THE BUILDING AGENCY

owens corning laminate shingles

Installation Manual

Oakridge Pro 30, Oakridge pro 30 Super & Duration Premium

OWENS CORNING

ROOFING

CONTENTS

FIGURES

1. GENERAL

This Installation Instruction document for Owens Corning asphalt roofing shingles is to be read in conjunction with the Installation information printed on each packet of shingles along with the Technical Information and Product Specification documents supplied by The Building Agency and available to view or download from our website. www.thebuildingagency.co.nz

Installed over plywood substrate and roofing underlayment Owens Corning asphalt roofing shingles create a weather tight roofing system. To achieve this asphalt roofing shingles must be installed exactly to the manufacturers recommendations, complete with all roof underlays, flashings and accessories as outlined in Technical Information document and must only be used in applications where the roof slope is 9.5° or greater*.

Owens Corning asphalt roofing shingles are available in various profile types and colour options. Please read the Product Specification document to ensure you are using the correct Owens Corning Asphalt Shingle product for your chosen application.

** For roof pitches between 9.5° and 12° See Underlayment Selection Matrix in Section 5.*

2. HANDLING

- Store shingles in a dry covered well ventilated area.
- Lay shingle bundles flat.
- Do not bend over the ridge.
- Protect shingles from weather when stored on job site.
- Do not store near steam pipes, radiators etc.
- Use extra care when handling shingles when temp is below 4°C.
- Do not drop bundles.
- Do not stack more than 3 pallets high.

3. FASTENING REQUIREMENTS

Nail Fastenings* must be 11 or 12 gauge, with heads of at least 9mm in diameter. All fasteners must be long enough to achieve at least 19mm penetration into or completely through roof substrate.

***Staples are not a suitable fastening for Owens Corning Asphalt Shingles.**

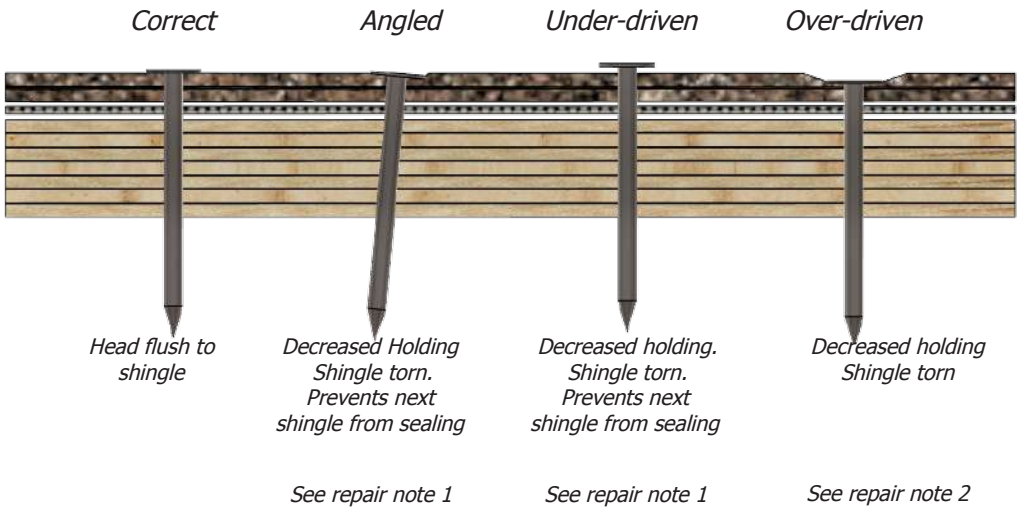
Nails must be driven in straight and heads must finish flush with the shingle surface and not be over-driven or under-driven.

Use of either hot dipped galvanized or stainless steel nails are dependant on the Site Corrosion Zone as outlined in NZS 3604 Section 4 - Durability. It is also recommended that fastener selection be verified in accordance with BRANZ Bulletin BU519.

- Hot-dip galvanised (Minimum Class 3) nails may be used in corrosion zones B & C
- Stainless steel nails in coastal zones D & E

Care should be taken in the use of pneumatic guns. An improperly adjusted gun can result in raised fasteners causing sealing failure, raised tabs, leaks or blow-off.

Fig.3.1 - Nail Finishing



Repair note 1: Flatten head to prevent interference with next shingle.

Repair note 2: Drive another nail nearby. Seal over-driven nail with SPS Building Bituminous roofing sealant.

4. ROOF SUBSTRATE (DECK)

Timber roof framing must be in accordance with NZS3604:2011 and AS/NZS1170 or NZS3603 for design.

Substrate thickness should be determined with respect to the manufacturers specifications for maximum support spacing. Sheet ends and joins must be well supported. The chosen substrate should be well fastened in accordance with the manufacturers specification.

*15mm min. thickness and H3.2 treated where ply overhangs fascia.

Owens Corning and The Building Agency specify venting of all roof cavities. This prevents build up of hot or moist air in all seasons. **See Figures 4.1, 4.2b & 4.3 for fascia to ridge venting set out.** High profile vents (for pitches less than 17°) or Low profile vents (for pitches more than 17°) or Gable louvres can be used as an alternative. (See Fig 10c for Drip edge flashing detail).

Fig.4.1 - Ridge Vent Detail

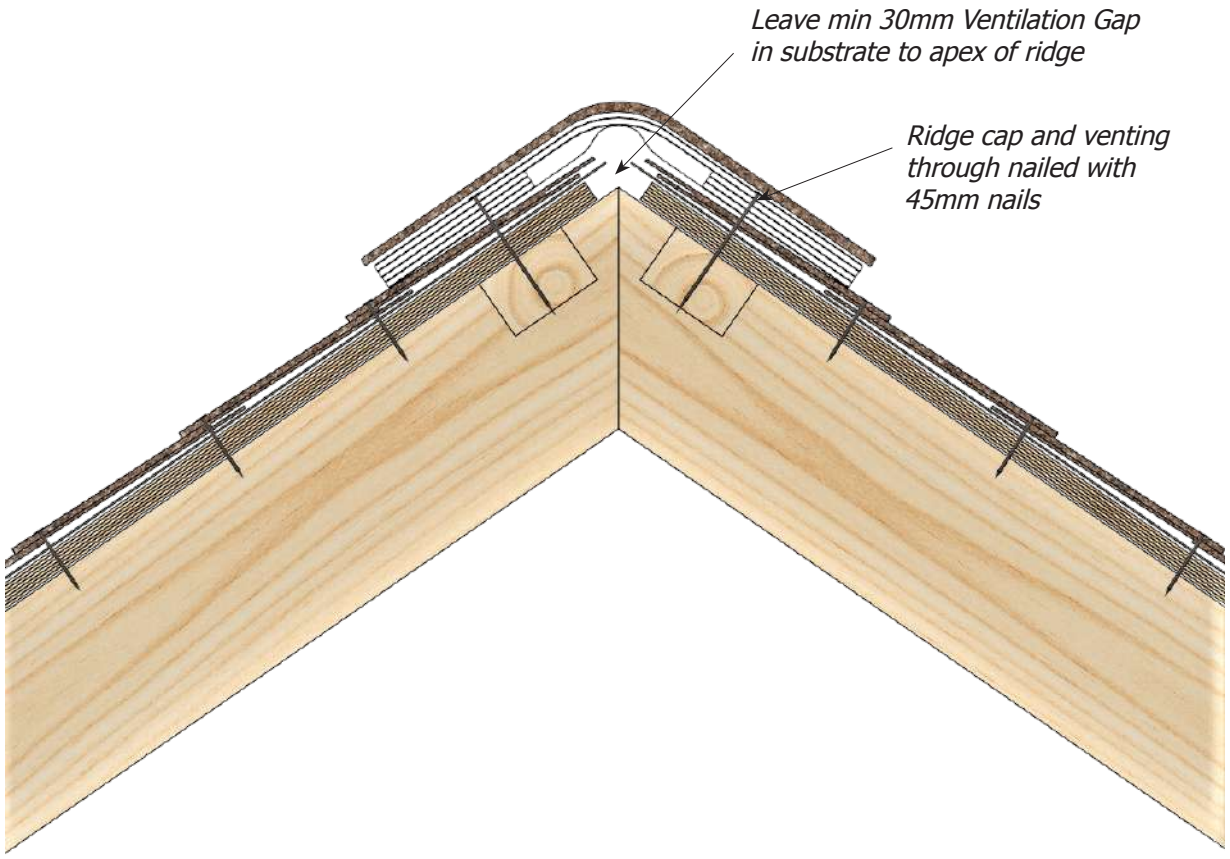


Fig.4.2 - Typical Fascia Vent Detail

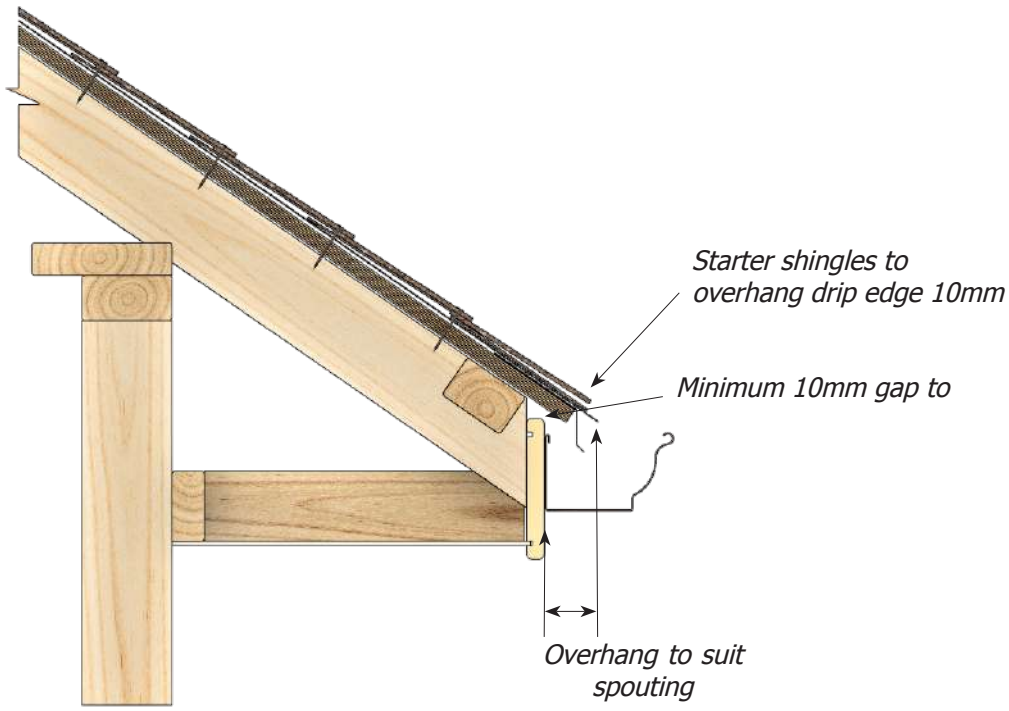
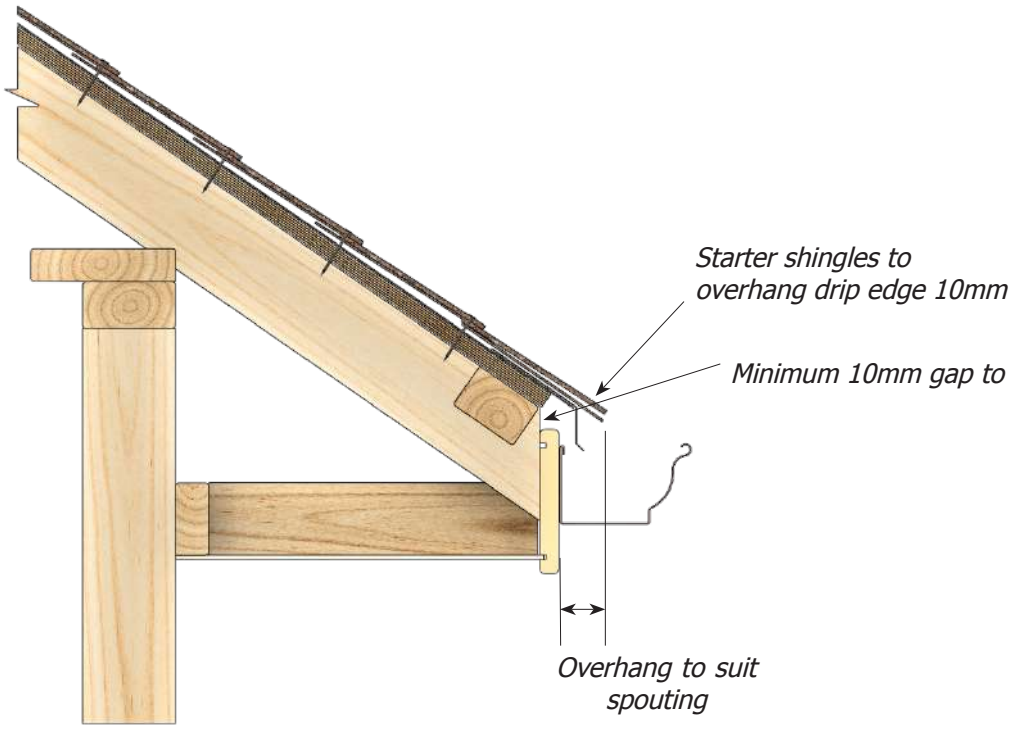


Fig.4.3 - Alternative Fascia Vent Detail



5. UNDERLAY SELECTION MATRIX

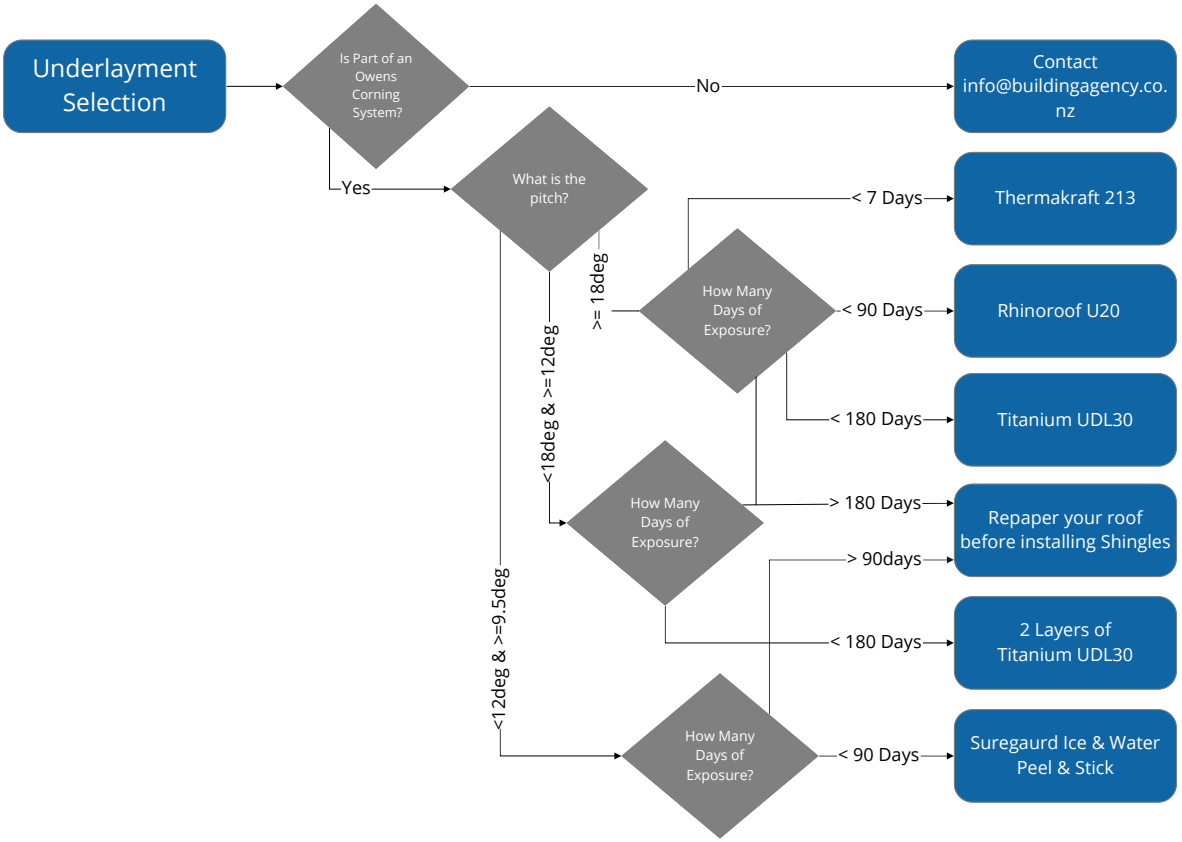
The Building Agency carries three product lines in Underlayment, to ensure correct specification and performance are achieved. Alternatively use of an ASTM-D226 or ASTM-D4869 compliant Rag-felt in accordance with the manufacturer's specification may be used.

- RhinoRoof® - U20 - 7mil Synthetic Underlayment

- Titanium® - UDL30 - 25mil Professional Grade Synthetic Underlayment

- SureGuard™ Ice & Water Barrier - 45mil Peel & Stick Synthetic underlayment

**Underlayments must be Nailed, Stapled, Cap-nailed or Cap-Stapled to the manufacturers specification for full warranty cover.*
**Better exposure time-windows are contingent on the use of Capped Staples or Nails.*
** Titanium® - Uncapped staples are not an acceptable fastening method for this membrane.*
**RhinoRoof® - Uncapped staples are permitted if exposure is 1 day or less only.*



6. UNDERLAY INSTALLATION - 18° OR STEEPER

Use of any of the three underlays on offer is permitted, please verify exposure and fastener requirements in accordance with the manufacturers recommendations as well as the following:

Application of selected underlay, metal barge and eaves flashing

(As detailed in S.15 - Accessories. [Fig 16.3])

Installation Sequence for Fig. 6.1

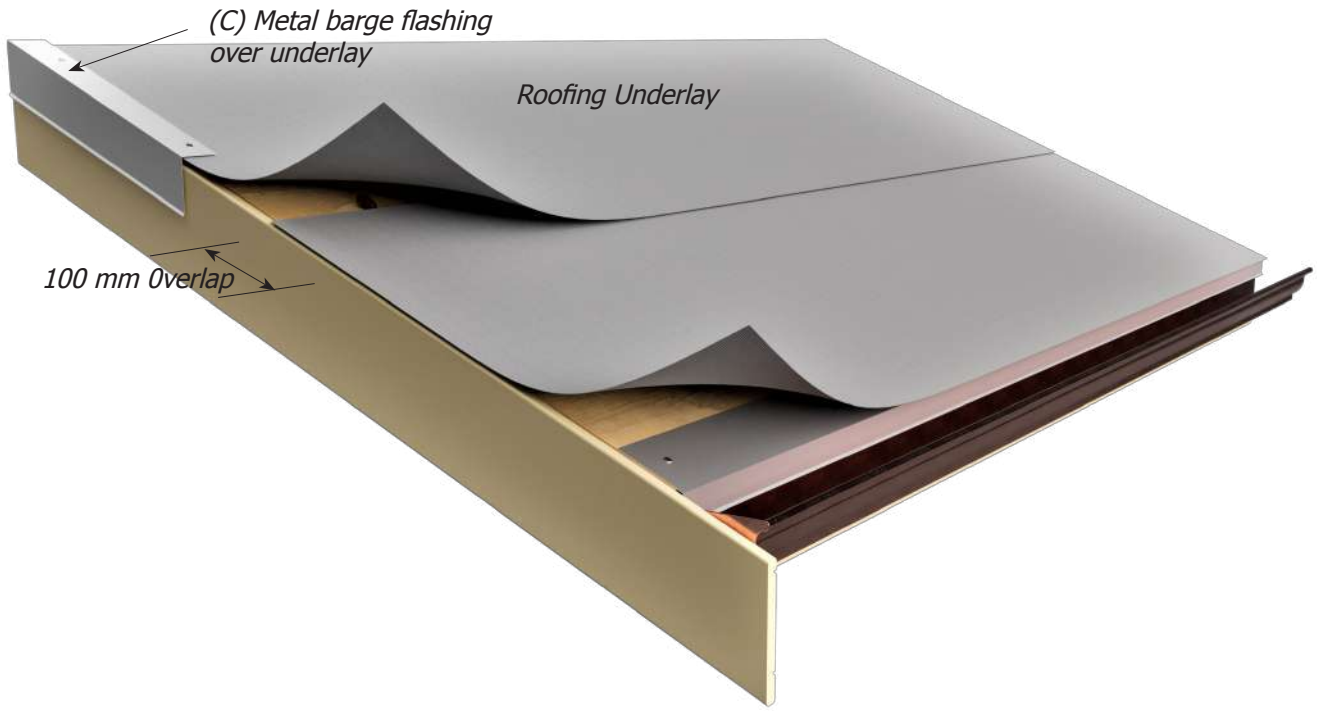
(A) Apply one layer of underlay over metal drip edge at eaves. Use only enough fasteners to hold.

(B) Overlap successive courses 100mm. Overlap course ends 100mm. Side laps are to be staggered 1.8M apart.

(C) Apply metal barge flashing over underlay at rake.

* Where snow or ice-damming is possible, apply an approved Peel and Stick membrane at least 600mm beyond the inside wall line. When using a Peel and Stick membrane in this application install over underlay and follow the manufacturers instructions.

Fig.6.1 - Standard Slope - Underlayment



7. UNDERLAY INSTALLATION - 12° TO 18°

Use of either SureGuard peel and stick or Titanium underlays, please verify exposure and fastener requirements in accordance with the manufacturers recommendations as well as the following:

Application of selected underlay, metal barge and eaves flashing

(As detailed in S.15 - Accessories. [Fig 16.3])

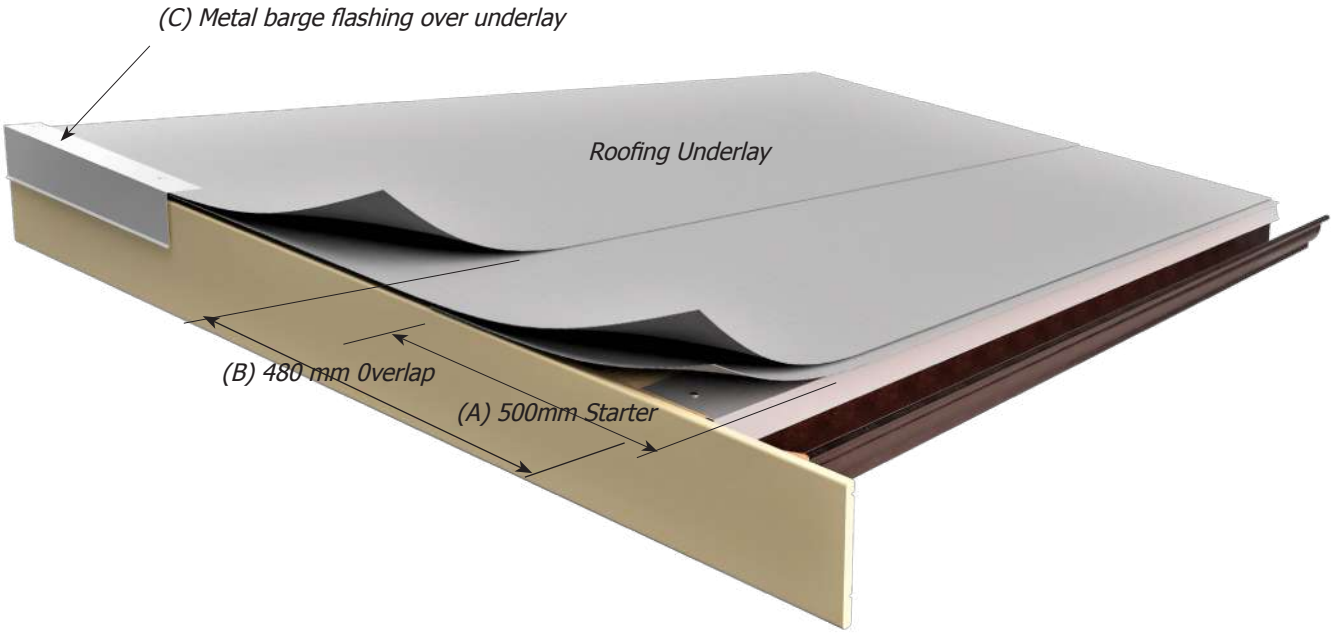
Installation Sequence for Fig. 7.1

(A) Apply a 500mm starter layer of underlay over metal drip edge at eaves. Use only enough fasteners to hold.

(B) First course and subsequent courses of underlay should overlap the course below by 480mm. Side laps are to be staggered 1.8M apart.

(C) Apply metal barge flashing over underlayment at rake.

Fig.7.1 - Low Slope - Underlayment



8. UNDERLAY INSTALLATION - 9.5° TO 12°

For slopes 9.5º up to 12º an approved Peel and Stick membrane must be installed directly to the roof substrate in lieu of Standard underlay.

When using a Peel and Stick membrane in this application, follow the manufacturers instructions.

9. SHINGLE APPLICATION

Apply shingles over properly prepared roof deck, starting at the bottom of the roof and working across and up. This will blend shingles from one bundle into the next and minimizes any normal shade variation. Laminated shingles are applied with a 165mm offset. Caution must be exercised to assure that end joints are no closer than 50mm from a fastener in the shingle below and that side laps are no less than 100mm in succeeding courses. Refer to course application steps for specific instructions.

See Section 14 for Fastening Instructions.

See Fig 16.1 & 16.2 for barge details.

See Fig 16.3 for barge and eve flashing information.

10. STARTER COURSE

*Installation Sequence for **Fig. 11.1***

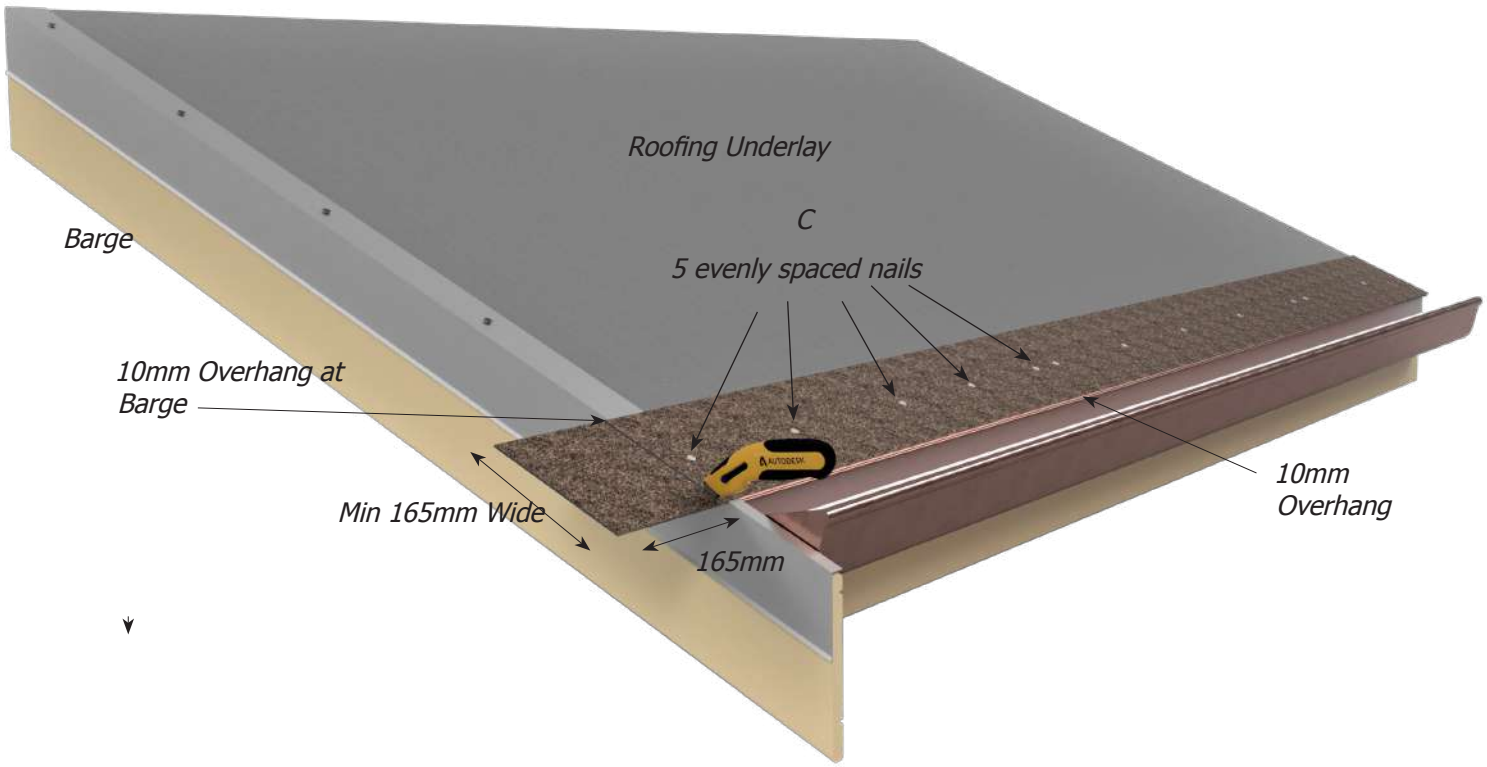
(A) Use Starter Strip, starter roll or 3 Tab shingles (tabs removed) with sealant strip nearest to eave.

(B) Trim 165mm off barge end of first Starter strip or Starter shingle. (No trim required for Starter roll) Extend 10mm beyond rake and eaves, and fasten.

(C) Complete rest of starter course with full sheets.

* Start at barge edge. Use five fasteners evenly spaced for each shingle, placed 75mm –100mm up from the eaves and 25mm in from each end. For Starter roll use five fasteners evenly spaced per metre.

Fig.10.1 - Starter Course



11. SHINGLE COURSE

Installation Sequence for ***Fig. 11.1***

First Course

(A) Apply first course starting with a full shingle, in line with the starter course at eave and barge. Fasten securely according to instructions. Use a continuous bead of bituminous mastic sealant, (type and durability stated below) 6-8mm wide the full length of the barge flashing before placing shingles.

(See Fig 16.1)

** Complete course with full shingles. The fastening line should not be used for course alignment of shingles.*

Second Course

(B) Begin second course by positioning first shingle 165mm from the end of the underlying shingle, and flush with the top of the overlay tab (dragon tooth).

(C) Leave 143mm exposure, fasten securely, and trim excess overhang at barge. Maintain 10mm barge edge overhang.

Retain off-cut for use in subsequent courses. Note: Complete course with full shingles.

Third Course

(D) Begin by positioning the first shingle 165mm from the end of the underlying shingle, flush with the top of the dragon tooth pattern. Complete by repeating step (C).

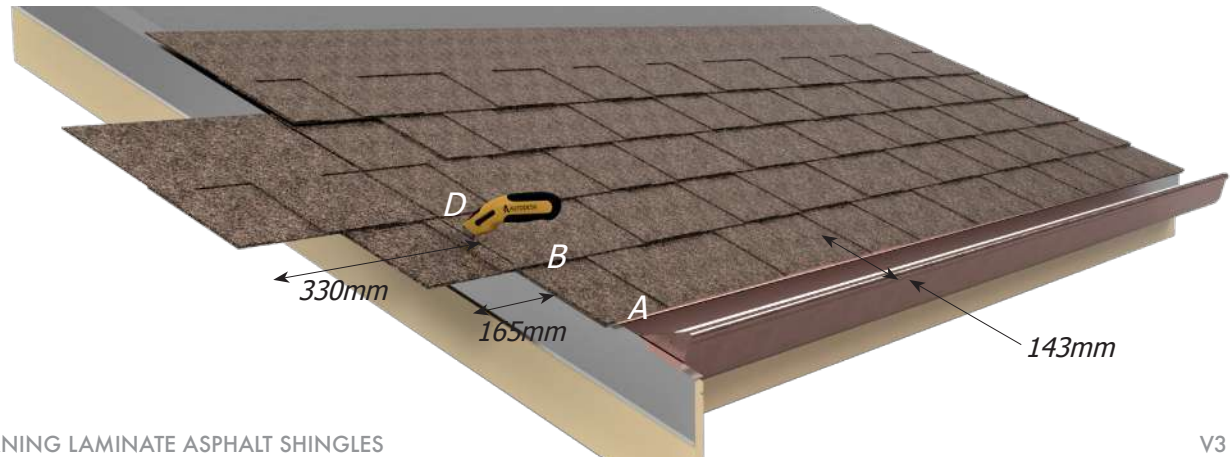
Fourth Course

(E) Begin fourth course by positioning the first shingle an additional 165mm from the end of the underlying shingle, flush with the top of the dragon tooth pattern. Complete by repeating step (C). Note: Complete course with full shingles.

Fifth Course

(F) Begin fifth course by positioning full shingle flush with barge edge and leave 143mm exposure. Complete by repeating step (C). Note: Complete course with full shingles. For succeeding courses repeat pattern to maintain offsets.

Fig.11.1 - Shingle Courses



12. VALLEY CONSTRUCTION

*Installation Sequence for **Fig. 12.1***

A closed cut valley is recommended and is applied as follows:

(A) From the start of the valley at ridge to the eave flashing lay a 600mm wide centred valley liner using one of the following approved products;

(1) Underlay as detailed in Section 2 or,

(2) Peel and Stick membrane (type and durability stated below) or

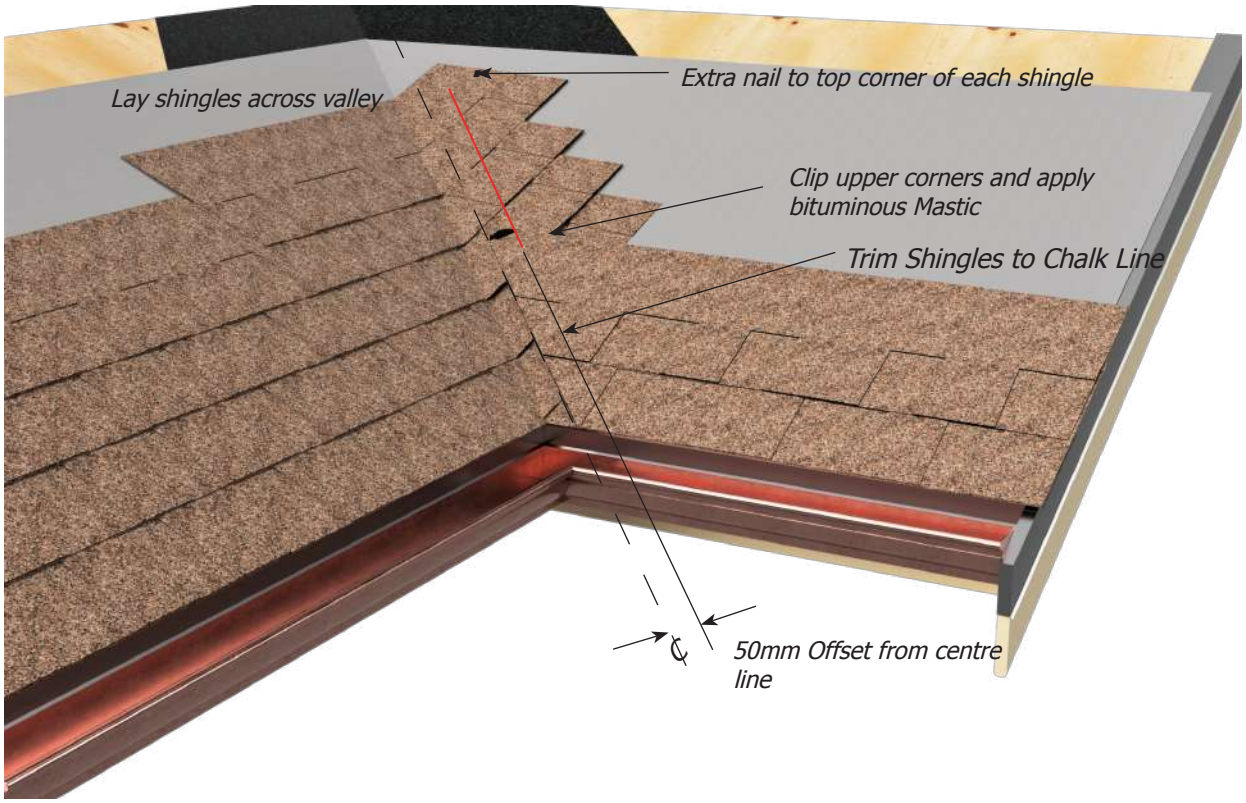
(3) EPDM complying with E2/AS1. Finish at eave flashing to line of underlay.

Fasten on outer edges only.

(B) Lay all shingles on one side of valley and across centreline of valley a minimum of 300mm. Fasten a minimum of 150mm away from centreline on each side of valley.

(C) Strike a chalk line 50mm from the centreline 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 upper corners of these shingles, and apply an approved bituminous mastic. shingle sealant. Fasten a minimum of 150mm away from centreline.

Fig.12.1 - Closed cut Valley

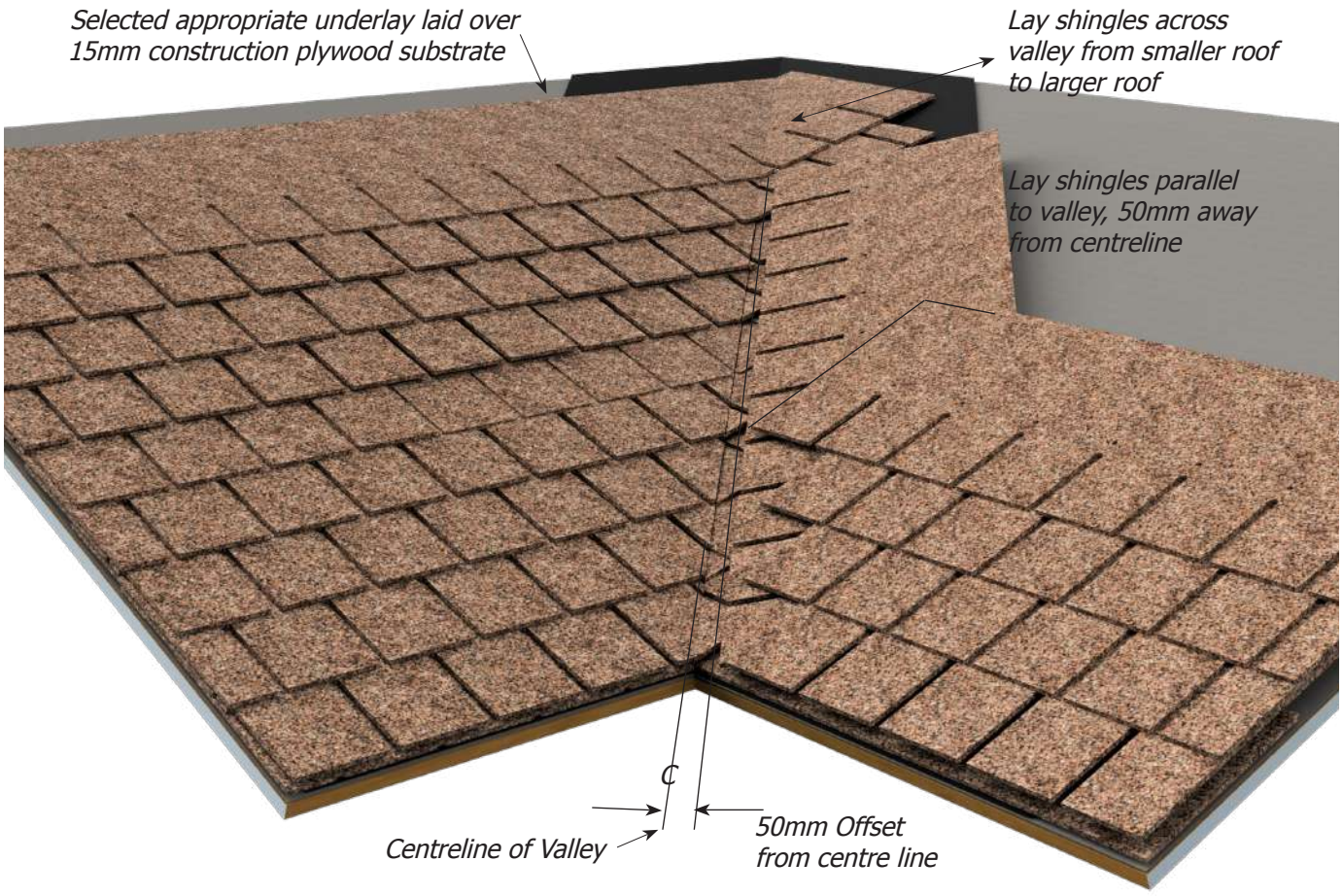


13. ALTERNATIVE VALLEY CONSTRUCTION

*Installation Sequence for **Fig. 13.1***

A staggered valley is also possible, and is applied as follows:

Fig.13.1** - **Staggered or 'California' Valley



14. FASTENING INSTRUCTIONS

*Installation Sequence for **Fig. 14.1***

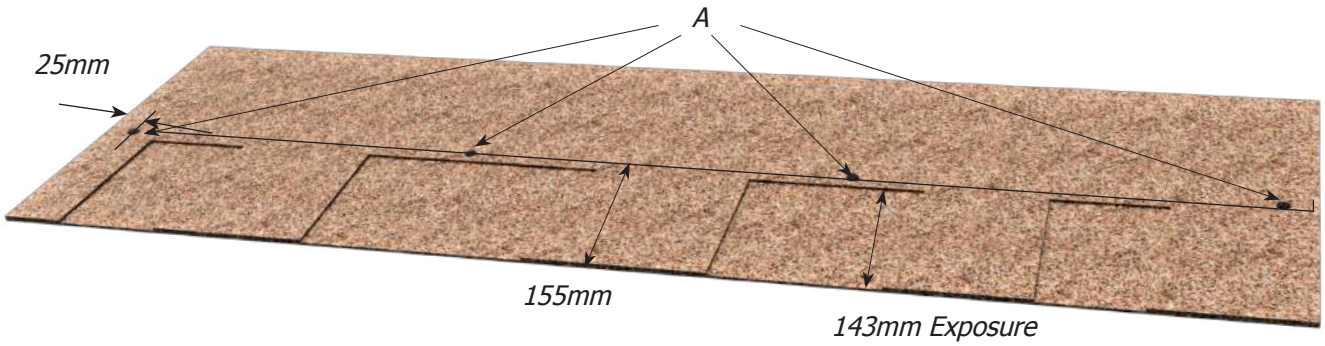
Place fasteners 155mm from bottom edge of each shingle and 25mm from each end.

(A) Use four fasteners in low, medium and high wind zones. Spaced 300mm apart.

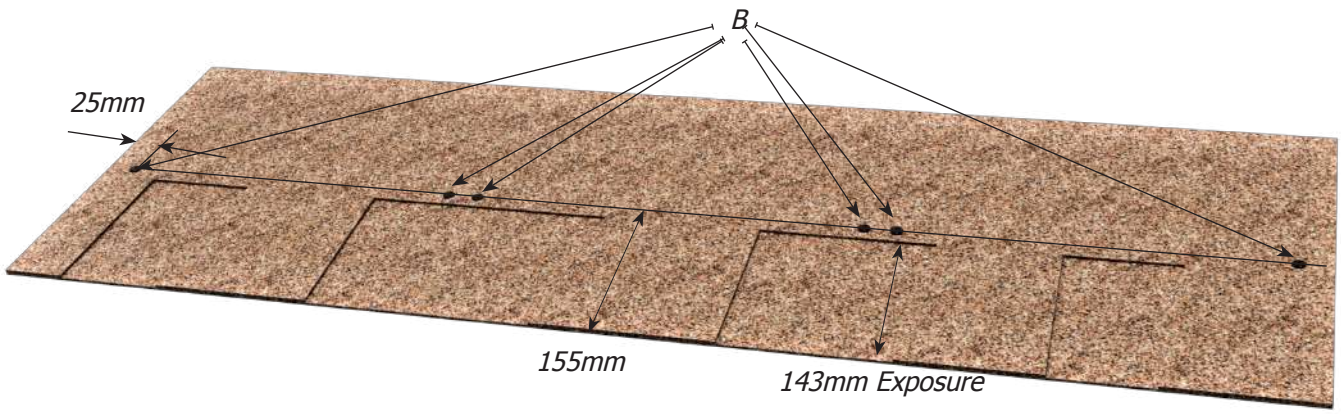
(B) Use six fasteners per shingle for very high, extra high wind zones and steep slopes. Double nailed in centre.

** Do not fasten below the 155mm nail line. Fasteners must penetrate both segments of the shingle. Fasteners must be driven perpendicular to the roof surface so that heads or crowns sit level to the shingle but do not cut into the shingle surface.*

Low, Medium and High Wind Standard Area



Very High and Extra High Wind Steep Slope



15. HIP & RIDGE APPLICATION

*Installation Sequence for **Fig. 15.1***

Standard Hip and Ridge shingles (250mm wide) or 3 Tab shingles (328mm wide) can be cut to suit, and are suitable for use as Hip & Ridge capping.

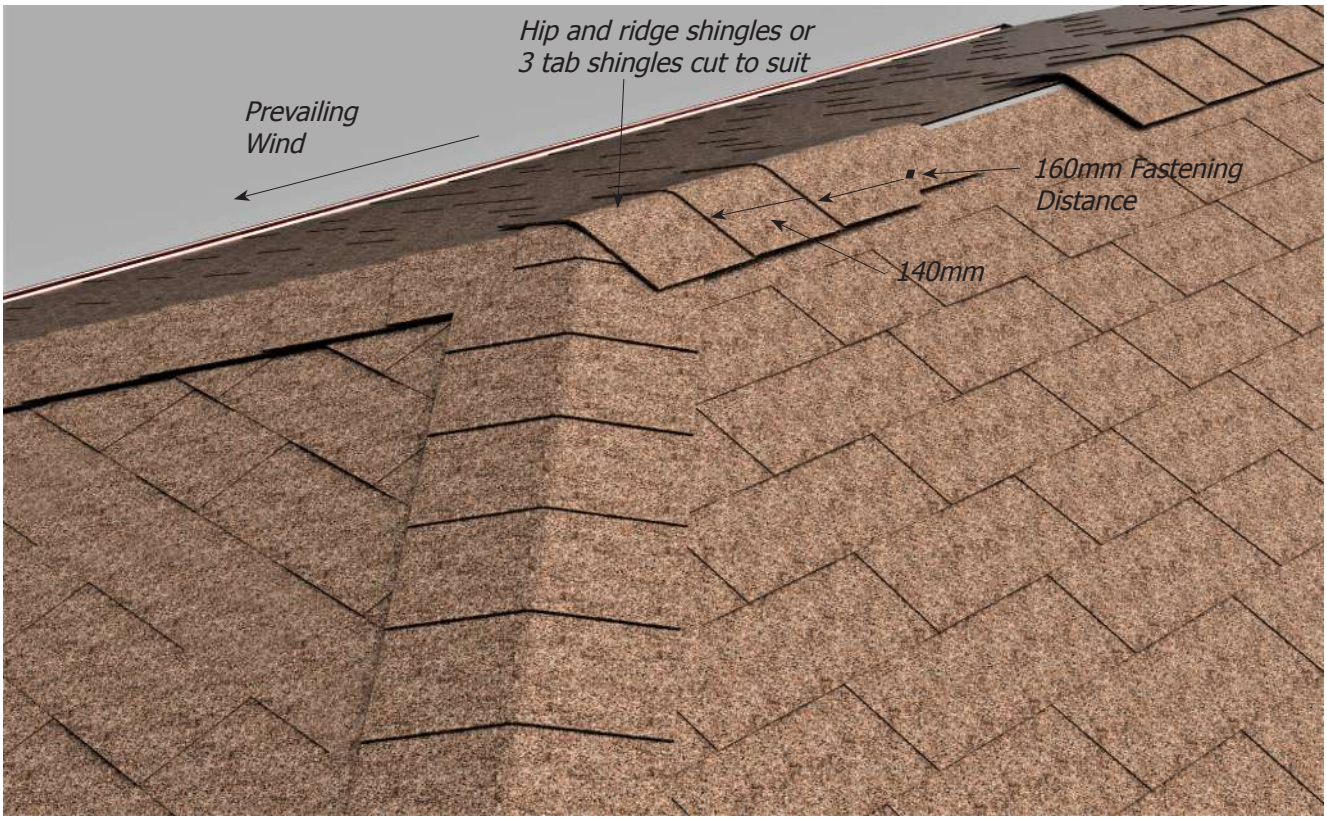
(A) Break Hip and Ridge shingles into 4 pieces or cut full 'three tab' shingles into three 328mm x 337mm Hip & Ridge shingles.

(B) Start hips at the eave and work up to ridge. Apply ridge only after hips have been applied, beginning on end of ridge opposite prevailing wind direction. Leave 140mm exposure per shingle for Hip & Ridge application.

(C) Bend over the hip and fasten on each side 160mm from exposed end, 25mm up from the edge using standard shingle nails. Cover any exposed nails with a small disc of shingle cut from waste using an approved bituminous mastic shingle sealant.

Do not cut Hip & Ridge shingles from full size laminated shingles. Install Ridge venting as required under ridge capping using a 45mm Stainless steel shingle nail.* *(See Fig 4.1).***

Fig.15.1** - **Hips & Ridges



16. ACCESSORIES

Eave and Barge Flashings

(Fig 16.1, 16.2, 16.3, 16.4)

Folded metal flashings in accordance with E2/AS1 4.0 Flashings made from pre-painted coil, copper, stainless steel. Coastal zones D and E as outlined in NZS 3604 Sect 4 Durability use Stainless Steel or marine grade coil.

Ridge Vents

Manufactured from 3 layers of 3mm Black pack flute creating a 1.2m long x 9mm flexible vent installed continuously across the ridges and fixed down with the ridge capping using a 45mm stainless steel nail to create a vented roof space.

Sizes available are 230mm & 280mm wide.

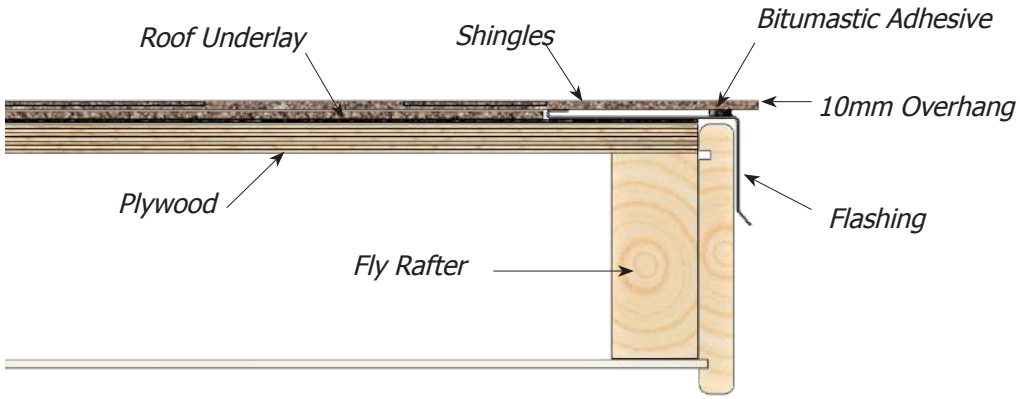
They provide 0.02m2 m2 of Net Free Vent Area per metre.

Choose vent size to suit Ridge capping.

Bituminous Mastic Adhesive & Sealants

Holdfast “Shark seal”, Soudal “BlackJacK” or other bitumen based adhesive sealants that are declared by the manufacturers as being compatible and suitable for use with Asphalt Shingle roofing materials and complying with NZBC:B2 Durability. 3.1(b)

Fig.16.1 - ***Barge Detail - Timber***



Vents Standard Flashings

Fig.16.3a - Std. Eave Flashing

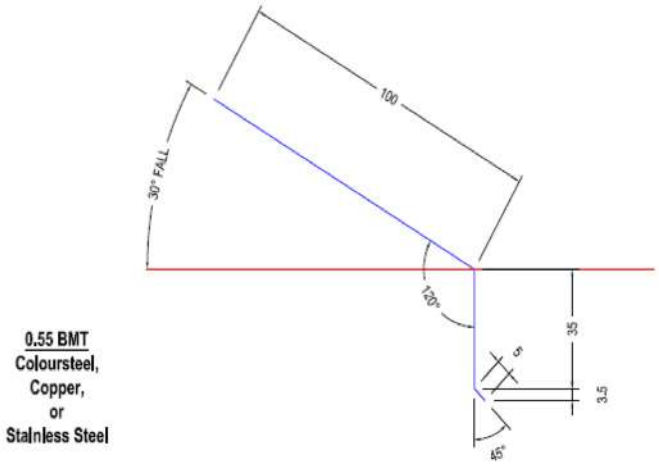
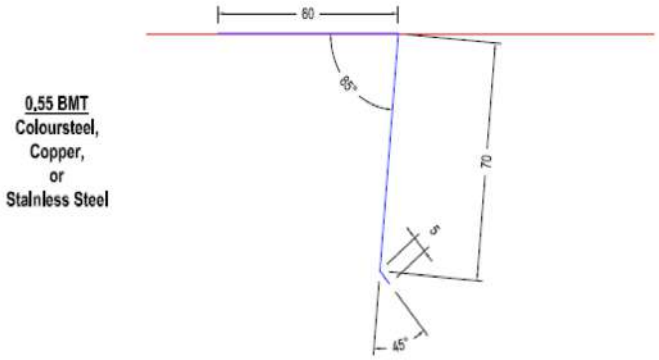


Fig.16.4b - Std. Barge Flashing



Self Adhesive "Peel & Stick" Underlay:

Self adhesive underlayment that meets ASTM D1970 used to cover the plywood substrate for roof pitches between 9.5º and 12º. Where ice or snow build-up is possible apply products to the plywood at the eaves to the plumb line of the exterior wall framing or soffit area. Follow manufacturer's instructions when installing.

Shingle in Vents

(Fig.16.4, 16.5)

Ensure the roof space ventilation is adequate for the space volume and meets local building code requirements.

These vents must be used for areas where ventilation can not be achieved with ridge vents. High profile vents to be used where roof pitch is 18ºor lower and provides 0.025m2 Net Free Vent Area. Low profile vents to be used where roof pitch is over 18 deg and provides 0.018m2 of Net Free Vent Area.

Note: All roof structures must have complete through ventilation from bottom to top to prevent entrapment of moisture laden air (winter) and hot air (summer). Where possible provide cross flow ventilation to avoid air pockets in isolated spaces. Incorrectly ventilated roof spaces may cause premature shingle failure.

Fig.16.4 - High-Profile Vent

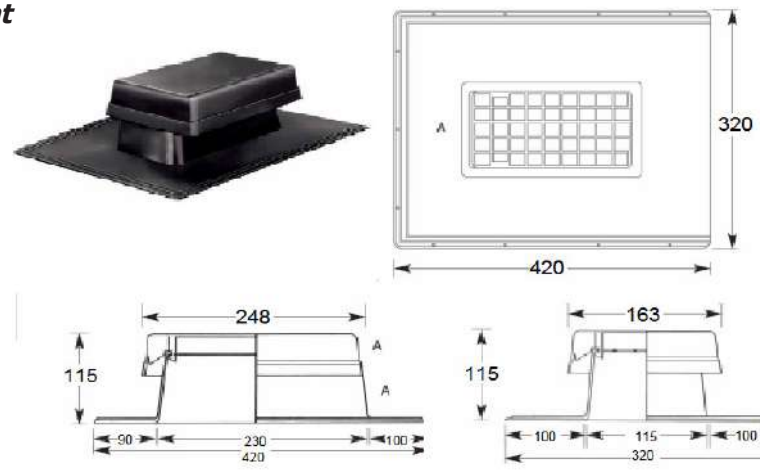
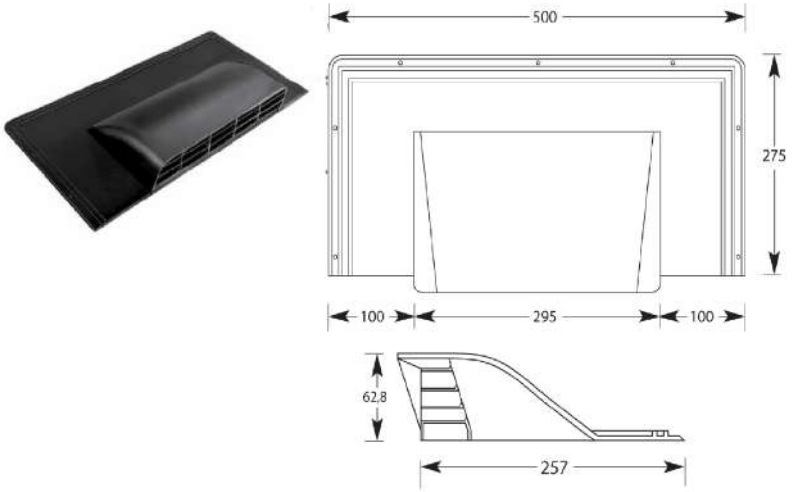


Fig.16.5 - Low-Profile Vent



PVC Kick-Out Flashings

(Fig.16.6)

Designed to be used where roof & wall meet and the Kick-out flashing is a one piece stop end flashing that diverts water into the guttering at wall and roof junctions. The Kick-out flashing creates a downward and outward water-flow off the roof and away from the wall, preventing water intrusion at roof to wall intersections. The flashing is manufactured from UV stable PVC and is available for left hand and right hand applications.

Fig.16.6

Wall Stop-End Flashings

(Fig 16.7)

Designed to be used where Lean to roof & wall meet and the Wall Stop-end flashing is a one piece stop end flashing that diverts water away from the cavity at the top of roof where the roof stops and the wall continues.

The flashing is manufactured from UV stable PVC and is available for 15 to 40 deg roof applications.

Fig.16.7 - Stop-ends

17. PRECAUTIONARY NOTES

Neither Owens Corning nor The Building Agency Ltd will be responsible for problems resulting from any deviation from the recommended application instructions and the following precautions:

1. Install all material in strict compliance with the manufacturer's instructions. Information can be found printed on each pack of shingles.

2. Reasonable steps should be taken to keep the substrate from getting wet before installation. Shingles should not be installed over a wet substrate where moisture content exceeds 18%

If you have any questions about the installation or the Owens Corning Shingle Roofing; please contact The Building Agency.

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