Xtra-Gard

Bitumen Roofing Shingles

Product and Systems Overview

World Reference
in Waterproofing

icopal

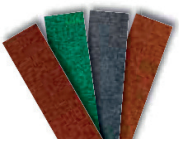
Xtra-Gard Bitumen Roofing Shingles

- **Ideal for all building types**
- **Suitable for pitched roof and vertical surfaces**
- **Hard wearing yet lightweight**
- **A range of designs and colours**
- **Easy to install**

A range of attractive, durable and easy to install roofing shingles available in a choice of shapes and colours. Xtra-Gard Roofing Shingles are applied directly onto the shingle underlay on roofs with a roof pitch between 15° and 45° or directly onto the roof structure on roofs with a roof pitch above 45°.

Xtra-Gard Roofing Shingles have a reinforced heavyweight glass fibre base coated with oxidised bitumen and an upper surface coated with coloured mineral granules. They are supplied in strip form and are available in three shapes with a variety of colours.

Icopal Shingles are easy to install by mechanical fixing and with a good overlap allowance providing maximum waterproofing security with an attractive finish.



Product Range

A range of attractive, durable and easy to install roofing shingles available in a choice of shapes and colours.

Benefits of Xtra-Gard Roofing Shingles

- Choice of shapes
- Attractive colour range
- Durable
- Easy to install
- Lightweight
- Proven performance
- Inert reinforcement
- UV resistant finish

Roofing Shingles at a glance

- Standard Range, Traditional square butt profile
- Classic Range, Attractive half round profile
- Royal Range, Hexagonal profile

Accessories

- Anderson 3B Glass Base Layer for use as an underlay.
- Monartile Protect for use as an alternative underlay.
- Icopal Bitumen Sealant for sealing overlaps.
- SafeSeal Drip Trip for simple detailing.
- SafeSeal Wall Flashing for simple flashing detailing.

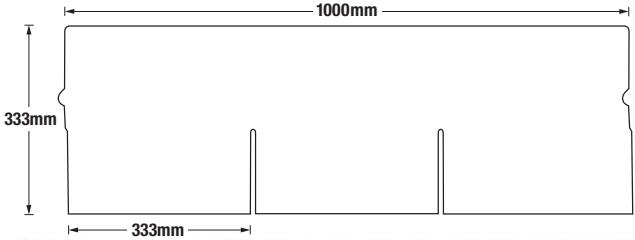
Icopal shingles feature a unique Tab & Groove location system to aid installation.

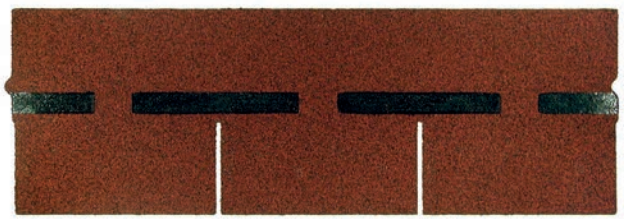
Standard Square Butt

Traditional square butt profile shingles with three tabs.

Product Data	
Minimum thickness	3.5mm
Coverage (strips required per m²)	7
Weight (kg/m²)	11.5kg
Pack Quantity	3m²

Product Availability	
Shingle Width/Length/Colour	**Product Code**
333mm x 1m – Red	3005300
333mm x 1m – Mossy Green	3005301
333mm x 1m – Coal Black	3005299
333mm x 1m – Chestnut Brown	3005298



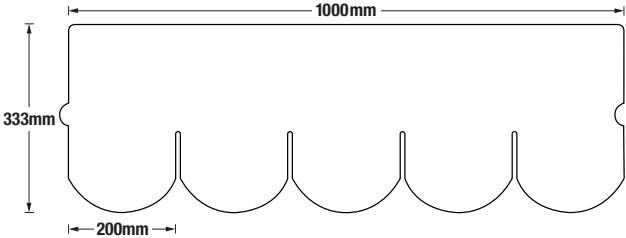


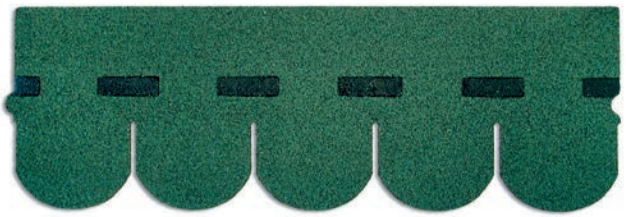
Classic Half Round

Attractive round profile shingles with five tabs.

Product Data	
Minimum thickness	3.5mm
Coverage (strips required per m²)	7.5
Weight (kg/m²)	11.5kg
Pack Quantity	3m²

Product Availability	
Shingle Width/Length/Colour	**Product Code**
333mm x 1m – Red	3005297
333mm x 1m – Mossy Green	3005303
333mm x 1m – Coal Black	3005738
333mm x 1m – Chestnut Brown	3005302



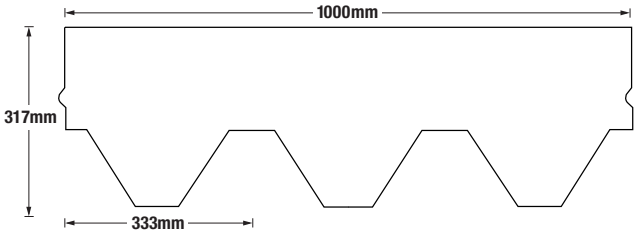


Royal Hexagonal

Hexagonal profile shingles with three tabs.

Product Data	
Minimum thickness	3.5mm
Coverage (strips required per m²)	7.5
Weight (kg/m²)	10.5kg
Pack Quantity	3m²

Product Availability	
Shingle Width/Length/Colour	**Product Code**
317mm x 1m – Red	3005739
317mm x 1m – Mossy Green	3005740
317mm x 1m – Coal Black	3005742
317mm x 1m – Chestnut Brown	3005741



Accessories

Icopal 3B Glass Base Layer

- For use as an underlay on roofs with a pitch between 15° and 45°
- Glass reinforced
- Sanded finish
- Available in rolls 1m x 20m
- Nominal weight 1.8kg/m²

Product Availability	
Roll Width/Length/Nominal Weight	**Product Code**
1m x 20m/39kg	2002652

Monartile Protect

- For use as an alternative underlay on roofs with a pitch between 15° and 45°
- Strong with good nail tear and puncture resistance
- Lightweight
- Flexible and easy to cut
- Easily chalk marked

Product Availability	
Roll Width/Length/Nominal Weight	**Product Code**
1m x 45m/6kg	3006287
1m x 15m/2kg	3004188

Nails

Large headed galvanised roofing nails 18mm long should be used for nailing both the underlay and Icopal Shingles.

Icopal Bitumen Sealant

- For sealing overlaps in Shingles where installed on steep pitched roofs and/or on highly exposed sites
- Available in 310ml cartridges for use in a standard cartridge gun

Product Data	Product Code
Colour	Black
Approx Coverage	11m with a 6mm bead
Drying Time	24hrs under average conditions. Product remains flexible for many months.

Product Availability	
Container Size	**Product Code**
310ml cartridge	3003441

SafeSeal Drip Trim

- A pre-formed aluminium trim used to simplify detailing into gutters
- Available in 1m lengths (covering 0.98m when jointed)

Product Availability		
Product	**Length**	**Product Code**
SafeSeal Drip Trim	Available in 1m lengths	3005227

SafeSeal Wall Flashing

- A pre-formed aluminium trim used as a cover flashing to upstands
- Available in 1m lengths (covering 0.98m when jointed)

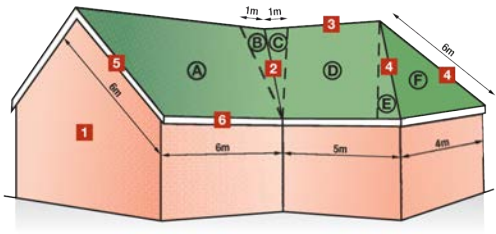
Product Availability		
Product	**Length**	**Product Code**
SafeSeal Wall Flashing	Available in 1m lengths	3005228

Before you start

A few basic guidelines to help make sure fixing your Roof Shingles will be as easy as possible.

Estimate Materials Required
First calculate the roof area by multiplying the length along the eaves and the length up the sloping side for each sloping section of the roof.

If the roof is a complex shape with hips and valleys, break the areas into smaller sections and calculate the area of each of these sections as indicated, finally adding all areas together.



1 Gable
2 Valley
3 Ridge
4 Hip
5 Verge
6 Eaves

The following steps will assist you in determining your material requirements.
All dimensions shown are for example calculation purposes and do not necessarily represent actual dimensions of roof constructions.

Underlay (use roof diagram opposite as a guide)		**Totals**
1. Calculate the roof area (as shown in picture opposite)		
Area "A" –	6 x 6	**36m²**
Area "B" –	6 x 1 ÷ 2	**3 m²**
Area "C" –	6 x 1 ÷ 2	**3 m²**
Area "D" –	4 x 6	**24 m²**
Area "E" –	6 x 1 ÷ 2	**3 m²**
Area "F" –	4 x 6 ÷ 2	**12 m²**
Total roof area		**81 m²**
2. Add 15% for laps and wastage		**12.5 m²**
3. Number of rolls of underlay required*		
81 + 12.5 ÷ 20 = 4.67		**5 rolls**

Please note that a similar calculation is required for the opposite side of the roof, the total area added to the above to determine the total underlay requirements for the complete roof.

* Based on the use of Icopal 3B as the underlay.

Shingles Main roof area (Standard Range)	
1. Total roof area from above (including waste)	**93.5 m²**
2. Number of shingle packs required	
93.5 ÷ 3 = 31.16	**32 packs**

Please note that a similar calculation is required for the opposite side of the roof, the total area added to the above to determine the total shingle requirements for the complete roof.

Ridge (Standard Range)	
The ridge is finished with individual tabs cut from the shingle (see page 24)	
1. Total length of ridge	**13m**
2. Number of tabs required 13 ÷ 0.225 = 57.77	**58 tabs**
3. Number of shingles required 58 ÷ 3 = 19.33	**20 shingles**
4. Number of shingle packs 20 ÷ 20	**1 pack**

Note: all coverages etc are provided as an indication only and are dependant upon complexity of roof and substrate conditions.

	Totals
Hip (Standard Range)	
The hip is finished with individual tabs cut from the shingle (see page 23)	
1. Total length of hip 6 x 2	**12m**
2. Number of tabs required 12 ÷ 0.225 = 53.33	**54 tabs**
3. Number of shingles required 54 ÷ 3 = 18	**18 shingles**
4. Number of shingle packs	**1 pack**
Please note that a similar calculation is required for the opposite side of the roof, the total area added to the above to determine the total shingle requirements of hips.	
Valley (Standard Range)	
The valley is finished with individual tabs cut from the shingle (see page 21)	
1. Total length of valley	**6m**
2. Number of tabs required 6 ÷ 0.225 = 26.66	**27 tabs**
3. Number of shingles required 27 ÷ 3 = 9	**9 shingles**
4. Number of shingle packs	**1 pack**
At roof verges and eaves use shingles reversed to finish roof edges.	
1. Total length of roof verges	**6m**
2. Total length of eaves	**11m**
3. Total number of shingles 11 + 6 = 17	**17 shingles**
4. Number of shingles packs	**1 pack**
Please note that a similar calculation is required for the opposite side of the roof, the total area added to the above to determine the total shingle strip requirements for the complete roof.	
Additional materials required	
1. Xtra-Seal Roof Sealant	
2. 18mm large headed galvanised clout nails	
3. SafeSeal Drip Trim (Optional)	
4. 75mm Hardboard strip for reinforced welted drips	
5. 50 x 25mm timber batten for drip detailing	
Note: all coverages etc are provided as an indication only and are dependant upon complexity of roof and substrate conditions.	

Tools Required

As well as your shingle materials you will need a tool kit comprising;

- Tape measure
- Marker & chalk line
- Sharp knife
- Straight edge
- Small pressure roller
- Cartridge gun (to apply Icopal Bitumen Sealant)
- Soft headed broom & brushes
- Hammer
- Wood saw

The use of personal safety equipment – especially gloves, boots and protective goggles or glasses – is recommended.

Consider the Weather

Before beginning to lay your roof always try to ensure that the weather will be dry and warm for the duration of the work.

Temperature Awareness

During colder weather the shingles may be susceptible to cracking when bent or formed around details.

It is recommended that the shingles are stored in a warm environment for 24 hours prior to use. If it is necessary to work in cold weather, then gentle warming with a hot air paint stripper or similar **(not a naked flame)** will help reduce any cracking when working the shingles. If temperatures and weather conditions become extreme it is advisable to postpone the work until more favourable conditions occur.

Compatibility
Bitumen Roofing Shingles and Underlays are compatible with most materials normally used in building works.
Hydrocarbon and/or solvent based products such as White Spirit, Naphtha, Paraffin and Creosote will have a harmful affect and should not be allowed to come into contact with the shingles or underlays
Timber used in the construction that is likely to come into contact with the shingles or underlays must not be treated with solvent based preservatives.

Material storage
Store materials in a dry and warm location. Rolls must be stored on end on a clean, level surface away from direct heat sources. Shingles should be stored flat on a clean, flat and level surface away from direct sources of heat. We recommend that material is stored in a warm location and taken to the roof as required.

Health & Safety Considerations
Construction or replacement of a roof means that you will be working at height and as such personal safety and prevention against a fall must be considered a priority. Roof refurbishment can be complex, is always high risk and demands careful planning. For detailed information relating to Safety in Roofwork consult HSE publication HSG33.

Always consider the following:
Safe access to the roof – ladders should be of the correct type and height, in good condition and securely fixed to prevent movement or slippage.

Edge protection – working at height requires prevention against falls by providing adequate roof edge protection or independent scaffolding.

Weather conditions – consideration must be given to working in adverse or windy conditions. A sudden gust of wind can lead to loss of balance, particular care should be taken if handling large sheets of plywood or roofing materials.

Material handling – well planned material handling has a significant impact on roof safety and care should be taken when lifting and moving materials to avoid injury.

Getting materials to the roof – reduce the amount of travelling to the ground to collect materials by using lifting appliances such as a gin wheel or scaffold hoist.

Falling materials – precaution should be taken to avoid materials or tools falling from the roof causing injury to people below.

Cables and pipes – always check and identify pipes and cables within the roof structure before work commences.

Overhead cables – check that any cables passing overhead will not interfere with operations, taking particular care when moving metal ladders etc.

Personal protection – always wear the right protective equipment ie: boots, gloves, goggles, hard hat.

Protection of work – adequately protect work in progress.

Inspections

Inspections only take a matter of minutes and involve a routine look at the roof condition. It is important to check the gutters and down pipes, flashings and roof edge details as well as valley, hip and ridge details.

In Spring it is important to check gutters and down pipes are not blocked by fallen leaves which may cause the gutters to overflow.

Definitions & Design Considerations

Remember, Building Regulations require that new construction and re-roofing projects over a certain size require Building Regulations approval and inspection by building control.

Roof Design Considerations

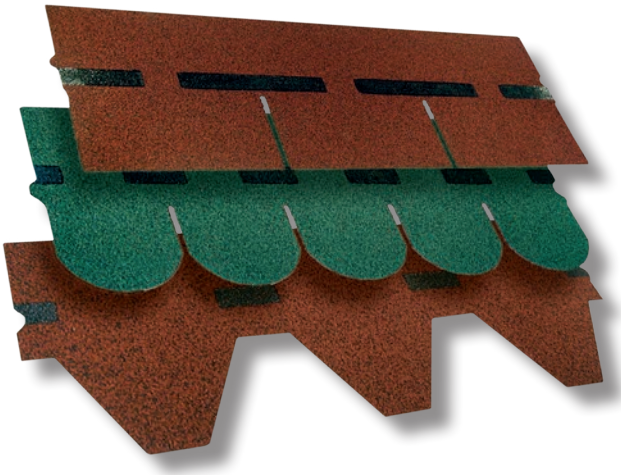
- **Roof pitch** – the roof pitch for shingles must be no less than 15° and adequate drainage and guttering must be provided. Icopal shingles can be applied to vertical surfaces as cladding.
- **Roof drainage** – ensure adequate guttering and drainage is provided to accommodate the volume of water from the roof.
- **Insulation** – habitable rooms will require levels of insulation to comply with Building Regulations whilst sheds, summer houses and the like can be un-insulated.
- **Roof access** – ensure that the roof is adequately designed for its intended use and for future access for maintenance.
- **Wind action** – ensure the roof structure is adequately designed and restrained against wind damage. Particular attention is required for high level roofs or exposed and coastal locations.
- **Condensation** – adequate steps should be taken within the roof design to ensure protection of the structure from the build up and harmful effects of condensation.

For more information regarding the design and waterproofing of pitched roofs please refer to the Icopal Pitched Roofing Underlay Product and Systems Overview. A copy can be obtained by calling the Marketing Department on 0161 865 4444 or visiting the Icopal web site www.icopal.co.uk.

Deck Materials

Xtra-Gard Bitumen Roofing Shingles are suitable for application over the following types of roof deck:

- **Plywood** – Class 2 or 3 to B.S. EN 314:part 2:1993 and B.S. 5268: part 2:2002, pre-treated in accordance with B.S.6566: part 7:1985, minimum thickness 18mm
- **Orientated Strand Board (OSB/3)** – to B.S. 5669:part 3:1992 grade F2 minimum thickness 18mm.
- **Close timber boards or tongue & grooved boards** – boards of 25mm minimum thickness should be applied close butted with a maximum 2mm joint space. Boards must be properly fixed with irregularities between board thickness no more than 2mm.



Installation

Xtra-Gard Bitumen shingles are easy to install over an underlay if necessary. Shingles are butt jointed with a tongue and groove end profile, overlapped as work progresses up the roof.

Step 1: Preparation

On existing roofs the existing roof waterproofing must be removed and disposed of safely.

Check the roof for adequate fixing and flush board joints, ensure there are no steps or hollows in the roof deck.

Replace any damaged or rotten sections of the roof deck or structure.

Ensure all nail/fixings heads are well driven to avoid puncturing the waterproofing.

Step 2: Applying the Underlay

It is recommended that an underlay of Icopal 3B Glass Base Layer or Monartile Protect is applied on roofs with a pitch between 15° and 45°. Above 45° the underlay is not required unless the building is in an exposed location.

Starting at the eaves and working up the roof slope the underlay is applied parallel to the eaves line. Fix into position with large headed galvanised clout nails at 150mm centres ensuring the underlay is flat to the roof deck, overhangs the roof edges and is turned down. Allow 75mm side laps and 100mm end laps in the underlay and secure by nailing at 50mm centres along all overlaps.

At the roof ridge the underlay should extend above the ridge and be turned down the opposite roof slope a minimum of 100mm and nailed.

The underlay should also extend beyond valley and hips in a similar fashion.

Repeat the process for all sloping areas of the roof.

Step 3: Applying Shingles to Eaves and Verges

To create a welted drip into the gutter (to be attached later); and along sloping verges secure a 50mm x 25mm timber batten to the fascia with the top edge level with the roof surface.

Before attaching the shingles to the batten first trim the end to remove the tongue and rebate leaving a straight edge, tack the shingles to the batten with galvanised clout nails with the plain edge flush with the roof surface and the mineral finish against the batten.

Each length of shingle should be overlapped 75mm and carefully sealed with Icopal Bitumen Sealant taking care not apply too much sealant thus avoiding excess being squeezed out at the edges. Repeat the application of shingles for the full length of the eaves and verges before applying the main roof shingles. Ensure the shingles run past the end of the eaves for finishing later.

Next fix the hardboard strip by nailing in a double staggered row through the shingles into the batten at 150mm centres with the top edge of the hardboard strip level with the roof surface.

Apply Icopal Bitumen Sealant in a zig zag to the face of the hardboard strip and turn each shingle around the hardboard strip and turn back onto the roof. Roll the face of the drip with a clean rubber roller to expel any air and ensure an even and full bond between the shingle and the hardboard strip. Nail the overlap of the shingles to the roof with clout nails at 150mm centres close to the top edge to avoid the nails being exposed following the fixing of the roof shingles.

NOTE: In cold weather keep the shingles and any underlay being used in a warm environment until ready to be used, it may also be necessary to gently warm the shingles with an electric hot air gun such as an electric paint stripper – **Do not use open flames.**

To create a neat drip finish to the sloping verges start at the bottom of the slope and repeat the above process up the sloping verges.

Finish the detail between the eaves drip and the verge drip by cutting the eaves strip and overlapping the verge drip before forming the verge drip.

All eaves and verges should be completed as described above before the main roof area is covered with shingles.

Step 4: Using Bitumen Roofing Shingles to Waterproof Valley Sections

Valley detailing sections must be completed before the main roof shingles are applied.

It is recommended that the valley is first lined with a layer of Shingle Underlay, nailed into position. The Shingle Underlay must be laid from the bottom working up the slope with any end laps having the head of the lower sheet nailed and the upper sheet overlapping the lower sheet to cover the nailing and to create a minimum overlap of 100mm sealed with Icopal Bitumen Sealant.

The valley is finished by applying individual tabs cut from the shingle centrally over the valley, which are nailed at the top edge and overlapped by successive tabs. The lower edges of the tabs should be sealed with Icopal Bitumen Sealant. Be careful not to apply too much sealant too close to the edges of the tab to avoid excess being squeezed out. Also avoid dripping sealant onto the finished work.

As the roof shingles are laid up to the valley the last tabs should be left loose to allow cutting to the line of the valley and subsequent nailing and sealing with Icopal Bitumen Sealant.

Step 5: Application of Roofing Shingles

Starting at the eaves apply the first shingle flush with the verge; trimming the tongue or rebate flush for a neat finish. The tabs should be level with the eaves edge and nailed in position with large headed galvanised clout nails with the end nails 10-15mm from the edge. Nail each shingle above the end of the slots between tabs 10-15mm above the end of the slots. Ensure the slots between the tabs below are covered by the roofing shingle by offsetting the tabs as required. Butt the next shingle to the first, locating the tongue and rebate leaving a 1-2mm gap between each shingle.

Repeat this process along the length of the roof. To secure the tabs of the shingles apply a bead of Icopal Bitumen Sealant below each tab and press tabs down as work proceeds; take care not apply too much sealant or apply it too close to the edge thus avoiding any excess sealant being squeezed out. Also take care not to drip sealant over the finished work.

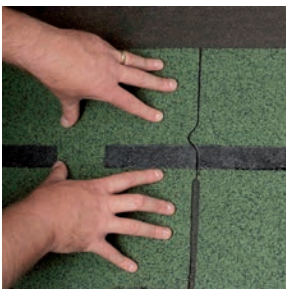
Before applying the next row of shingles measure the gauge or overlap at each end of the roof and mark a gauging line with a chalk line, this will ensure a straight overlap and gauge.

When positioning the first shingle of the next row this must be offset from the previous row by half a tab and fixed as above. Trim the overlaps at the roof edges.

To ease application in cold weather and avoid cracking gently warm the shingles with an electric hot air gun such as an electric paint stripper – **Do not use open flames.**

At the ridge finish the last row and trim any excess material flush with the edge of the ridge.

Repeat the above procedure for all sloping surfaces.

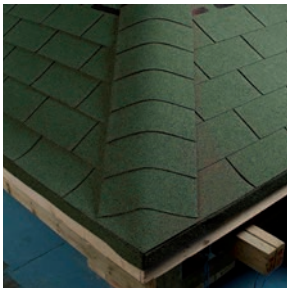


Step 6: Using Bitumen Roofing Shingles to Waterproof Hip Sections

Hip detailing sections are completed after the main roof shingles are applied.

It is recommended that the hip is first lined with a layer of suitable underlay nailed into position.

As the roof shingles are laid up the hip they are cut to the line of the hip as for ridge detailing. The hip is finally finished with hip shingles cut and applied as for ridge shingles. The hip shingles are applied starting at the bottom and working up the slope,
nailed into position ensuring the centre line of the tab is in line with the hip line and subsequent shingles overlapping the lower shingle and tabs secured with Icopal Bitumen Sealant. In cold weather to ease application and avoid cracking it may be necessary to gently warm the material with an electric hot air gun such as an electric paint stripper – **Do not use open flames.**



Step 7: Application of Ridge Shingles
To finish the roof ridge, shingle tabs need to be cut from the shingle.

Each shingle tab is used to form a ridge shingle. The ridge shingle should be applied in the opposite direction of the prevailing wind. Carefully bend each ridge shingle over the ridge, ensuring the centre of each tab is along the ridge line. In cold weather to ease application and avoid cracking it may be necessary to gently warm the material with an electric hot air gun such as an electric paint stripper – **Do not use open flames.**

With the ridge shingle in position nail it into place ensuring each nail is positioned to allow the next shingle to create an overlap and hide the nail. The leading edge of each shingle should be secured with a bead of Icopal Bitumen Sealant and the shingle pressed into position. Take care not to apply too much sealant, too close to the shingle edges causing excess sealant to be squeezed out. Also take care not to drip sealant onto finished work.

Hip

Eaves & Verge

Ridge

Notes

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