Reroofing

If local building codes permit, it is generally not necessary to remove old roofing if (1) three-tab asphalt shingles and the existing framing will support the workers, the new roofing and the usual snow loads, and (2) the old deck is sound and will provide good anchorage for nails. Make the surface as smooth as possible by replacing missing shingles and splitting and nailing all buckles, raised tabs and curled shingles. Non-corroding drip edge along the rakes to cover edges of old roofing is recommended. Proceed with the application as new shingles. If the old roofing shingles are laminated, interlocking, or Dutch Lap, their size or shape may result in an uneven surface appearance. If a smooth base surface is desired, remove the old shingles and prepare the deck as new construction.



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