

# PABCO® SG-30® AND GG-20® SHINGLES

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

## 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 have PABCO warranties. Ask for one.

Standard application exposure is 5/8" to the weather.

The step-by-step application instructions below apply to standard slope/inclines between 4" per foot and 21" per foot. For low slopes (2" to 4" per foot) and 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.

**IMPORTANT: THE DIAGONAL APPLICATION DESCRIBED HERE IS NECESSARY TO PREVENT OBJECTIONABLE PATTERNING. PABCO IS NOT RESPONSIBLE FOR PATTERNING ON ROOFS WHERE THE DIAGONAL METHOD OF APPLICATION IS NOT USED.**

**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

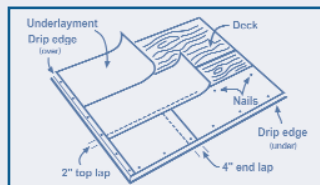
Plywood decks must be at least 3/8" thick plywood or 7/16" OSB type board conforming to the specifications of the American Plywood Association and the building code, or wood board decks must be made from well-seasoned sheathing, minimum nominal thickness 1", not over 6" in width.

**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. **UNDER NO CIRCUMSTANCES WILL APPLICATION BE APPROVED DIRECTLY OVER POLYURETHANE OR POLYSTYRENE**

## 3 Underlayment

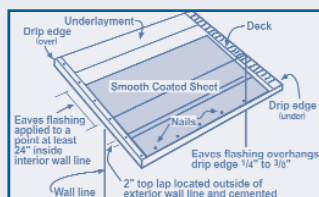
On decks with a pitch 4" per foot or greater, for new construction or when old roofing has been removed, apply a single layer of underlayment felt complying with ASTM D226 or ASTM D4869 and the building code. Lap the underlayment 2" horizontally with 4" end laps. Lap the felt a minimum of 6" from both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

Drip edges are to be 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 along the eaves and over the underlayment along the rakes.



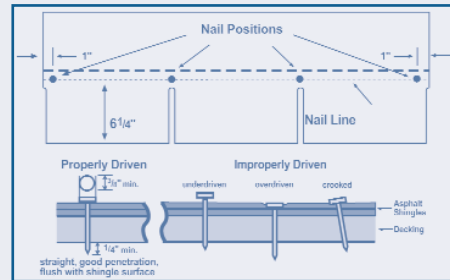
## 4 Eaves Flashing

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. It overhangs the drip edge 1/4" to 3/8". 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.



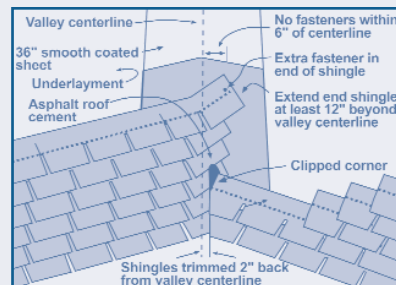
## 5 Fastener Instructions

Four nails per shingle are used for normal application, positioned in the nail line as shown below. Nails shall be aluminum or galvanized, 3/8" head, 11 or 12 gauge roofing nails. They shall be long enough to penetrate through roofing materials and at least 3/4" into sheathing, or through is sheathing less than 3/4" thick. Nails must be driven flush with shingle surface. **NAILS MUST NOT BE OVERDRIVEN TO CUT INTO SHINGLES.**



## 6 Valleys

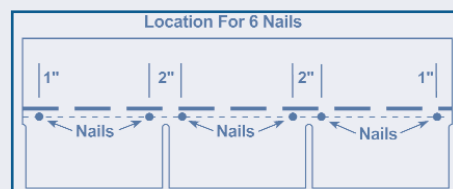
Valley application must be consistent with the building code. Where allowed, PABCO recommends closed cut valleys. Closed cut valleys start with a base layer of 36" underlayment centered down the valley. The underlayment covering the deck extends over this and is trimmed overlapping 6". A second layer of smooth coated sheet roofing (ASTM D224, ASTM D6380 Type S, or heavier) is applied over the other underlayments, centered down the valley. Lay the first course of shingles along the eave of one roof plane and over the valley, extending it into the adjoining plane at least 12". Shingles must be sufficiently warm and flexible to prevent cracking when formed across the valley. Press shingles into the valley smoothly and nail normally except that no nail is closer than 6" to the valley center line, and with 1 nail at the terminal end of each strip. Never use a piece less than 12" wide. If necessary, trim the preceding shingle on the course. Follow the same procedure for succeeding courses. Then apply the first course of shingles along the eave of the intersecting roof plane, extending it over the previously applied shingles and trim it 2" short of the valley center line. Clip the upper corners of each shingle 1" at 45°. Embed each shingle end in a 3" wide strip of asphalt roof cement (ASTM D4586 Type II). Succeeding courses are applied in the same way. Other valley applications can be considered, by providing a detailed request to the PABCO Regional Sales Manager. See ARMA Residential Roofing Manual for details and alternatives.



## 7 Special Applications

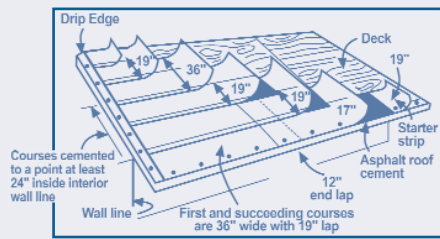
For areas where local knowledge indicates exposure to high winds may occur, shingles must be applied with 6 nails (spaced as shown below) and sealed to qualify for wind damage warranty coverage.

**Steep Slope Application:** On slopes greater than 21" per foot (Mansard type roofs), 6 nails are required, spaced as shown below. These shingles are to be hand sealed at the time of application with asphalt roof cement complying with ASTM D4586, Type II, by applying 4 spots about the size of a quarter equally spaced along the nail zone, above the exposed area of the shingle.



## 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<sup>5</sup>/<sub>8</sub>" Offset - Diagonal Pattern

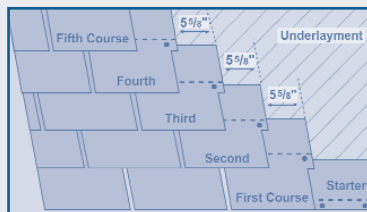
**Starter Course:** The starter course consists of the upper 7<sup>3</sup>/<sub>8</sub>" portion of the shingles. To make them, cut the 5<sup>5</sup>/<sub>8</sub>" tabs from the shingle slabs. Cut 5<sup>5</sup>/<sub>8</sub>" off the length of the first slab of the starter course and apply at the lower left hand corner of the roof. This 33<sup>3</sup>/<sub>4</sub>" long starter course strip overhangs the rake edge and drip edge 1/4 - 3/8". Continue this 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<sup>5</sup>/<sub>8</sub>" from the left end of the shingle and apply the 33<sup>3</sup>/<sub>4</sub>" piece over the headlap of the first course shingle, exposing the first course 5<sup>5</sup>/<sub>8</sub>".

**THIRD COURSE:** Cut 11<sup>1</sup>/<sub>4</sub>" from the left end of the shingle and apply this 28<sup>3</sup>/<sub>8</sub>" long piece over the headlap of the second course shingle, exposing the second course 5<sup>5</sup>/<sub>8</sub>".

**SUCCEEDING COURSES:** Courses four through seven are begun with a partial shingle 5<sup>5</sup>/<sub>8</sub>" 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 eight through fourteen repeat the process, beginning with a full 39<sup>3</sup>/<sub>8</sub>" shingle and starting each succeeding course using a partial shingle 5<sup>5</sup>/<sub>8</sub>" shorter each time. Succeeding courses also repeat this procedure beginning again with a full shingle.

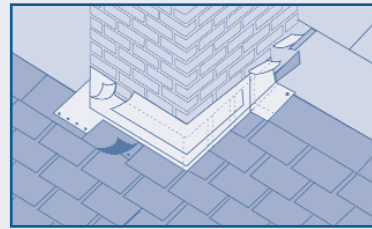


**Application 6<sup>7</sup>/<sub>16</sub>" Offset:** As an acceptable alternative, apply starter course as above. Start the first course with a full shingle. Then start courses two through six with 6<sup>7</sup>/<sub>16</sub>", 13<sup>1</sup>/<sub>8</sub>", 19<sup>11</sup>/<sub>16</sub>" and 32<sup>13</sup>/<sub>16</sub>" cut from the left tab. Courses seven through twelve repeat the process beginning with a full shingle, and starting each succeeding course with a partial shingle 6<sup>7</sup>/<sub>16</sub>" shorter each time. Succeeding courses also repeat this procedure beginning again with a full shingle.

## 9 Base Flashing

The base flashing for the front of the chimney is manufactured by a metal flashing company and 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 conforming to ASTM D4586, Type II. Where the roof abuts the chimney or a vertical wall, the shingles are flashed with metal flashing shingles applied over the end of each course of shingles. The flashing shingles are 8" by 7<sup>5</sup>/<sub>8</sub>" bent to extend 4" out over the roof deck and 4" up the vertical surface. Each flashing shingle is

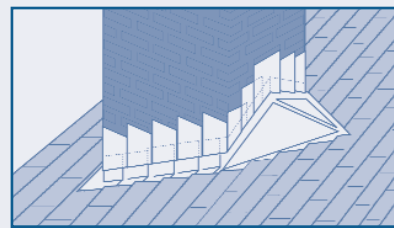
placed so that its bottom edge is just back from the exposed edge of the shingle which will overlap it. It is secured to the deck with one nail near the top corner. See ARMA Residential Roofing Manual for additional details.



## 10 Cap (Counter) Flashing

The base flashing of the chimneys, skylights, vents and adjoining walls must be flashed with cap flashing of sheet metal. The cap flashing must extend at least 1" into the masonry mortar joints and be caulked with asphalt roof cement conforming to ASTM D4586, Type II to insure a water-tight connection.

Base flashing should be cut to cover the entire cricket and extend 6" up the brickwork of the chimney.

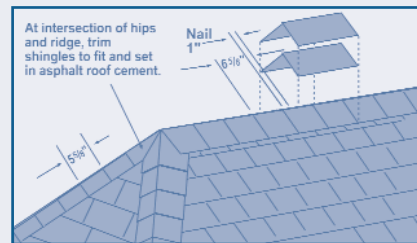


## 11 Hips and Ridges

Projecting parts of shingles are trimmed flush and capped with a double course of PABCO Hip & Ridge shingles exposed 5<sup>5</sup>/<sub>8</sub>" to the weather. Nail 6<sup>5</sup>/<sub>8</sub>" from the exposed edge and 1" up from the sides with galvanized roofing nails long enough to penetrate the deck 3/4". Double course Hip & Ridge shingles will accent the hip & ridge lines and improve the overall appearance of the roof.

**Important:**

In cold weather (40°F or below) store shingles for hip & ridge use in heated warehouse or truck 24 hours prior to application to assist in properly forming them over the hips & ridges.



## 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. Install non-corroding drip edge along the rakes to cover edges of old roofing. Proceed with the application as new shingles. If the old 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 for new construction.

**ICBO ES  
ER-5600**

Applies to SG-30 only.