



# Cambridge<sup>™</sup> IR/Dynasty<sup>®</sup> with ArmourZone<sup>™</sup>

## Performance Shingles Application Instructions

**DIRECTIONS:** NOTE: SHINGLES MUST BE APPLIED PROPERLY. WE ASSUME NO RESPONSIBILITY FOR LEAKS OR DEFECTS RESULTING FROM POOR APPLICATION OR FAILURE TO PROPERLY PREPARE THE SURFACE TO BE ROOFED OVER, OR FAILURE TO PROVIDE PROPER VENTILATION IN ACCORDANCE WITH MINIMUM PROPERTY STANDARDS REQUIREMENTS. REVIEW ALL APPLICABLE BUILDING CODES, MINIMUM PROPERTY STANDARDS AND REQUIREMENTS PRIOR TO APPLYING THESE SHINGLES USING THE APPLICATION INSTRUCTIONS FOUND ON THE WRAPPER. PLEASE USE CAUTION WHEN STACKING BUNDLES ON SLOPED ROOFS.

**ROOF DECK:** Must be smooth, firm, dry and securely nailed. Plywood must be exterior grade, conforming to building code requirements. Half-inch plywood is recommended for best deck performance. The installation of asphalt shingles on dimensional lumber (including shiplap/board decks) is not recommended as it may potentially cause buckling problems. Buckling is not covered by our Limited Warranty. REROOFING: Split and re-nail curled or buckled shingles, replace any missing shingles, remove loose or protruding nails, and sweep surface clean. Roof slope should be 4:12 or steeper. For slopes 4:12 to 2:12, see special underlayment requirements outlined below. Never apply asphalt shingles to roof slopes less than 2:12.

**EAVE PROTECTION:** Apply eave protection as per building code requirements, overhanging eaves by a nominal 1/4" minimum and extending up the roof at least 24" beyond the interior wall line. Ice & Water Protector is recommended for best performance, applied according to instructions printed on each wrapper.

**UNDERLAYMENT:** For areas where the roof slope is less than 4" per foot down to 2" per foot, use one layer of ICE AND WATER PROTECTOR, applied according to instructions printed on each wrapper. Alternately, use 2 layers of asphalt saturated felt (or equivalent), the first sheet overlapping the eave protection by 19", followed by full 36" widths overlapping each preceding course by 19". (NOTE: IF THESE PROCEDURES ARE FOLLOWED, SHINGLES APPLIED TO SLOPES 3:12 TO 4:12 WILL BE WARRANTED FOR THE FULL WARRANTY TERM FOR THE SHINGLE. SHINGLES ON SLOPES 2:12 TO 3:12 WILL BE WARRANTED FOR 12 YEARS.) For areas where the roof slope is 6" per foot down to 4" per foot, it is strongly recommended to cover the remainder of the deck with one ply asphalt saturated felt (or equivalent) laid parallel to the eaves, with 2" horizontal laps and 4" end laps. One layer of asphalt saturated felt (or equivalent) is required over the entire deck to qualify for an ASTM E108 Class A fire rating or which may be required per the local building code. Apply metal drip edges on top of any underlay along rake edges and directly to the deck along eaves.

**CHALK LINES:** Sufficient chalk lines should be struck to ensure accurate vertical and horizontal alignment of shingles. Vertical chalk lines every 4 to 5 shingle lengths are recommended.

**FLASHINGS:** Base flashing should be in place before shingles are applied. Cap flashings of sheet metal and base flashing of metal or mineral surfaced roofing should be used at chimneys, skylights, vents, walls and other vertical surfaces and sealed with asphalt plastic cement. Flashing shall conform to the requirements of applicable building codes and good roofing practice.



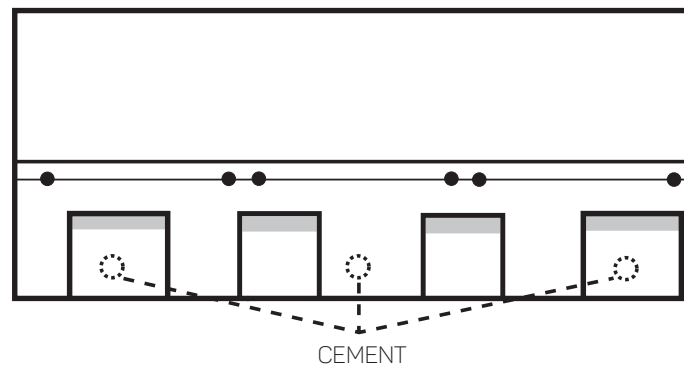
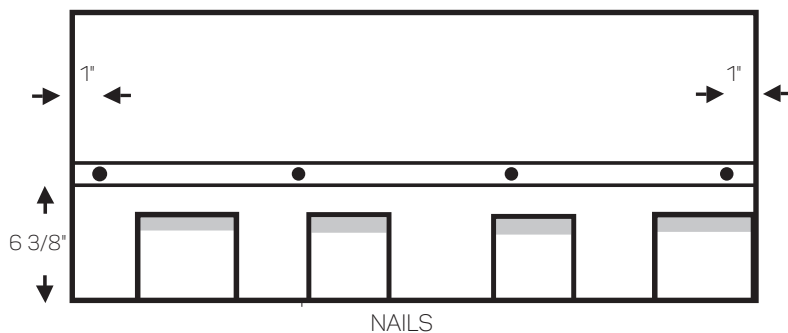
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**NAILING:** Use galvanized (zinc coated) roofing nails, 11 or 12 gauge, with at least 3/8" diameter heads, long enough to penetrate through plywood or 3/4" into boards. Use 4 nails per shingle placed in the nailing area, either between the lines or on the lines, spaced as shown below. Drive nails straight so that nail head is flush with, but not cutting into shingle surface.

**NAILING ON STEEP SLOPES:** On slopes of 21" per foot (60°) or more, use 6 instead of 4 nails per shingle placed as shown below. Ensure that no nail is within 2" of a joint/cutout of the underlying shingle. NOTE: Each nail MUST penetrate both layers of the shingle by nailing into the lower nail line only. Normal nail zone cannot be used to ensure penetrating both layers. Seal down each shingle at time of application with three 1" diameter (approx. size and thickness of a quarter) spots of asphalt plastic cement placed under the shingle 2" above the bottom edge and equally spaced along the shingle. Apply plastic cement in moderation since excessive amounts may cause blistering. CAUTION: Shingles should seal to the underlying course when the factory applied asphalt sealant is sufficiently warmed by the heat of direct sunlight. When application conditions might limit the effectiveness of the sealing strip, such as in cool weather or in areas subject to high winds or blowing dust, shingle adherence should be ensured through manual sealing as described below.

- Manual sealing is not required in the state of Florida.
- Starter strip shingles must be used at all eaves. Rake application of starter strips is not required.

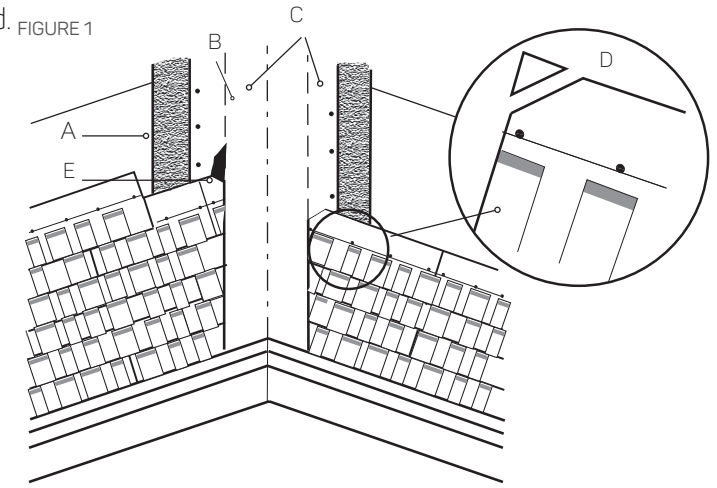


STEEP SLOPE NAIL PLACEMENT



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**OPEN METAL VALLEY:** (FIGURE 1) For longer roof performance, metal valleys are recommended. Complete valley flashing before shingles are applied. Center a 36" width strip of ICE & WATER PROTECTOR (A) in the valley. Ensure flashing is tight to the deck, then fasten with only enough nails to hold in place, nailing at the edges only. Center a minimum 24" wide, minimum 28 gauge pre-finished/galvanized metal valley liner (B) in the valley, and fasten with only enough nails to hold in place, nailing at the edges only. Snap two chalk lines (C) the full length of the valley, 6" apart at the top and increasing in width 1/8" per foot towards the bottom. When the shingles are being applied, lay them over the valley flashing, trim the ends to the chalk line, and cut a 2" triangle off the corner to direct water into the valley (D). Embed the valley end of each shingle into a 3" band of asphalt plastic cement (E), and nail the shingles 2" back from the chalk line, 7 3/8" down from the top edge of the shingle. **CLOSED CUT OR WOVEN VALLEYS ARE ALSO ACCEPTABLE. See limited warranty for details.**

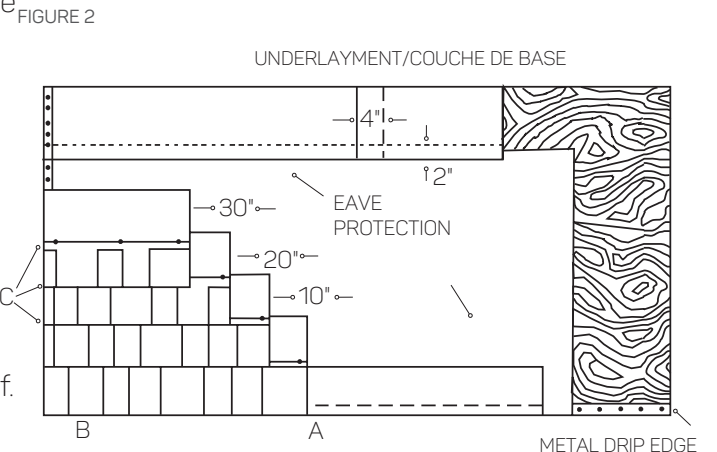


**STARTER COURSE:** (FIGURE 2) Use Leading Edge Plus shingles or if 3-tab shingles are used, cut off the tabs along a line level with the top of the cutouts. Install the starter course with the factory applied sealant adjacent to the eaves overhanging the rake edge and eaves by a nominal 1/4" minimum. Begin starter course (A) with a shingle cut 4" short so that joints will not coincide with joints between first course shingles.

**FIRST COURSE:** Start with a complete shingle applied flush with starter course at rake and eave (B). Nail as described above and continue across roof with full shingles.

**SECOND, THIRD AND FOURTH COURSES:** (FIGURE 2) Trim off 10", 20", and 30" respectively, from the left end of the starting shingle and apply to overhang rake edge by 1/4" to 3/8". Continue each course across the roof with full shingles butting ends loosely. Align the bottom edge of the shingles with the tops of the saw teeth of the shingles in the underlying course (C). Note: Other offsets between 6" – 10" may be used. These alternative offsets will not adversely affect the applicable provisions of IKO'S Limited Warranty, but may in some instances result in aesthetic issues.

**FIFTH AND SUCCEEDING COURSES:** Repeat the sequence of the first four courses up the roof. For maximum wind protection, cement shingles at rake edges.





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**HIPS AND RIDGES:** (FIGURE 3) Cut strip shingles into individual pieces by dividing at the cut-outs. Bend each piece over the hip or ridge, and nail  $6\text{-}1/8"$  above the butt edge,  $1"$  in from each side, exposing each piece  $5\text{-}5/8"$  to the weather. The final shingle should be set in cement and the exposed nail heads of this shingle should be covered with cement. Prior to application in cold weather, store hip and ridge shingles in heated area to allow for easier bending.

**NOTE:** To obtain a three-dimensional effect (which is recommended but not required), apply hip and ridge shingles double thickness by stacking 2 pieces on top of one another (slightly offsetting the shingles  $3/4"$  in exposure; see diagram, beside).

