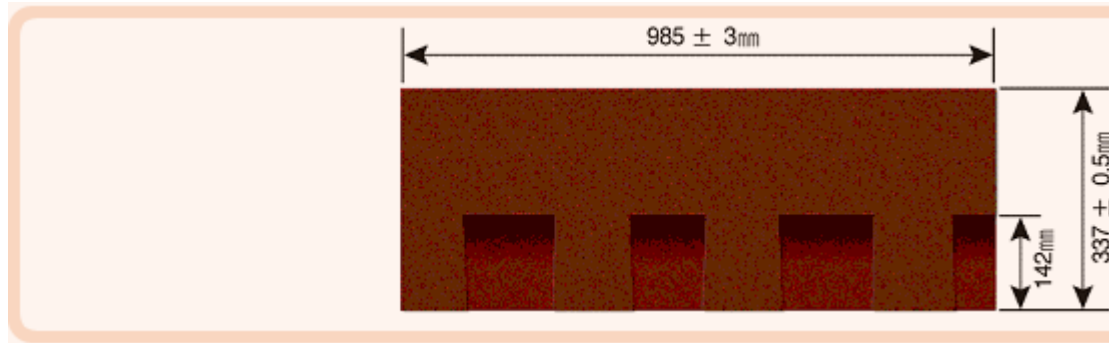


ROOF DECK

A continuous, dry, smooth and clean roof deck is required for proper installation of BITUTECHKOREA asphalt shingles. The roof deck should also be of a nail penetrating material like wood, tile cement deck or a similar material.



. PREPERATION

1. Apply one layer of underlying roofing material over the metal drip edge at eaves. Use enough fasteners to hold in place.
2. Overlap from the eaves to the ridge with a 5cm overlap.
3. The applicator must use shingles from several different bundles to reduce potential for color variation.
4. Corrosion-resistant flashing must be used to help prevent leaks where the roof meets a wall, another roof peek, a chimney or other objects that penetrate a roof.
5. Shingle sealing may be delayed if shingles are applied in cool weather and may be further delayed by airborne dust accumulation. If any shingles have not sealed after a reasonable time period, hand sealing may be necessary.
6. To prevent cracking, shingles must be sufficiently warmed to allow proper forming for hips, ridges and valleys.

. INSTALLATION

Starter course

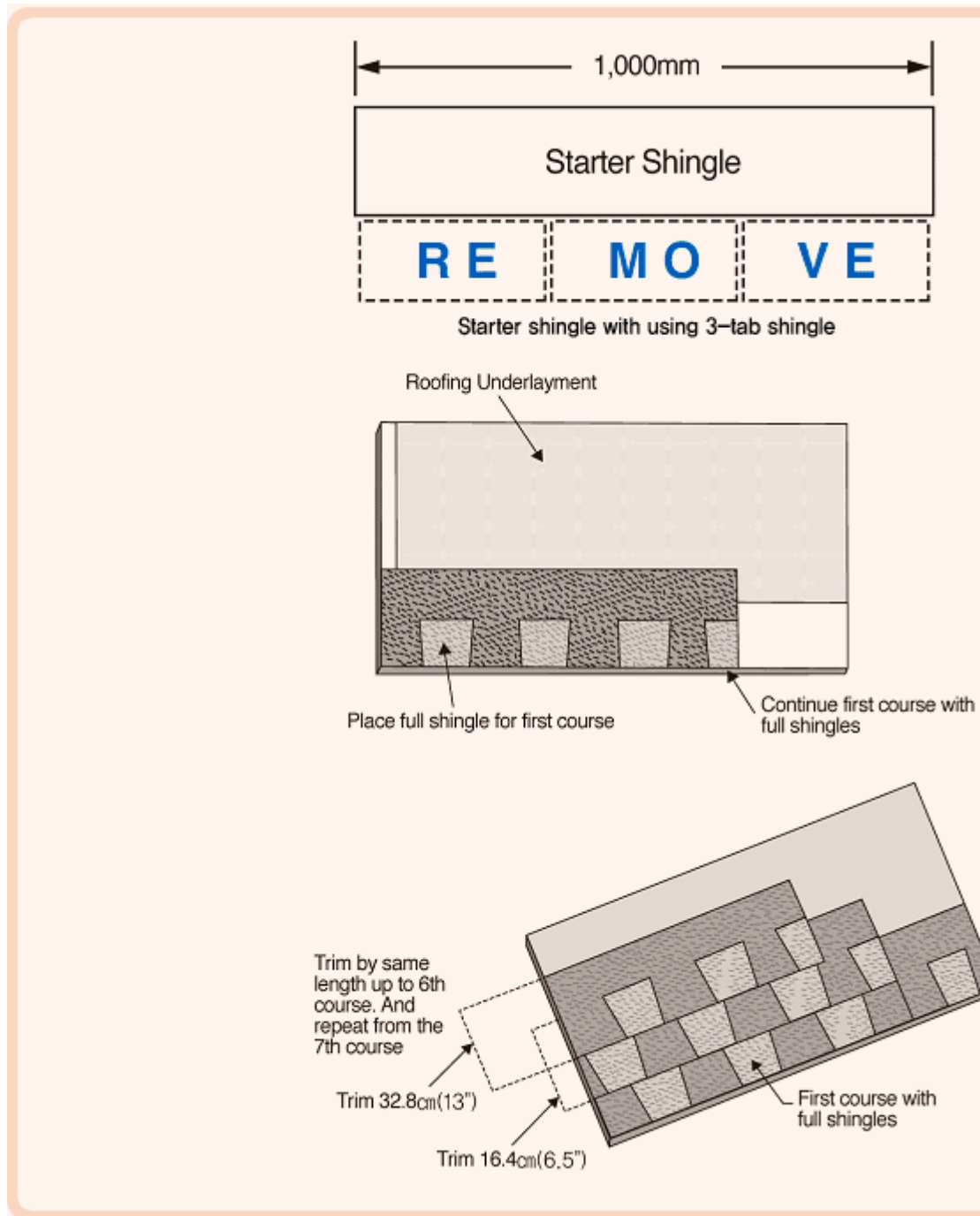
1. For the first starter, cut tabs off of 3-tab as shown and install it as starter shingle.
2. Apply it to the lower left corner of the roof. Make sure there is 1.25cm overhanging the rakes and eaves if a drip edge is being used. If you are not using a drip edge, make sure the overhang is 2cm.
3. Use starter shingles for the rest of the course.

First course

1. Apply a full shingle at the lower left corner of the roof, even with the starter course.
2. Complete the course with full shingles. The fastening line should not be used for course alignment of shingles.

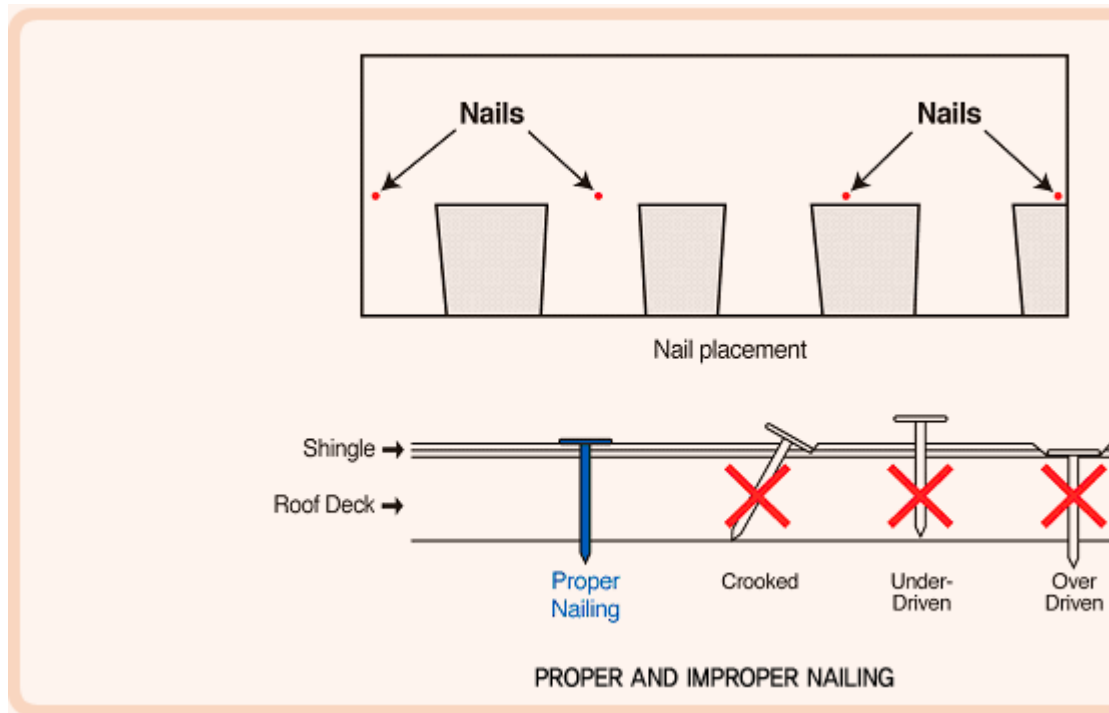
Second through Sixth courses

1. Begin the second course by positioning the first shingle 16.4cm from the end of the underlying shingle.
2. Leave 14.2cm exposure, fasten securely, and trim excess overhang at the rake.
3. Continue succeeding of second course.
4. Repeat the process of 1,2 and 3 up to sixth course.
5. Begin seventh course as same as the second course.



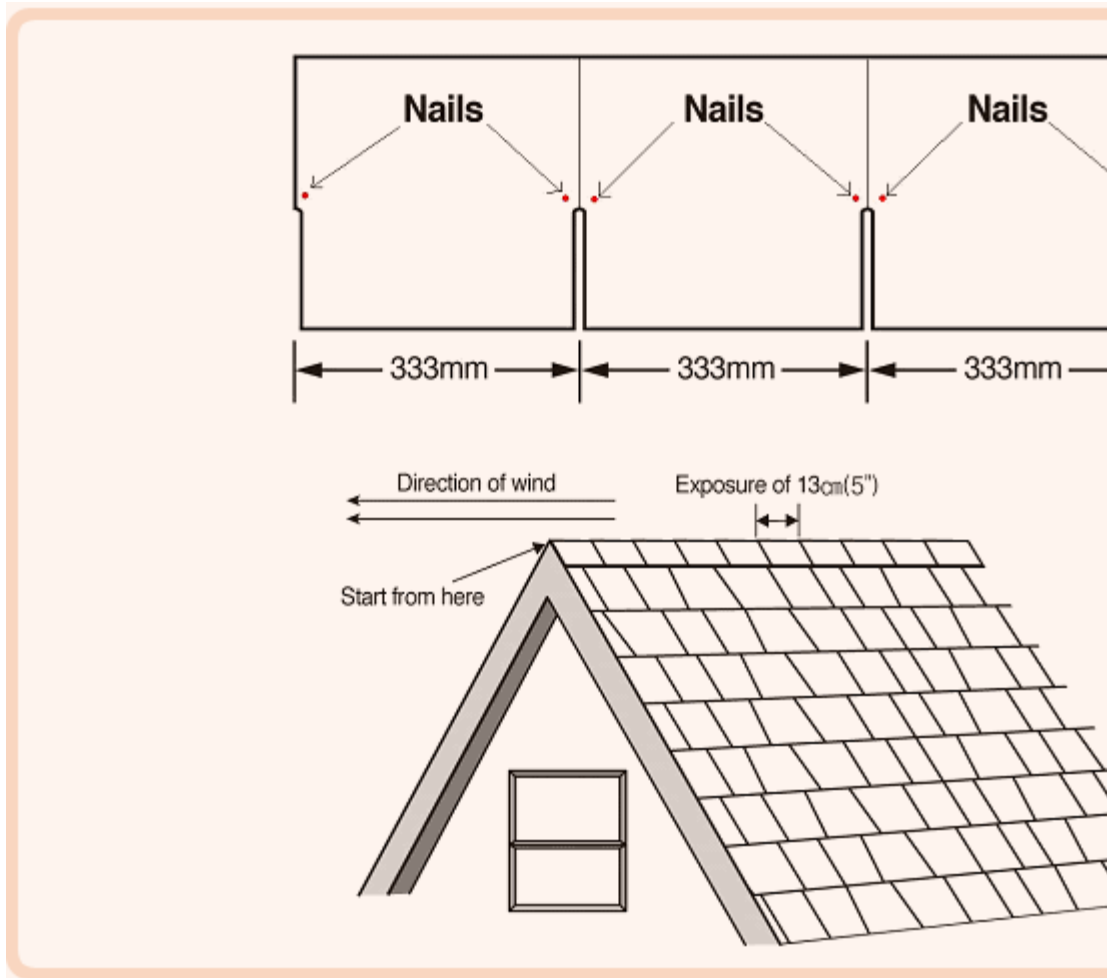
Fastening

1. Use four nails for each shingle along the nail line 15cm up from the bottom edge of each shingle and 2.5cm in from each end.
2. The nails should penetrate both layers of the shingle.
3. The length of the nails should be proportional to the thickness of the roof decking.



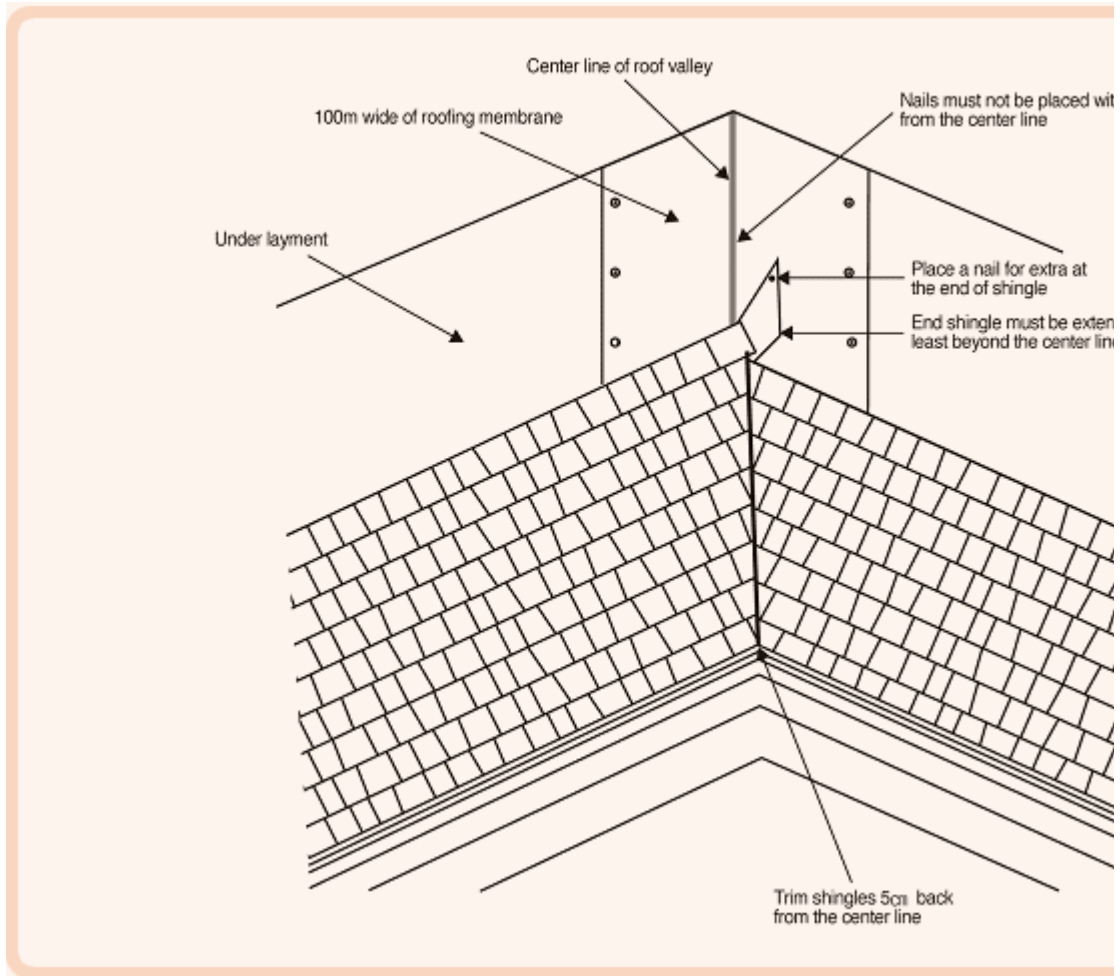
Ridges & Hips

1. Cut the 3-tab shingles using a roofing knife or utility knife into 3 pieces as below in order to make ridge shingles.
2. Apply the ridge shingles from the end of ridge opposite prevailing wind direction.
3. Leave a 13cm exposure per shingle for hip and ridge application.
4. Bending over the ridge; apply two nails on each side.
5. Continue installing ridge shingles until the entire ridge is covered



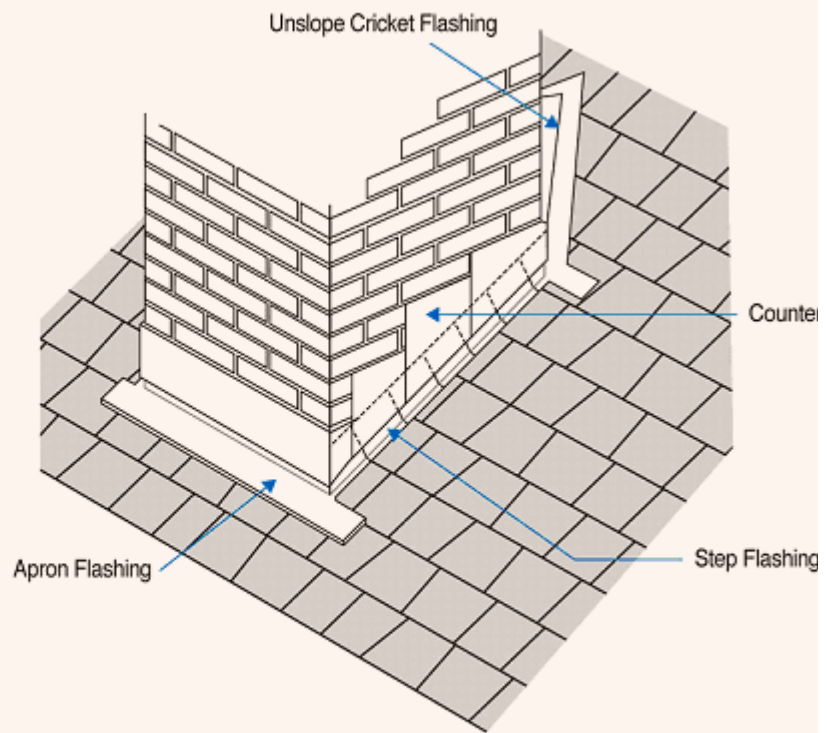
Valleys

1. Lay a 100cm wide valley liner of smooth surface roll roofing. Fasten on outer edges only
2. Lay all shingles on one side of the valley and across the center line of the valley a minimum of 30cm. Fasten a minimum of 15cm away from center line on each side of the valley
3. Strike a chalk line 5cm from the center line of the unshingled side. Apply shingles on the unshingled side up to the chalk line and trim, taking care not to cut the underlying shingles. Clip the upper corners of these shingles, cement and fasten



. FINISHING

All finishing such as joints, verges, and chimneys can be of prefabricated market materials like copper, metals or plastics.



Contact BITUTECHKOREA for specific requirements,
www.bitutech.co.kr