



KATEPAL



INSTALLATION GUIDE

Katepal bitumen roofing shingles

PRODUCT INFORMATION & INSTALLATION GUIDE

ROCKY

KATRILLI

CLASSIC KL

JAZZY

AMBIENT

MANSION

3T



PRODUCT INFORMATION

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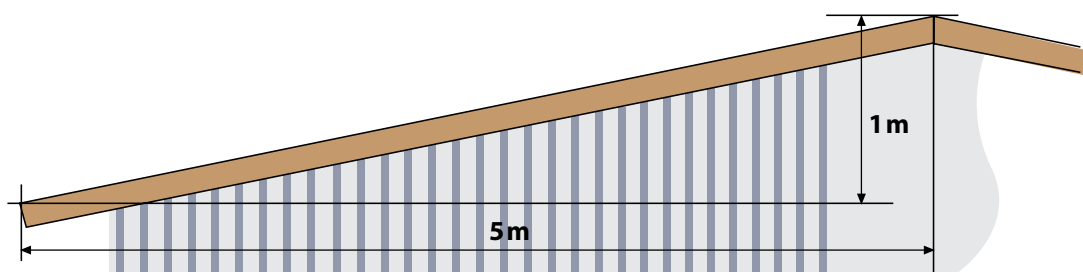
The latest version of this installation guide can be downloaded from www.katepal.fi



PRODUCT INFORMATION

Applications

Katepal SBS rubber bitumen roofing shingles are suitable for both new construction and renovation of old roofs with a pitch of at least 1:5 (approx. 12°), i.e. the roof's slope descends one metre vertically for every five metres horizontally. The steeper the roof, the better the appearance of the shingles. Roofs with variable forms are particularly suitable for bitumen roofing shingles as the material is flexible and easy to install on any roofing element, including valleys, penetrations, joints and seams. Reliable sealing can be achieved with Sealing Compound K-36. Roofing shingles are easy to install and can be installed by non-professional builders.



Basic installation principles

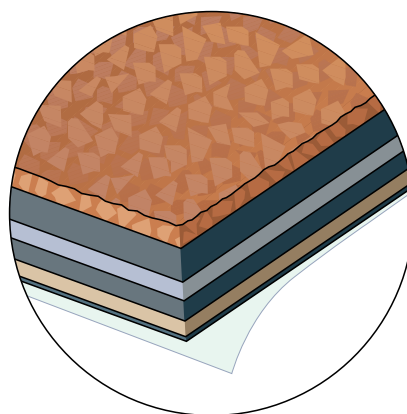
The roofing shingles are fastened to the roof with roofing nails that are sufficiently long to penetrate the substructure. The shingles are overlapped so that the nails are covered by the shingles laid on top of them. The underneath of the shingles is partially self-adhesive, which fixes the shingles together to create a watertight finish.





Composition

Katepal roofing shingles are manufactured from SBS rubber bitumen. The supporting glass sheet layer guarantees good dimensional stability. SBS rubber bitumen ensures that the shingles are waterproof and flexible. The upper surface of the shingles contains slate and/or mineral granules. The lower surface is partially covered by a self-adhesive rubber bitumen covered by a protective membrane. The rest is covered by a sand surface. The surface granules give the product its colour and create a matte surface finish that blends in well with surrounding environment. The surface granules also give the shingles a rough surface with high friction, increased resistance to UV radiation, and the necessary fire protection performance (fire class BROOF (t1), BROOF (t2) or BROOF (t4)).



Eave/ridge shingles

Eave/ridge shingles are rectangular roofing shingles. Like regular shingles, they are covered with granules on their upper side and have a partially sand-covered self-adhesive surface on the lower side. They are used at the lower eaves of the roof, and are installed using the butt joint technique.

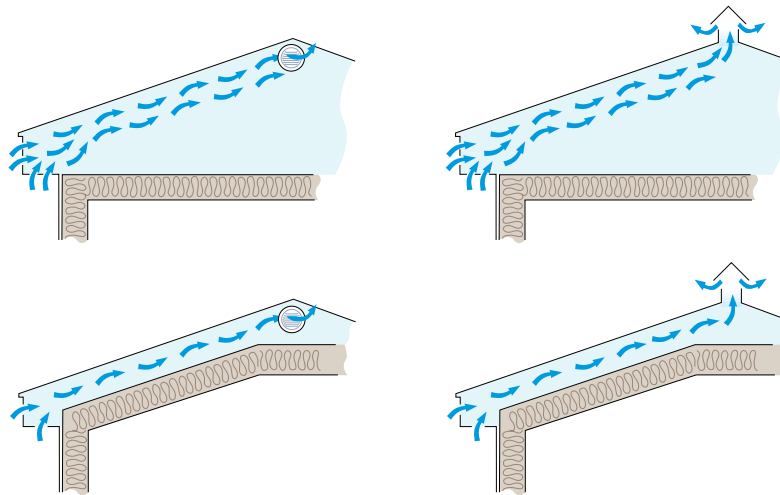
At the ridge, the eave shingles are folded and separated into three parts at the perforation and the ridge shingles are then overlapped at the ridge as instructed.

Packaging

A package of Classic KL, Jazzy, Katrilli or Rocky shingles contains 22 roofing shingles, i.e. enough for 3 m² of finished roof. A package of Ambient shingles contains 17 shingles (2.18 m² of finished roof), a package of 3T shingles contains 17 shingles (2.4 m² of finished roof) and a package of Mansion shingles contains 10 shingles (1.6 m² of finished roof). An eave/ridge shingle package contains 20 shingles – enough material for 20 m of lower eave shingles or 12 m of ridge/hip shingles. Installation instructions are included in all packages.

Ventilation

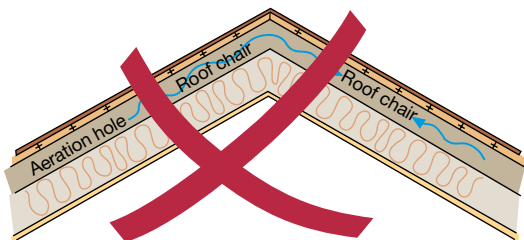
A wooden roof must be ventilated to ensure its functionality and durability. The structure must have a ventilation gap of at least 100 mm under the roof decking. The ventilation air outlets must be as high as possible (at the ridge or in the end gables), using underpressure vents when necessary. The eaves need sufficiently large ventilation holes. When necessary, all ventilation holes, gaps, grates and valves must be equipped with nets to prevent birds, squirrels, etc. from accessing the ventilation space. Discontinuities or holes in the vapour barrier of the roof increase the need for ventilation.



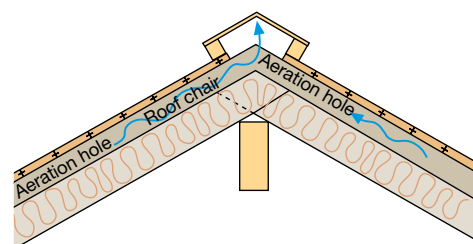
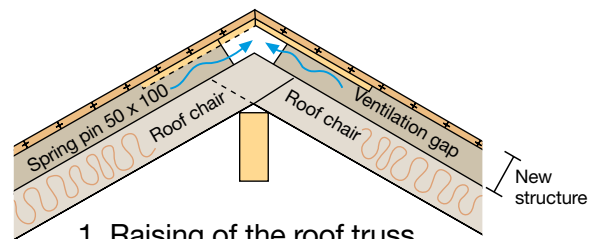
Fixing ventilation issues

If the ventilation gap is formed by channels between the roof trusses from the eave to the ridge, the channel needs to be continuous, allowing air to pass through all roof truss gaps. It may be necessary to raise the roof ridge if this is the only way to ensure properly functioning ventilation parallel to the ridge.

Old, non-ventilated structure



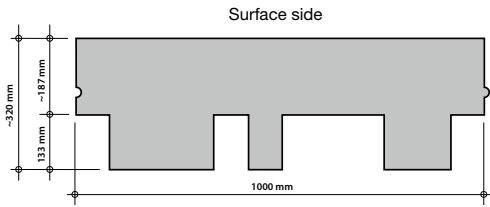
Functional ventilation



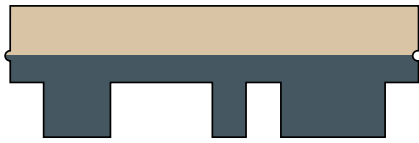


DIMENSIONS AND MODELS

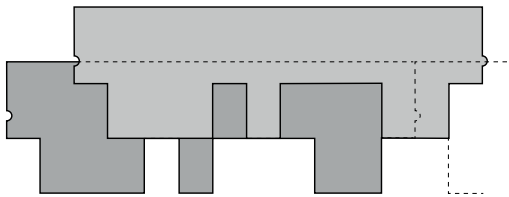
Measurement, Rocky



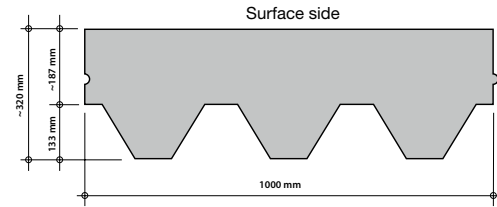
Flip side



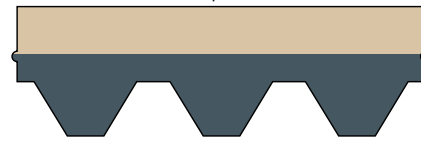
Installation, Rocky



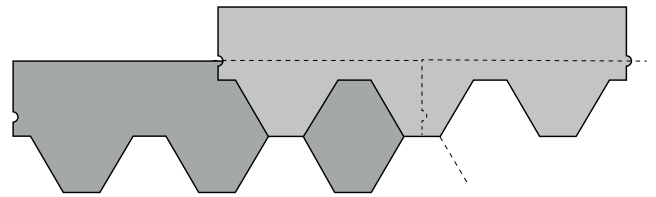
Measurement, Jazzy, Katrilli, Classic KL



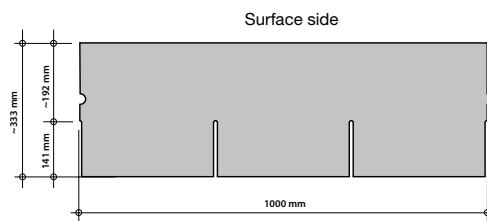
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Installation, Jazzy, Katrilli, Classic KL



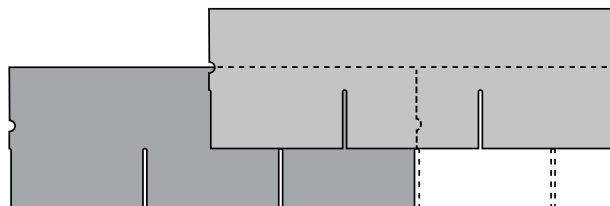
Measurement, 3T



Flip side

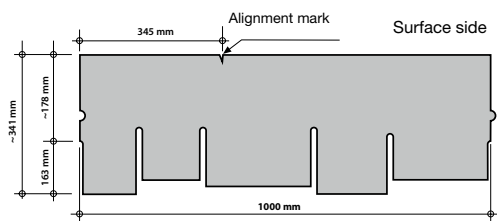


Installation, 3T



DIMENSIONS AND MODELS

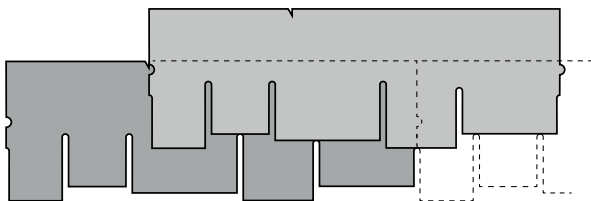
Measurement, Ambient



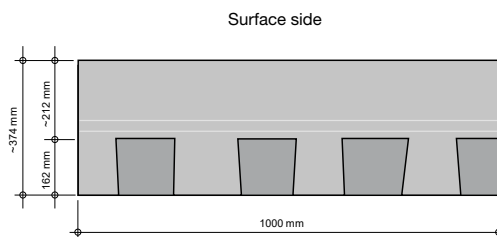
Flip side



Installation, Ambient



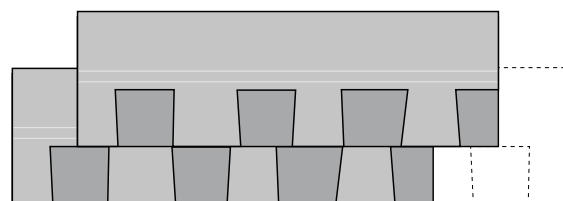
Measurement, Mansion



Flip side



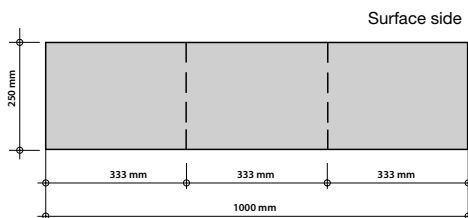
Installation example, Mansion



Eave/ridge shingles

1 eave shingle => 3 ridge shingles

Measurement, eave/ridge shingle



Flip side





OTHER MATERIALS AND SUPPLIES REQUIRED FOR INSTALLING ROOFING SHINGLES

Underlays

- SuperBase Grip Green, XtraBase or other underlay manufactured by Katepal suitable for use with roofing shingles.
- When using roofing shingles, always start by installing an underlay on top of the roof decking.
- SuperBase Grip Green is made from SBS rubber bitumen and durable polyester felt.
- XtraBase is made from SBS rubber bitumen and a glass sheet.
- There are also other Katepal underlays available, depending on the market.
- If the roofing shingles will not be installed immediately after the underlay (for instance, if this is delayed by the construction of pipes, conduits and other penetrations), we strongly recommend using SuperBase Grip Green. We also recommend using SuperBase Grip Green if the roof will only be supported by an underlay over the winter.
- All of these underlays include an adhesive edge to make installation easier and ensure fast, easy and precise sealing. In cold conditions (below +10°C), the membrane adhesion should be ensured by heating the adhesive surfaces with a hot air gun, especially when constructing roofs in the autumn. Attach the underlay to the roof decking with roofing nails. The nails must be long enough to penetrate the roof decking.
- Roll size 1 x 15 m.
- Material requirement 1.15 x the roof size.

Underlay selection guide for bitumen shingles

Roof structure	SuperBase Grip Green	XtraBase
Steep roofs, pitch > 1:3	X	X
Gently sloping roofs, pitch 1:3 - 1:5	X	X
Roofs with complex or otherwise challenging structures/forms	X	
Suitable for winter protection during construction	X	

Katepal SuperBase Grip Green

The supporting layer of Katepal SuperBase Grip Green is made of durable, hard polyester fibre, which increases its resistance to tearing. SuperBase's excellent tearing resistance is particularly important in sections where parts are nailed down and in the valleys of the roof structure, as SuperBase Grip Green can handle these sections without tearing. Despite its durability, SuperBase Grip Green can also be processed easily during the different stages of installation, including in cold conditions. Adhesive sections ensure the permanent adhesion of the underlay layers to each other, making the roof structure 100% waterproof. With a small amount of extra work, Katepal SuperBase Grip Green can be used to provide protective coverage for a roof over winter with only an underlay. SuperBase Grip Green also increases safety with its high-friction surface that prevents slipping.

Pintari valley sheet

- Valley sheets are used to create valleys, upturns for walls and upturns for the pipes and conduit groups. Other bitumen top felts such as torch-on or glued (K-36 or hot bitumen) top felts can also be used for these roofing details.
- Pintari is made of SBS rubber bitumen and extra-tough polyester sheet, and its upper surface contains coloured granules. The lower surface is made of sand.
- Pintari is glued and sealed with Sealing Compound K-36. Roll size is 0.7 x 10 m.

Metal drip trims

- Metal drip trims are always used with eaves and are also recommended for use with end eave flashing.
- Metal drip trims are overlaid by 50 mm at the joints.
- The length of the metal drip trim is 2 m.
- A package contains 10 metal drip trims (20 m, usable length 19.50 m).

Sealing Compound K-36

Sealing Compound K-36 is made from rubber bitumen. It is used for gluing and sealing various elements, such as:

- the end joints of the underlay, valleys, penetrations and upturns
- the end eaves, valleys, penetrations, etc. used when installing roofing shingles
- valleys and upturns made with Pintari

First, use a steel spatula to spread a 1 mm thick layer of Sealing Compound K-36 or apply it directly from a 0.3 litre tube using a caulking gun. Sealing Compound K-36 thickens in cold conditions, so we recommend using it only in temperatures higher than +10 °C. The product can be used in colder weather as long as the package is kept warm. Sealing Compound K-36 is available in 10, 3, 1 and 0.3 litre packages.

Katepal Seal Sealing Compound

Katepal Seal Sealing Compound is a solvent-free MS polymer-based sealant and adhesive that is designed especially for bitumen roofing. It also works well for small repairs and sealing of steel and brick roofing. The product is also suitable for various indoor uses.

Grommets

Round penetrations (such as sewer ventilation pipes) use grommets made of EPDM rubber that are equipped with a tightening ring. These are available for pipes with a diameter of 10–830 mm. Pass-throughs made of PP-plastic are also available.

Underpressure vents

If ventilation holes cannot reach the roof ridge's gable ends from the ventilation space, or if the ridge's length is over 15 m, we recommend installing underpressure vents on the ridge. This is common in terraced houses, where fire blocks also prevent ventilation from being installed parallel to the ridge. In detached houses, especially those with hipped roofs, the ridge also often requires ventilation with underpressure vents or similar structures.

Substructure

- The roof decking for the bitumen roofing shingles is usually constructed from tongue and groove (T&G) boarding, or alternatively from building board. It needs to be sufficiently sturdy, rigid, smooth and dry. (Table 1)
- We recommend constructing the decking from T&G board (approx. 95 mm wide). When using rough-sawn boards (approx. 100 mm wide), the boards need to be sturdier, fully edged, relatively knot-free and of a similar quality to ensure that adjacent boards do not bend in dissimilar ways.
- The board joints must be located at the roof trusses or be supported separately. When using boards with T&G ends, there must be at least three unbroken boards in one gap between the lengthening pieces.
- Allow for expansion of the boards caused by changes in moisture levels and temperature by leaving a sufficient gap between them. When using T&G spruce plywood or OSB board, follow the manufacturer's instructions regarding thickness and how to attach the boarding.

Table 1. Minimum thickness of substructure (mm)

Support gap	Rough T&G board	OSB board	Veneer board
600	20	15	15
900	23	18	15-19
1200	30		19

*) As stated in the boarding manufacturer's instructions, noting the snow load



INSTALLATION

Required tools

No special tools are required to install Katepal bitumen roofing shingles. A hammer, roll tape, hook-edged knife, steel spatula and caulking gun are sufficient. A pressure nail gun can also be used. Coloured twine or wire can be useful for marking straight lines. A sheet cutter is also needed for installing the drip trims and other metal flashings.



Installing the underlay

- Always use an underlay with bitumen roofing shingles.
- We recommend SuperBase Grip Green, XtraBase or other underlay manufactured by Katepal for roofing shingles underlayment.
- If the roofing shingles will not be installed immediately after the underlay (for instance, if this is delayed by the construction of pipes, conduits and other penetrations, if the roof has a complex structure, or if the roof will be covered only by an underlay over the winter), we recommend using SuperBase Grip Green (see the selection guide on page 8).
- In cold conditions (below +10°C), the membrane adhesion should be ensured by heating the adhesive surfaces with a hot air gun and storing the rolls in warm conditions prior to installation.
- The underlay can be installed horizontally or vertically on top of the roof decking (images 1a and 1b). Unroll the underlay, place it in a straight line on the roof, then pull it tight before nailing it at the adhesive edge (including the hidden ends).
- On steep roofs, vertical installation is easier. To avoid folds, ensure that the underlay is straight and sufficiently tight. When installing underlay during cold weather, pay particular attention to the tightness.

A more detailed installation guide can be found on the next page.

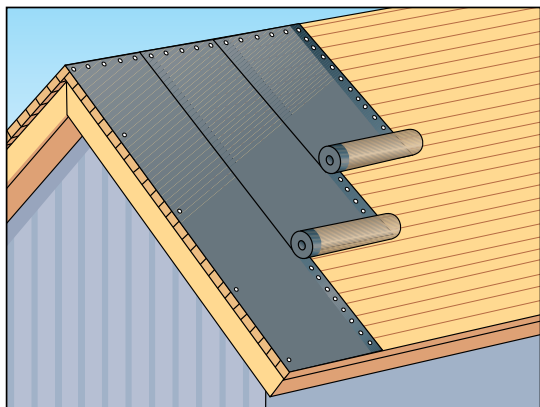


Image 1a

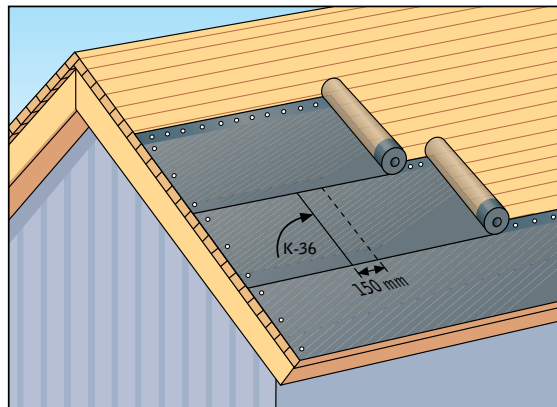


Image 1b

- Each roll wrapping contains an installation guide.
- Start the installation of the underlay by installing an underlay sheet parallel to the valley. Nail the membrane to the substructure along the edges at 20 cm intervals, ensuring that the sheet lies snugly along the valley base (image 2).
- Install the underlay horizontally or vertically directly on top of the boarding. In valleys, underlay sheets should overlap the valley underlay by 150 mm and be glued to it with Sealing Compound K-36. Install metal drip trims on the eaves on top of the underlay (image 3).
- If the end eaves use a raised eave structure, the battens must be installed before installing the underlay, and the underlay should go around the end eave to form a drip mould (images 4a and 4b).
- On the ridge, cut the underlay of the first slope at the ridge and nail the upper edge in place. Extend the underlay of the second slope 150 mm over the ridge and glue it on top of the underlay of the first slope using Sealing Compound K-36 (image 5).
- At the upturns, the underlay should continue at least 50 mm from the roof surface and, if necessary, be nailed to the upturn (image 6).

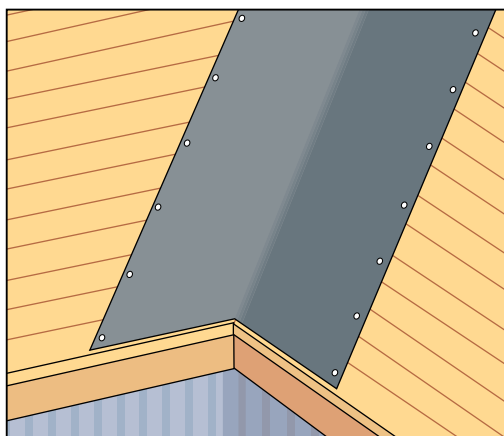


Image 2

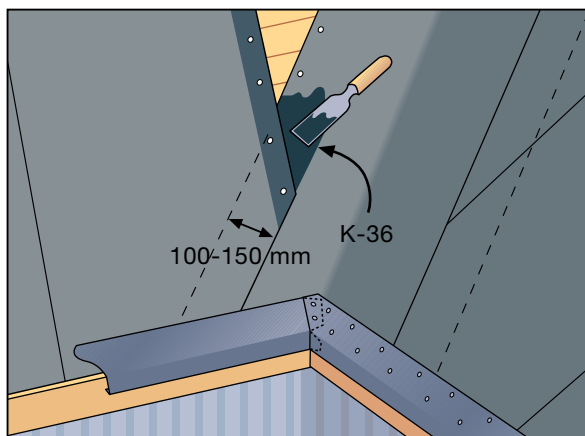


Image 3

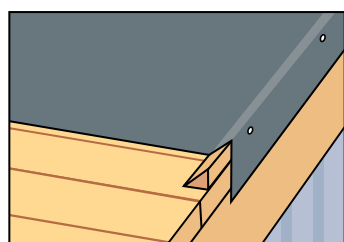


Image 4a

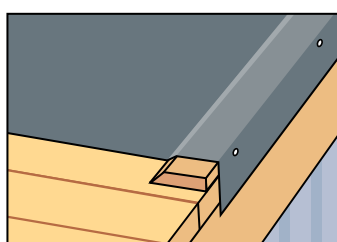


Image 4b

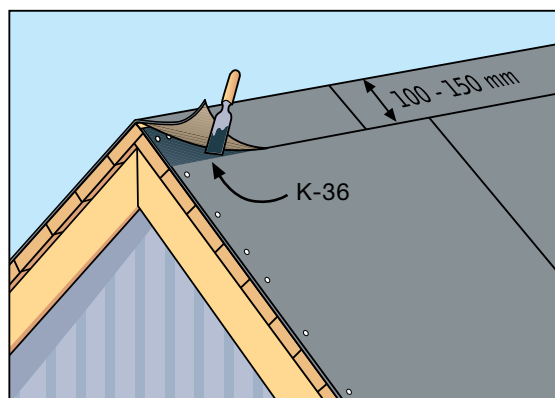


Image 5

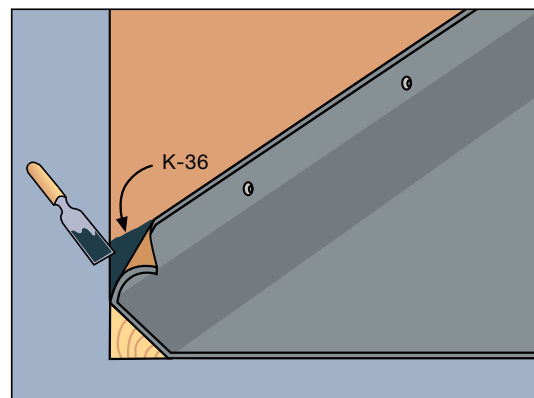


Image 6

Metal drip trims

- Metal drip trims are installed on top of the underlay. This is always done when working with eaves, and also generally with end eave flashing (unless the end eaves are not raised). Attach the metal drip trims to the substructure through the underlay with roofing nails or screws that have flat, wide bases.



- In order to avoid visible nail ends on the lower surface of the eave, use sufficiently short and thin plate screws with large, flat bases.
- At the end eaves, we recommend bending the metal drip trims to a 90° angle, so that the front edge faces directly towards the ground.
- The metal drip trims should overlap each other by 50 mm, and a small piece of the double-folded edge should be cut from the end of the lower sheet along with part of the lower corner. Two nails (or two screws) should go through the overlapping part and through both sheets.

End eave flashing

When using raised end eaves, install the end eave flashing after installing the shingles. Install the flashing on the verge from the vertical surface using sealed roofing screws (5–6 screws for each 2 metres of flashing). The lengthening pieces should overlap by 50 mm. Cut the corners from the folded edges of the lower flashing to ensure neat, flat overlapping. Start the installation from the lower part of the eave, so that the upper flashing pieces go on top of the lower flashing. This ensures that water cannot flow under the flashing. See page 17 for detailed pictures.



Pintari valley sheet

- After installing the underlay and the metal drip trims, install a Pintari top sheet in the valleys, parallel to the valley sheet on top of the underlay. When working at the bottom of the valley, ensure that the valley sheet is placed closely against the substructure, so that the valley sheet is not damaged under loads, e.g. snow, ice or when people move around on the roof. Glue the edges of the valley sheet to the underlay using Sealing Compound K-36, and use nails to prevent sliding during work (image 1).
- At the eaves, glue the valley sheet to the metal drip trims with Sealing Compound K-36. Also glue the possible lengthening pieces. If the valleys end on the slope and join together, the valley sheets must be installed crosswise and their ends glued so that water cannot leak between them (image 2). If the valley sheet ends at the ridge, cut the valley sheet at the ridge and nail the upper end to the substructure so that the nails are covered by the shingles.

If the lower end of the valley is located on the slope (roof lantern and other structures), install the valley sheet only after the roofing shingles have been installed up to the level of the lower edge of the valley sheet. For more specific installation instructions see the Special Instructions section on page 22.

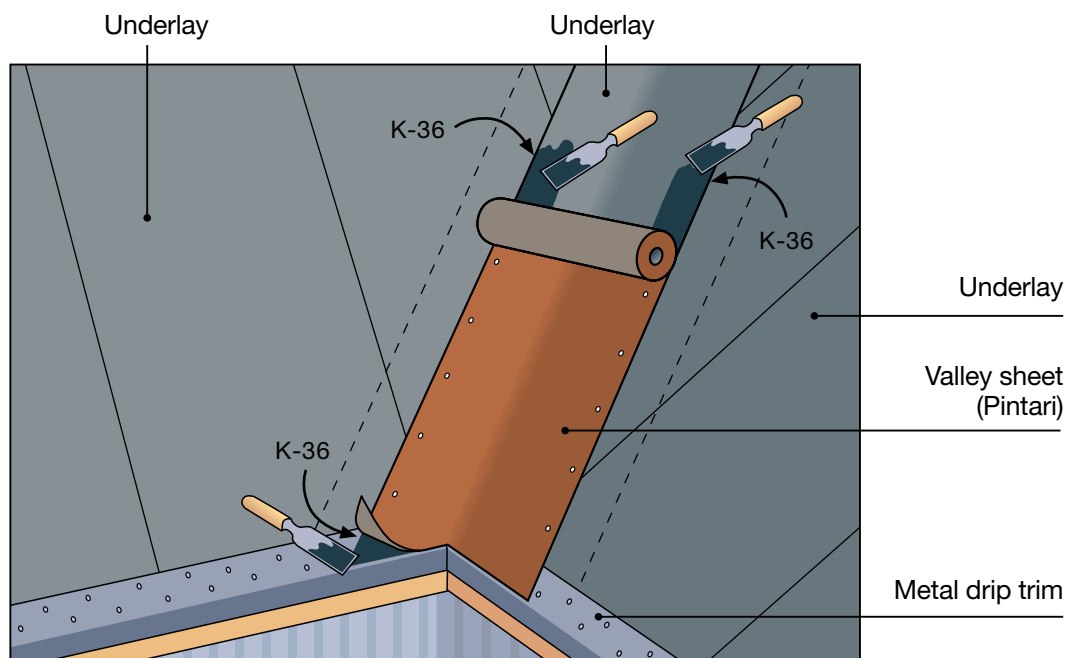


Image 1

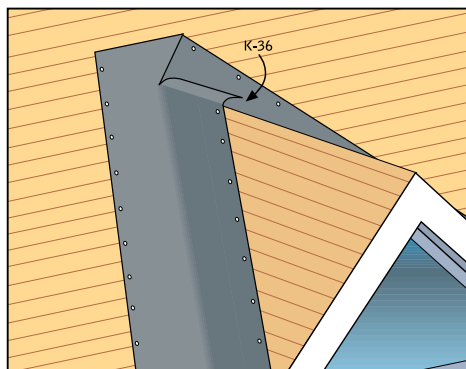


Image 2

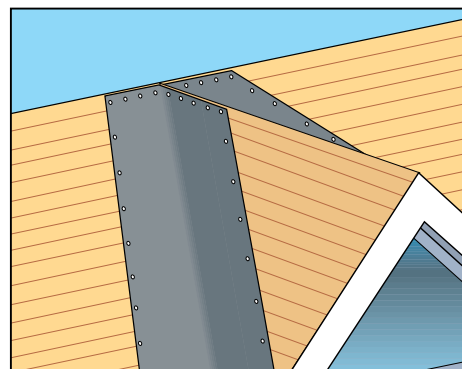


Image 3

Installing roofing shingles

Weather requirements for installation

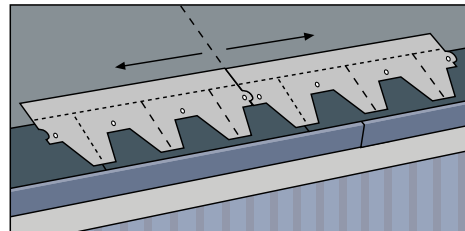
Do not start installation when it is raining or snowing. Make sure that the surface is dry before installing the next layer of roofing shingles. It is acceptable to start roofing when the surface of the underlay is still damp.

The recommended minimum installation temperature is +5 °C, because in colder conditions it is harder to ensure adhesion between roofing shingles. In cold conditions (below +10 °C) adhesion should be ensured by heating the adhesive surfaces with a hot air gun.

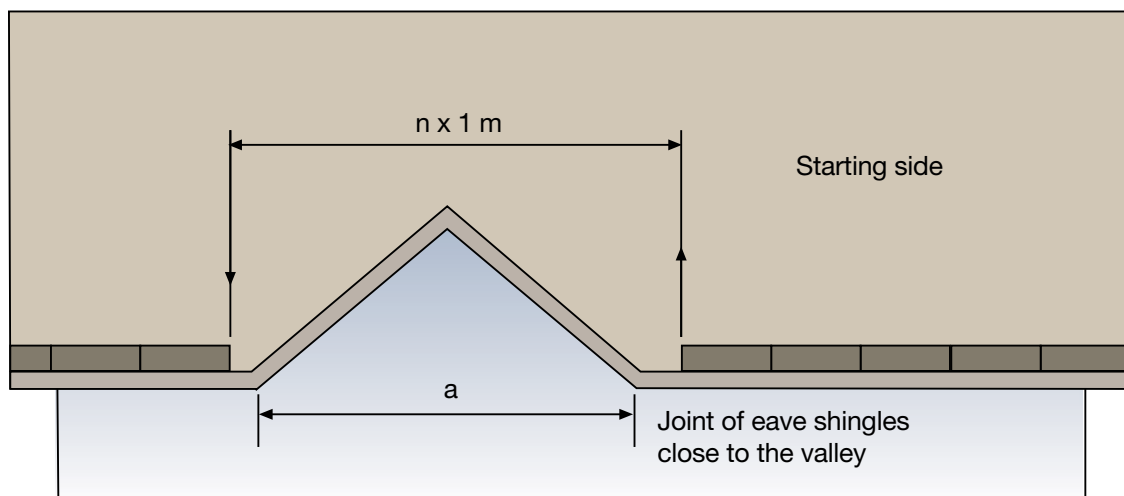
All roofing materials should be stored in warm conditions prior to installation.

Eaves/eave shingles

- Install eave shingles over the drip trims.
- Eave shingle installation starts at the same point of the eave where the installation of the roofing shingles starts. Installation of Rocky, Katrilli, Classic KL, Jazzy, Ambient and 3T shingles begins at the middle of the slope, so that the tabs of the shingles cover the end joints and the perforations of the eave shingles.



- Remove the protective film covering the adhesive surface and press the adhesive side of the eave shingles against the metal drip trim, leaving 10 mm of the drip trim visible.
- Install the shingles in sequence and butt joint the ends without leaving any gaps.
- If the eave line is not straight and continuous (for example, above bay windows or where there are verandas with turns in the direction of the eaves), the distance between the ends of the eave shingles on the opposite sides of the veranda or other similar structure must be divisible by 1 metre (measured above the structure). This enables the correct alignment of the pattern of the shingles above the structure. Usually the dimensioning has to be done by marking out perpendicular reference lines over the structure, as shown below. See the instructions for working around a veranda or similar structure on page 21.



In the above image $n = (a+1)$, rounded up to the next integer in metres

E.g. if $a = 3.5$ m, $n = 5$

Installing Mansion shingles

Before installation, open four to five packages of shingles and mix them to prevent noticeable color differences. If this cannot be avoided, colour differences must be observed at all times during installation. Do not install different manufacturing batches on the same slope.

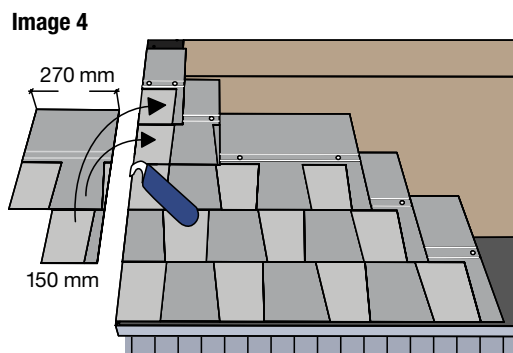
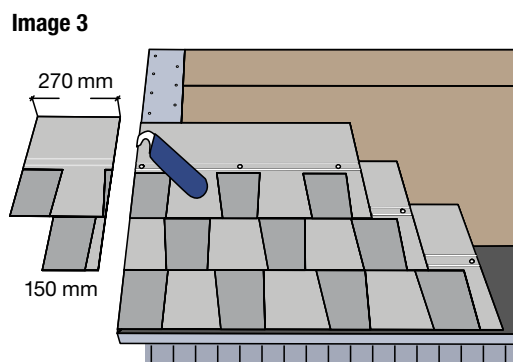
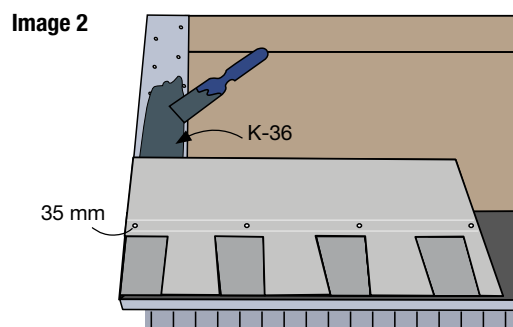
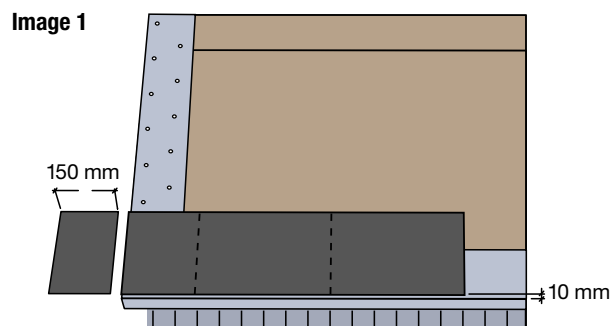
Start installation from the verge on the drip trim with an eave shingle as shown in the image. Shorten the first eave shingle by 150 mm and remove the plastic covering from the underside of the shingle by pulling it down from the middle. Continue installing the eave shingles normally. After this, start installing Mansion shingles as shown in the second image. Nail all shingles at the nailing zone using four nails as shown in image 2.

ATTENTION! Do not nail to the upper part of the shingle. All nails must penetrate the substructure.

Cut the shingles at the verge and glue them to the verge with Sealing Compound K-36. Cut the shingles as shown in image 3. Shorten the first shingle in the second row by 150 mm and the first shingle in the third row by 270 mm.

Start the fourth row with the 270 mm cut piece and the fifth row with the 150 mm cut piece and continue installing the row with uncut shingles. Start the sixth row in the same way as the first row and repeat the same five-row pattern throughout the whole slope.

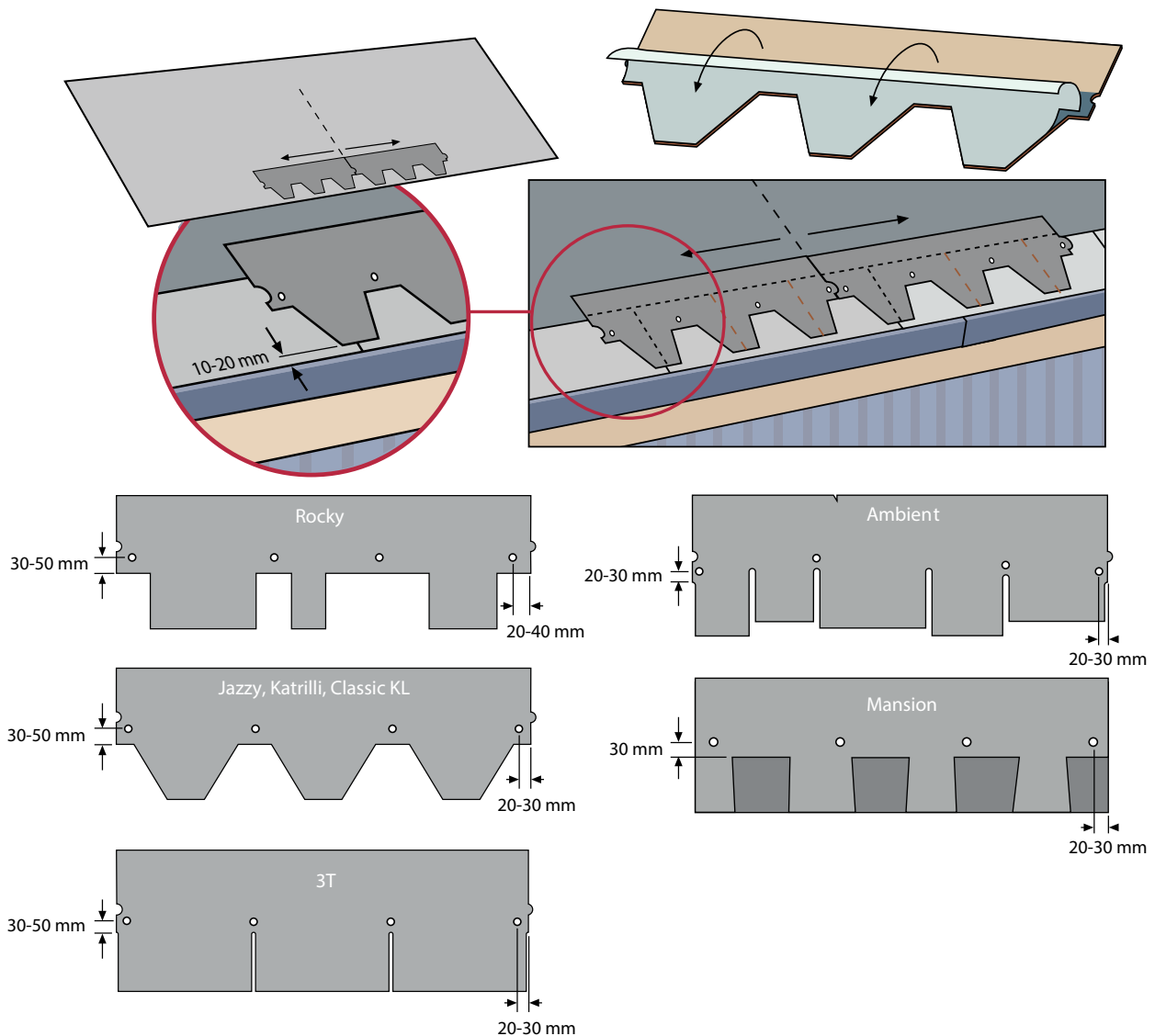
Continue installing the shingles one row after another and ensure that the rows are straight. Align the shingles using the lower edges. The height of the upper edge may vary a little.



Roofing shingles

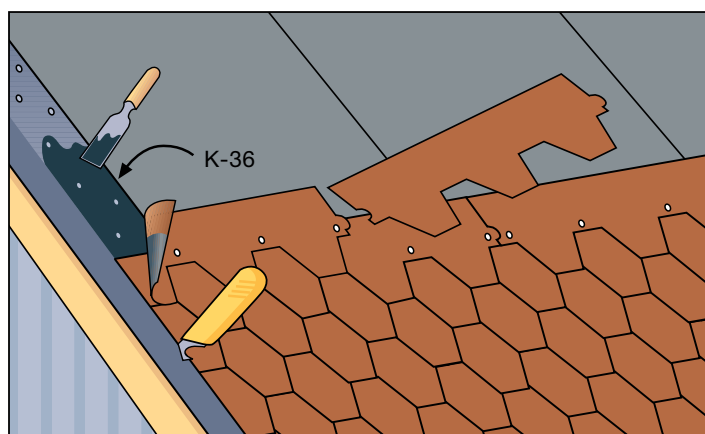
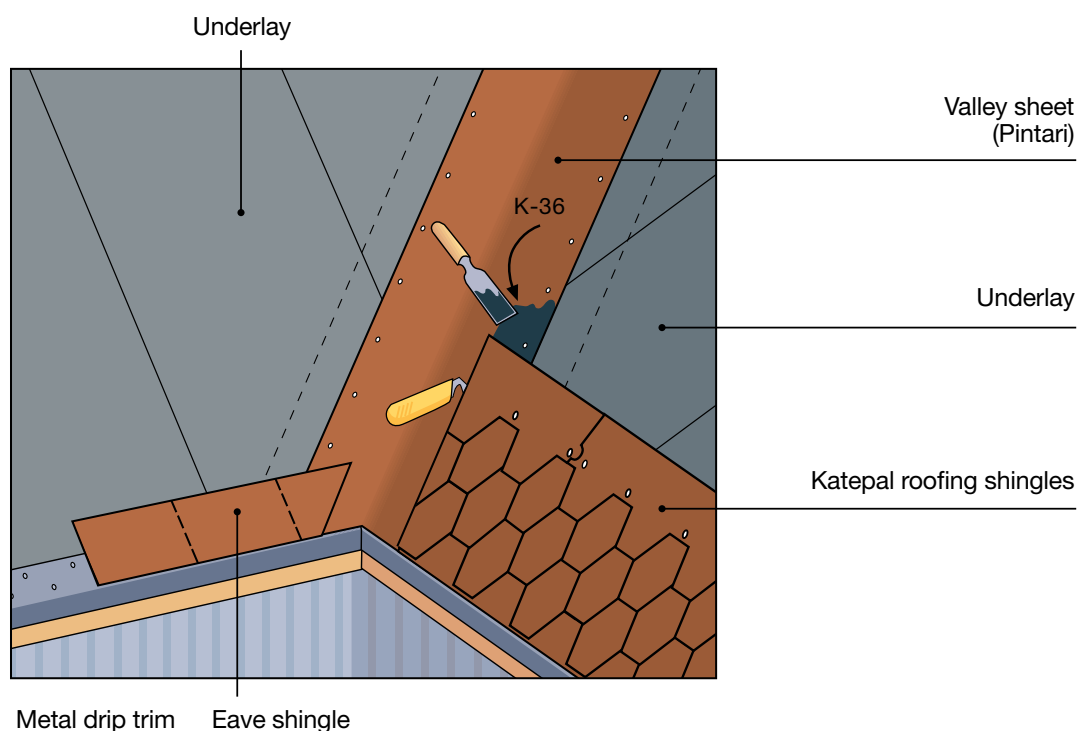
During installation, always mix shingles from at least four to five randomly selected packages to minimise noticeable colour differences. Do not install shingles from different production batches on the same slope. If this cannot be avoided, the shingles from different batches must be mixed and possible differences in colour must be observed at all times during installation.

- The installation of roofing shingles starts from the middle of the slope, so that the tabs of the shingles cover the end joints and perforations of the eave shingles. The lower edge of the first row of shingles is aligned 10–20 mm above the bottom edge of the eave shingles, so that the line of the eaves appears clean and straight when seen from an upward angle from the ground.
- The roofing shingles are fixed with sheet nails (4 per/shingle = 28 per/m²) and from the places shown in the figures below. The roofing nails can be nailed manually or with a pneumatic nail gun. The nails must penetrate the roof decking.
- If visible nail ends are not acceptable on the underside or they might be harmful (for example, in a child's playhouse or in an attic space that will be used by people), screws of a suitable length with wide, flat heads (KFR screws) may be used for fixing the roofing shingles.
- The shingles will bond to one another, but they are also nailed to the substructure. The shingles must be bonded carefully to the substructure at the roof valleys (to the valley sheet), at verges (to metal drip trims or to the underlay if, for example, a triangular batten is used to raise the edge) and at penetrations (to the sleeve flange), using Sealing Compound K-36.



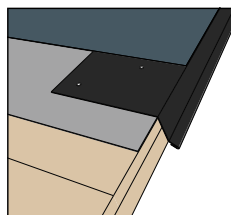
Valleys/verges

- At valleys, the ends of the shingles are cut parallel to the valley. Ensure that the shingles overlap the valley sheet by at least 150 mm.
- Usually there is an area 100–400 mm wide that is left exposed along the bottom of the valley sheet. The ends of the shingles are bonded to the valley sheet carefully, so that any water accumulating in the valley cannot seep under the shingles.
- Do not nail shingles to the decking on top of the valley sheet. The shingles should be glued to the valley sheet with Sealing Compound K-36, applied to a minimum width of 100 mm.
- At the verges, the shingles are cut along the verge line and the ends are bonded to the metal drip trim. When a raised structure is built at the verge, the ends of the shingles are bonded to the underlay, and a metal drip trim with Sealing Compound K-36 applied to a minimum width of 100 mm.

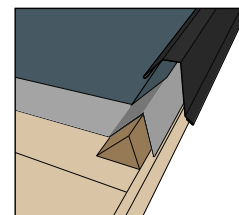


End flashing

Alternative means for creating an end eave and installing the end eave flashing.



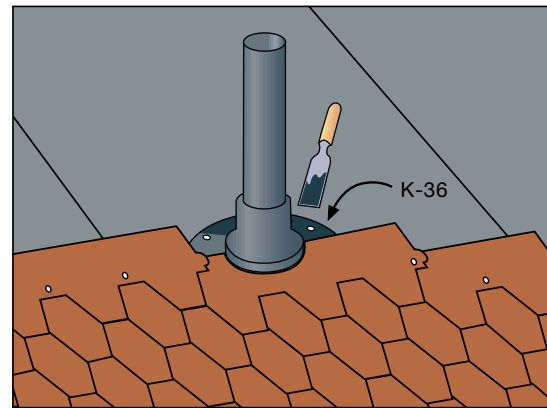
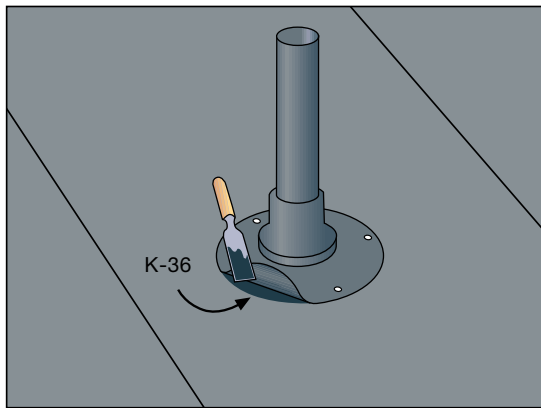
Using a Katepal metal drip trim.



Using a Katepal end eave flashing.

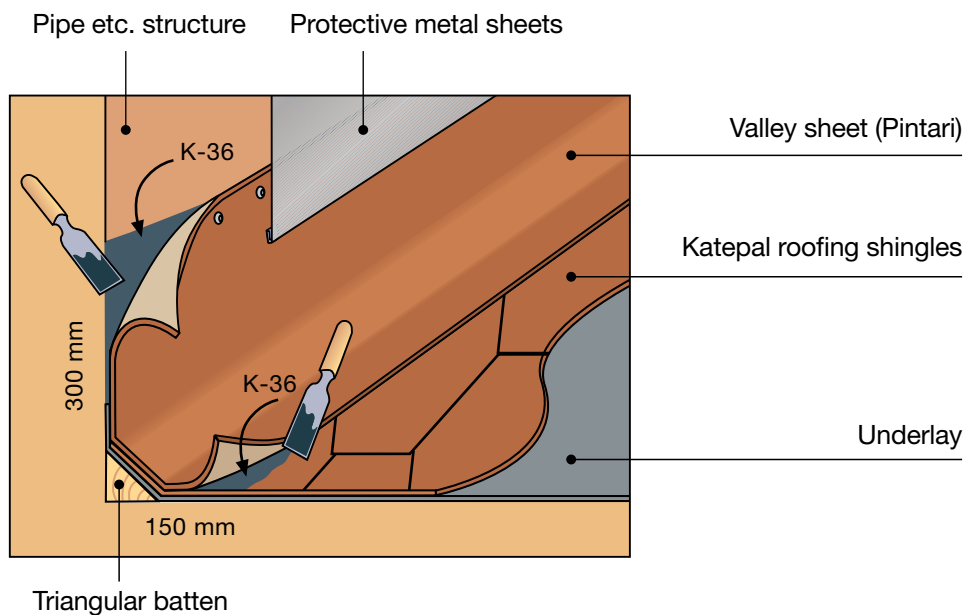
Sealing penetrations

- Round penetrations (such as drain ventilation pipes) use grommets made of EPDM rubber.
- The flange should be placed and fitted around the pipe, glued on top of the underlay and nailed or screwed to the underlay with four to five nails to prevent sliding.
- The roofing shingles should be cut to match the rubber sleeve rising from the roof surface and glued to the flange carefully.
- Any gaps between the shingles and the sealing should be filled with Sealing Compound K-36 or Seal Sealing Compound.
- When using other brands of sealing compound, follow the same principle and follow the sealing manufacturer's instructions.



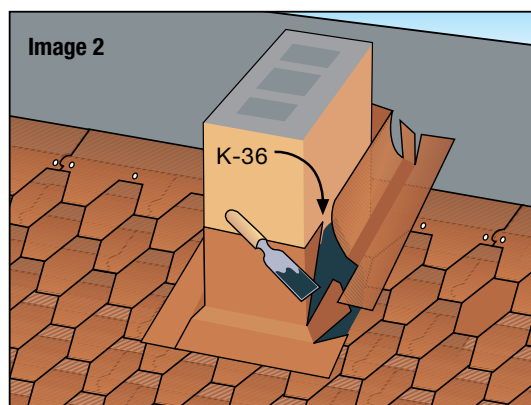
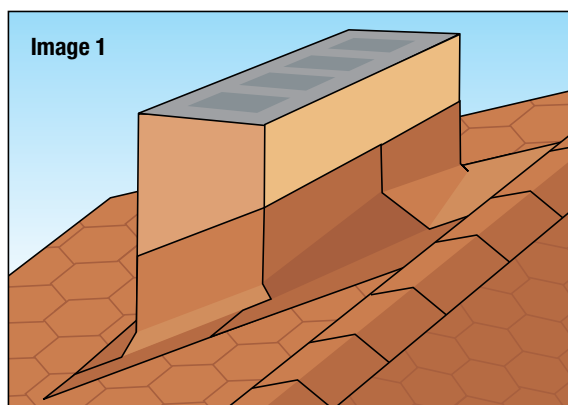
Upturns

- The height of the upturn above the roof surface should be at least 300 mm.
- Use a triangular batten at the part where the wall meets the roof on the side of the slope.
- The shingles and the underlay should be raised to the upper edge of the batten or approximately 5 cm up the wall surface.
- The upturn is made using Pintari, which is glued to the wall and the roof surface for its entire length with Sealing Compound K-36. The upper edge is then secured to the wall with nails.



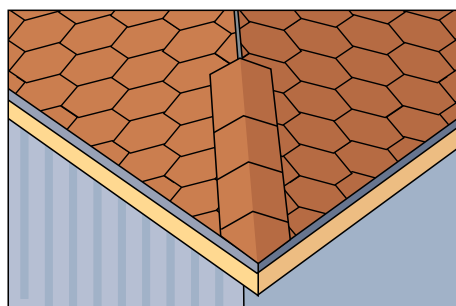
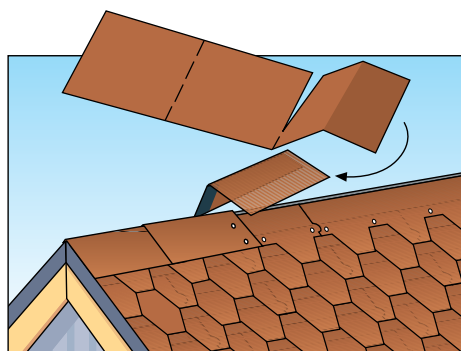
Chimney penetrations and conduits

- First, install the triangular batten (halved 2" x 2") at the part where the vertical surfaces meet the roof surface.
- When operating on a wide pipe or conduit group, we recommend building an elevating structure on the roof surface to ensure that water does not remain behind the pipes (image 1).
- Raise the underlay and the roofing shingles to the upper edge of the batten.
- Make the upturns from Pintari, as shown in image 2 below and in the image on page 18.
- Glue the upturn pieces to the pipe and to the top of the roofing shingles on the slope, then seal the corners carefully.
- The required amount of Pintari is equal to the circumference of the pipe (at roof level) + 1.6 m/pipe.
- See special instructions on page 25 for creating a chimney penetration for log houses.



Ridges/shingles

- At the ridge, cut the uppermost roofing shingles according to the direction of the ridge (do not bend them over the ridge!)
- The eave shingle can be divided into three ridge shingles by folding and tearing it.
- On a ridged roof, installation of the ridge shingles begins at one end, so that the adhesive side of the first shingle is placed on top of the outer edge of the verge, on top of the roofing shingles. Then the shingle is nailed to the roof decking from the non-adhesive end with four nails.
- The shingles are installed over and halfway across the ridge. The adhesive side of the lower surface of the shingle should overlap the previous shingle by approximately 50 mm, covering the nails. Continue in the same way across the entire length of the ridge.
- Place the final shingle at the opposite end of the ridge, but do not fix it in place by nailing; instead, use Sealing Compound K-36 on the non-adhesive part of the shingle.
- On hipped roofs, installation of the shingles begins from the hips at the eaves, with the ridge parts installed last. Where the hips meet, bend the final shingles so that rainwater cannot get under them, and then place the ridge shingles over them. Use Sealing Compound K-36 during installation.



Special parts of the roof

EPDM grommets

Install the factory-manufactured EPDM grommets on top of the underlay and glue the roofing shingles on top of the seam's flange carefully. The seams are attached to the penetration pipe by tightening the metal choker to a height where the sealing does not raise the roofing shingles if the pipe moves. (See page 25 for instructions regarding log structures). We always recommend using round grommets.



Underpressure vents and pass-throughs

Plastic underpressure vents are most commonly used for ventilation. The vent is usually installed at the ridge or very close to the ridge. Underpressure vents also come in models that are suitable for ridges and with both straight and slanted flanges for different slopes. The underpressure vents are installed on top of the underlay using Sealing Compound K-36 and nails. Cut the roofing shingles to a greater diameter than the diameters of the pass-through diameter and glue the shingles to the flange carefully. Select the underpressure vent's size (pipe diameter) according to the ventilation needs.

Roof ridge vent

If the roof ridge vents cannot be installed as indicated on page 10, factory-made roof vents can be used, generally for the whole length of the roof ridge. Typical applications include renovated wooden structures, where the ventilation under the roof has not been taken into account in the building phase. It is essential to ensure the removal of air for each roof truss gap for the entire height of the roof. The old bitumen roof and roof decking are removed from the ridge across a width of 100 mm, and roof vents attached according to the installation guide. The gap between the old roof and the vents should be sealed with Sealing Compound K-36. Finally, install roofing shingles or self-adhesive bitumen strips on the upper surface of the vents.



Gangways

Gangways should always be installed as high as possible on the slope. Use self-adhesive weatherstrip under the supporting feet of the gangway. Attach the supporting feet to the roofing shingles with adequate fasteners. Only use gangways manufactured and tested for this purpose.

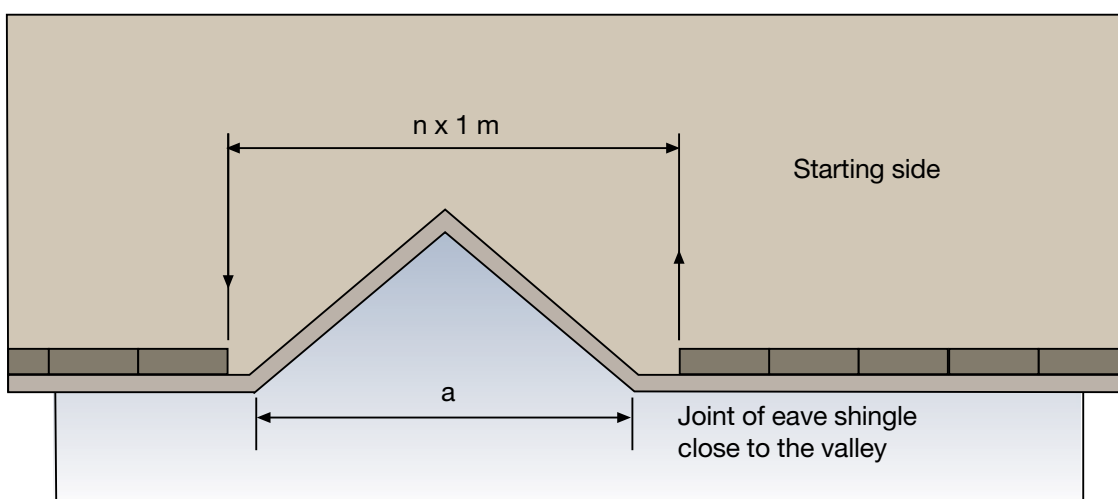
Snow barriers

Snow barriers are not usually needed for rubber bitumen membranes covered with mineral granules. The snow won't slide down the roof, even on steep roofs. If snow barriers are installed, ensure that the fixings are sealed so that they are watertight.

SPECIAL INSTRUCTIONS

Working around a veranda or a similar structure / aligning shingles over the structure

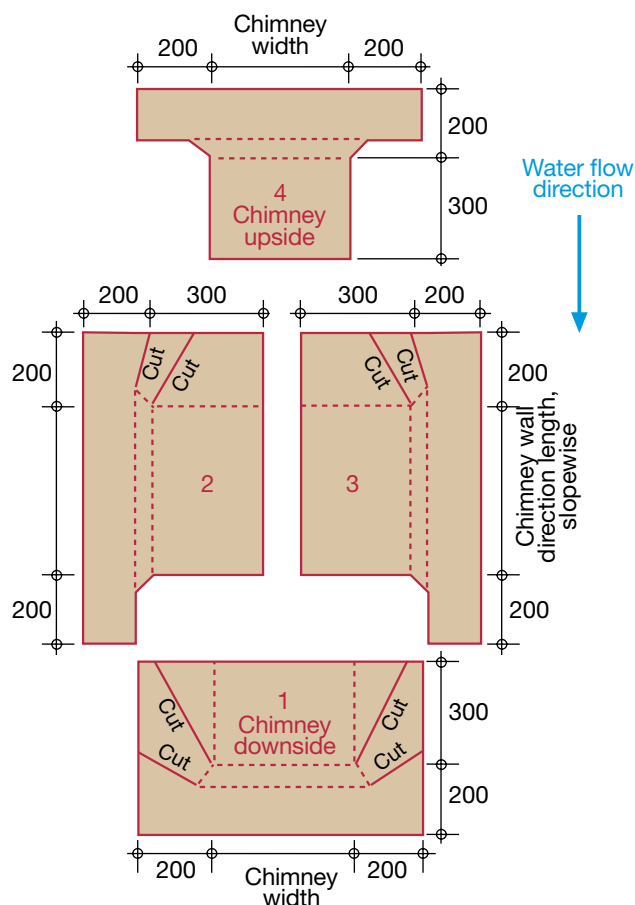
If a veranda, balcony or similar structure is placed on the slope so that the parts of the roofing that begin at the eaves are connected over the structure, you need to align the seams of the roofing shingles (and eaves) correctly. At both sides of the structure (measured “over” the structure), the gap between the seams must be divisible by 1/3 metres for Classic KL, Jazzy, Katrilli and 3T shingles, and by exactly one metre for Rocky and Ambient shingles, as shown in the image.



In the above image $n = (a+1)$, rounded up to the next integer in metres
E.g. if $a = 3.5$ m, $n = 5$

Creating chimney upturns

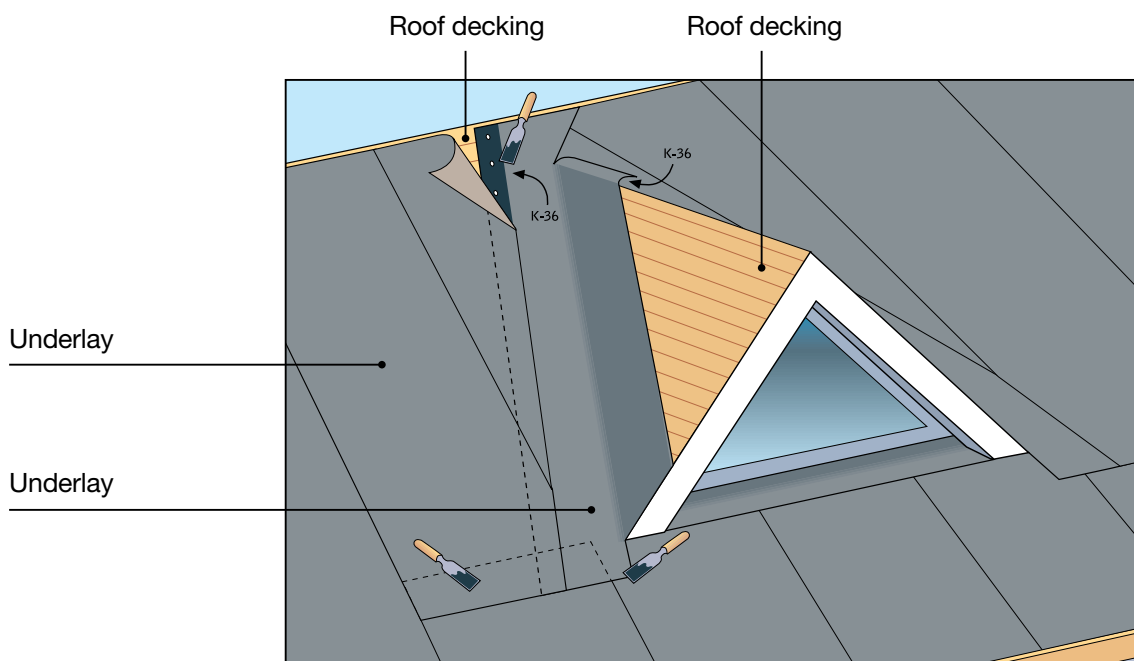
When the roofing installation has reached the top edge of the chimney or a similar larger pass-through, cut upturns from the Pintari sheet as shown in attached drawing and glue them across their full width to the chimney and to the roofing shingles on the slope in numerical order using Sealing Compound K-36 (overlap 15 cm). Above the chimney, the edge of the strip should be placed under the roofing shingles of the roof slope. Before the sheets for the upturns are installed, install triangular batten at the joint of chimney and roof decking. Always make the upturn out of a separate piece of Pintari that extends at least 30 cm above the roof surface and overlaps the roofing shingles on the roof slope by 15 cm. Attach the top edge of the upturn to the chimney by nailing it to the brickwork joints, for example. Make sure to seal the corners carefully with Sealing Compound K-36 and finally protect the upturn with sheet metal flashing.



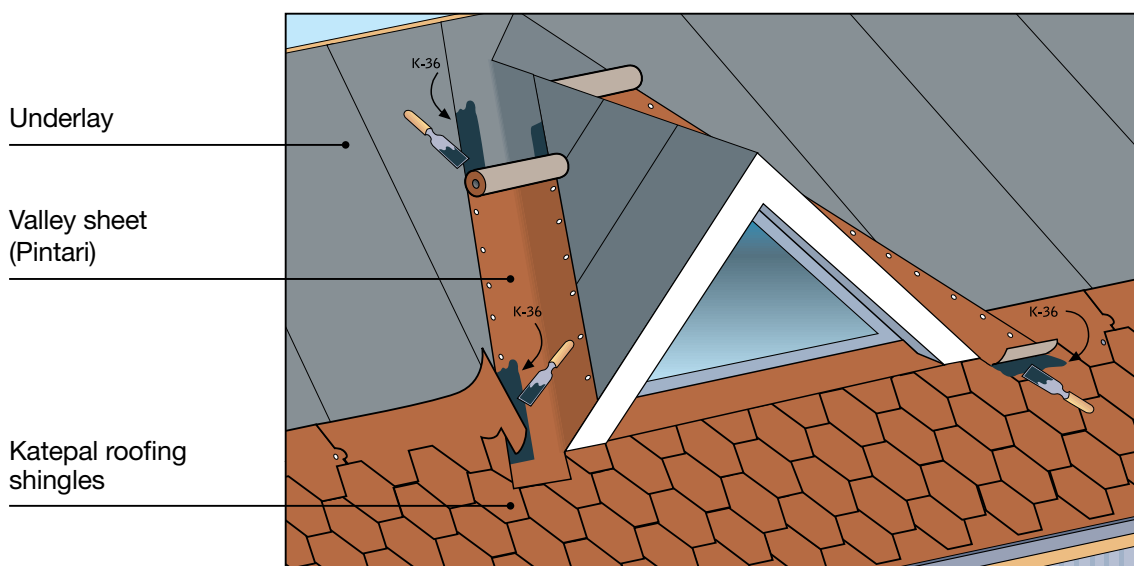
Valleys beginning in the middle of the slope (such as a dormer)

Vertical installation

The underlay is first installed on the both sides of the dormer and on the area below the dormer. After this, install an underlay parallel to the valley so that its lower edge overlaps the above-mentioned parts. The underlays of the dormer are placed on top of the underlay, in the valleys.

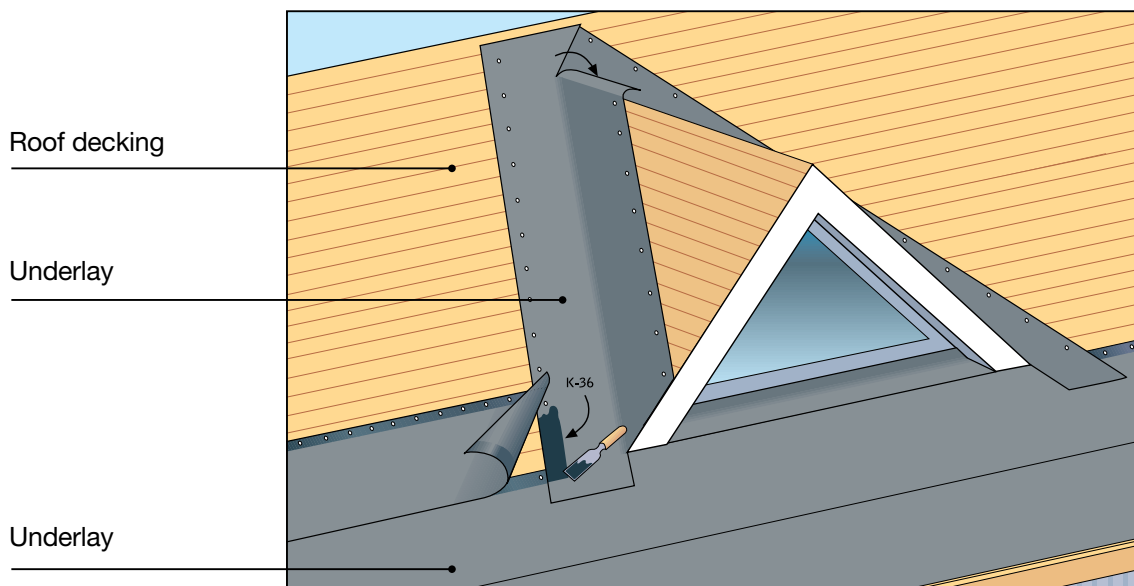


First place the roofing shingles at the level of the valley's lower edge, from the lower eave. After this, install a valley sheet (Pintari) to the valley so that its lower edge overlaps the top of the shingles by 150 mm. The lower end of the valley sheet should be glued carefully to the shingles using Sealing Compound K-36. Continue installing the roofing shingles by overlapping them on top of the valley sheet as normal, cutting them parallel to the valley sheet and gluing them to the sheet with Sealing Compound K-36.

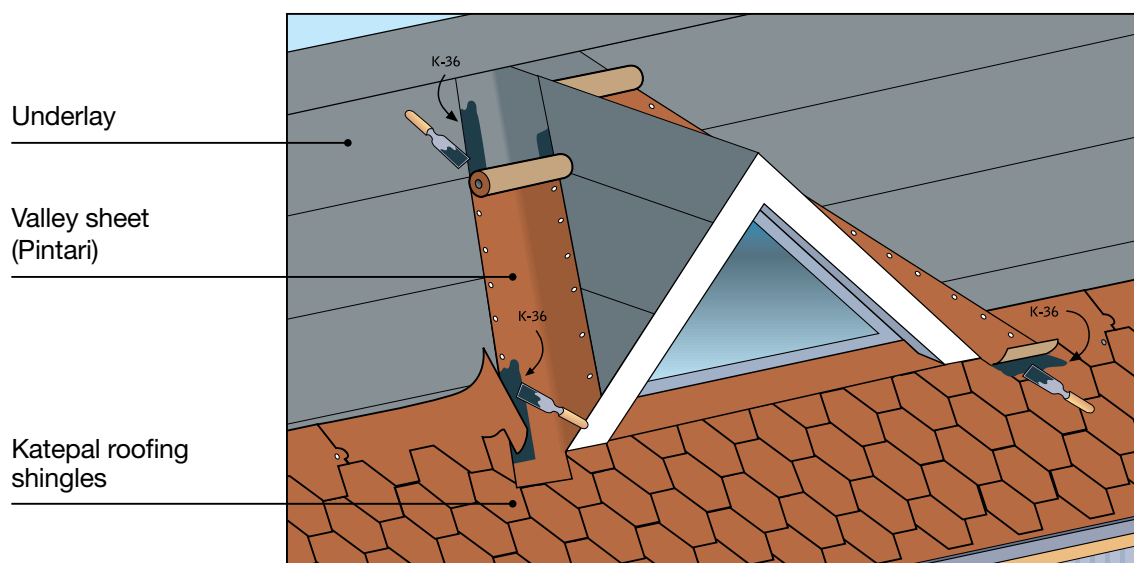


Horizontal installation

If the lower end of a valley is on the slope of the roof, install the underlay to the valley only after the installation of the underlay has reached the level of the lower end of the valley. The lower end of the underlay installed at the bottom of the valley goes over the underlay below the valley by at least 150 mm. After this, the installation of the underlay continues normally at the slope of the roof. The underlay from the slope should overlap the valley underlay by 150 mm. The overlaps of the underlay at the valleys are glued with Sealing Compound K-36.



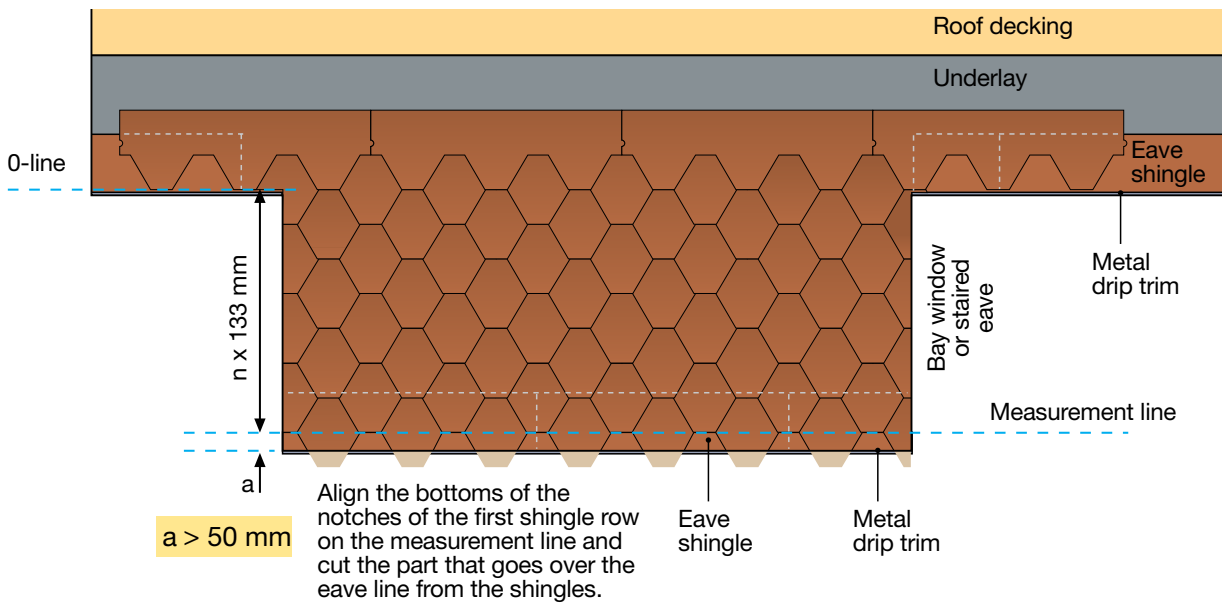
The roofing shingles are first installed to the level of the valley's lower edge. After this, a valley sheet (Pintari) is installed at the valley so that its lower end overlaps the shingles by 150 mm. The lower end of the valley sheet is glued carefully to the roofing shingles using Sealing Compound K-36. The installation of the roofing shingles continues by overlapping them on top of the valley sheet as normal, cutting them parallel to the valley sheet and gluing them to the valley sheet with Sealing Compound K-36.



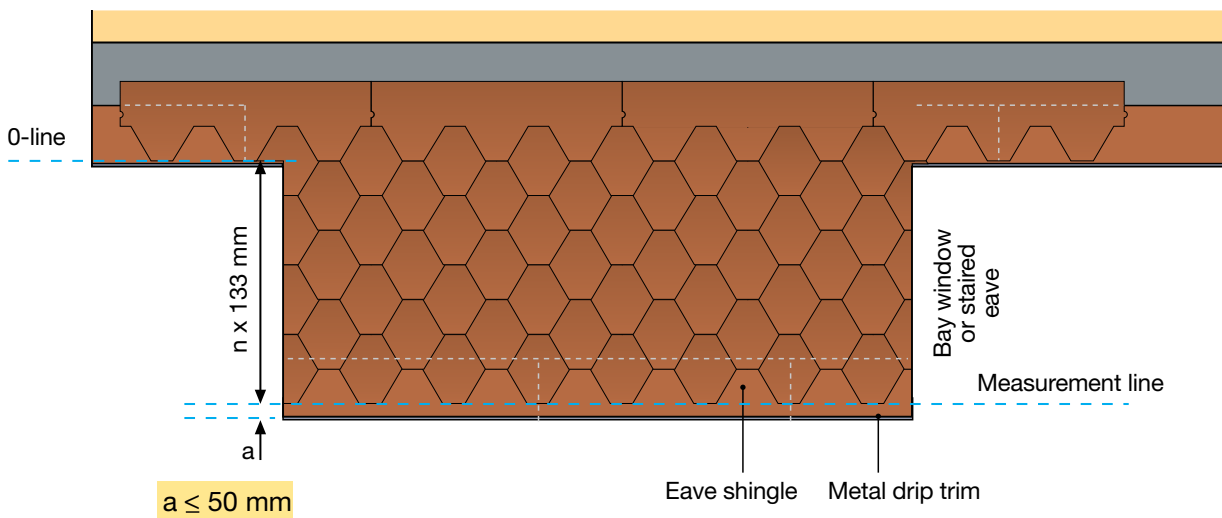
Beginning construction above bay windows or staired eaves

When a bay window is located in the middle of the slope or at one end of it, the measurement for installing shingles along the lower edge of the bay window is calculated in the following way. The eave line of the slope itself is considered to be the zero line. The length between the zero line and the lower edge is divided by the shingle's effective exposure (133 mm/row). The result is the number of rows of shingles that must be installed. The tips may be cut off from the lowest row of shingles. The effective length for other shingles is 128 mm/row for Ambient, 141 mm/row for 3T and 162 mm/row for Mansion shingles.

If the measurement above the bay window or an extension from the zero line is divisible by 133 mm, you can start installing the roofing shingles from the lower edge of the extension. When the work reaches the zero line, install the eave shingles according to the roofing shingle division.



If the measured distance is < 50 mm, the first row of shingles can begin from the measurement line and go upwards (image below).

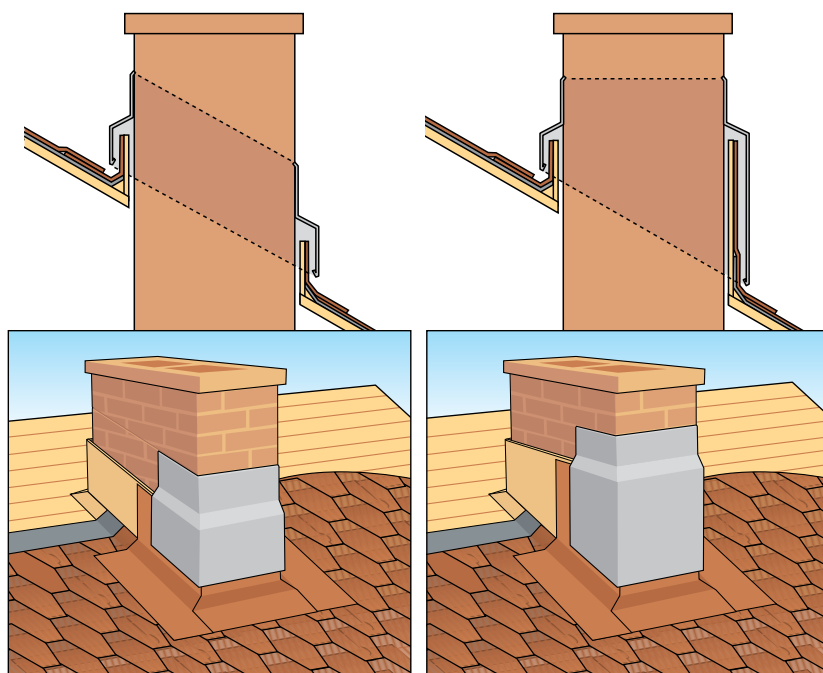


When working in a sideways direction, ensure that the eave shingles are not aligned with the tips above the bay window or the lower eave of the slope. This will ensure that the perforated parts remain under the roofing shingles. When using Classic KL, Jazzy, Katrilli and 3T shingles, the sideways adjustment is 166 mm/row, with Rocky shingles it is 83 mm/row, with Ambient shingles 345 mm/row and with Mansion shingles 150 mm/row.

Chimney penetrations for log houses

When building a log house, it is important to remember that as a building's structure compresses, the roof also moves downwards in relation to the chimney. The upturns should not be attached to the chimney; instead a structure should be created around the chimney and the upturns raised against it. Metal flashings are then attached to the chimney and overlaid vertically by at least 200 mm with the upturn, but should not be attached to the roof surface or the upturn. This allows the frame and upturns to move down with the roof without causing damage. The flashings of the chimney cover the upper edge of the upturns and the gap around the chimney, despite the structure compressing.

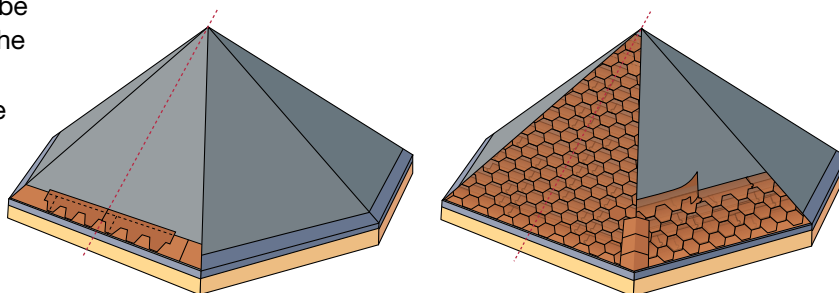
Ensure that chimney pass-through installation is done in accordance with fire safety regulations and in compliance with the current regulations from your local authority or building designer.



Creating a multi-cornered canopy (barbeque covers, huts etc.)

With Classic KL, Jazzy, Katrilli and 3T shingles, installation should be performed by first drawing a targeting line from the centre of the eaves directly to the ridge point. Align the shingle seams horizontally with the targeting line. Working upwards, the seam of every second shingle row should be placed on the same line to create a symmetrical pattern for all slopes. With Ambient, Mansion and Rocky shingles, the shingle pattern will not be symmetrical so no alignment is needed.

Each triangular slope should be covered separately, just like the end slope of a hipped roof. The external bends should be covered with ridge shingles. In small buildings, the ridge plate can be split.



Renovating a shingle roof

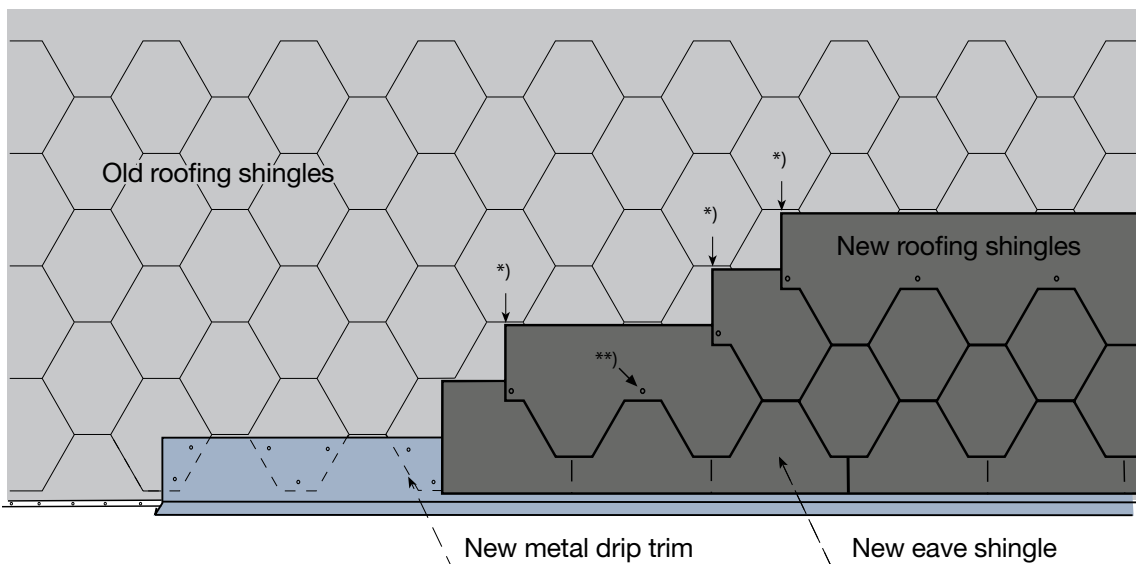
A roof made of old bitumen roofing shingles can be renovated in two ways:

1. Install the new roofing shingles directly on top of the old ones. This is the faster and less expensive alternative.
2. Remove the old shingles and underlay and install new underlay and shingles on top of the existing roof decking. This more thorough method will allow repair or complete replacement of the roof decking where necessary.

Installation of new roofing shingles on top of old roofing shingles, overlapping

With Jazzy, Katrilli and Classic KL bitumen roofing shingles, you can install new shingles of the same type on top of old shingles providing the following conditions are met:

- The roof decking under the existing membrane is in good condition and the ventilation under the substructure is functioning correctly.
- The exposure/shingle layer of the old and new roofing shingles is approximately the same (the maximum difference is 10 mm).
- Roofs with a pitch of less than 1:3 must have underlay beneath the old roof. Roofs with a pitch steeper than 1:3 do not require underlay.
- When attaching the new roofing shingles, use roofing nails that are long enough to penetrate the roof decking. (The length of the nail should be at least 35 mm.)
- Follow the overlapping instructions in the picture below to ensure the “stairing” of the shingles overlap correctly. The new shingles should not be nailed into the holes of the old shingle pattern.
- For hipped roofs, remove the old shingles from the ridge and the hips of the roof before installing new shingles.



*) Leave a gap of 5-10 mm between the tips of the old roofing shingles and the back edge of the new roofing shingles. The horizontal end seam of the new roofing shingles should be installed at the middle of the tip of the old roofing shingles.

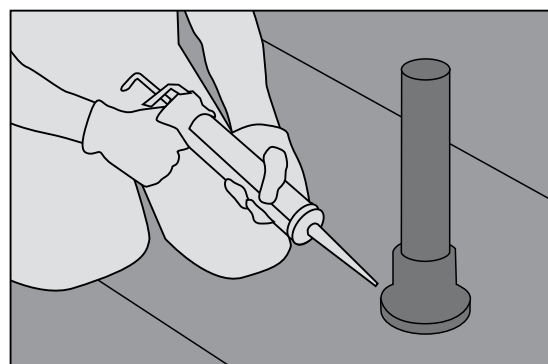
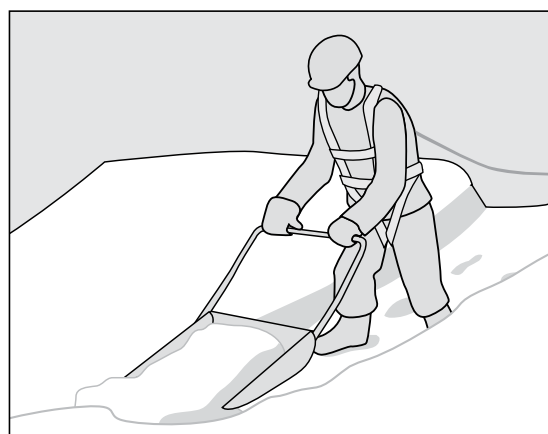
**) The nail tips must penetrate the roof decking (35 mm sheet nails).

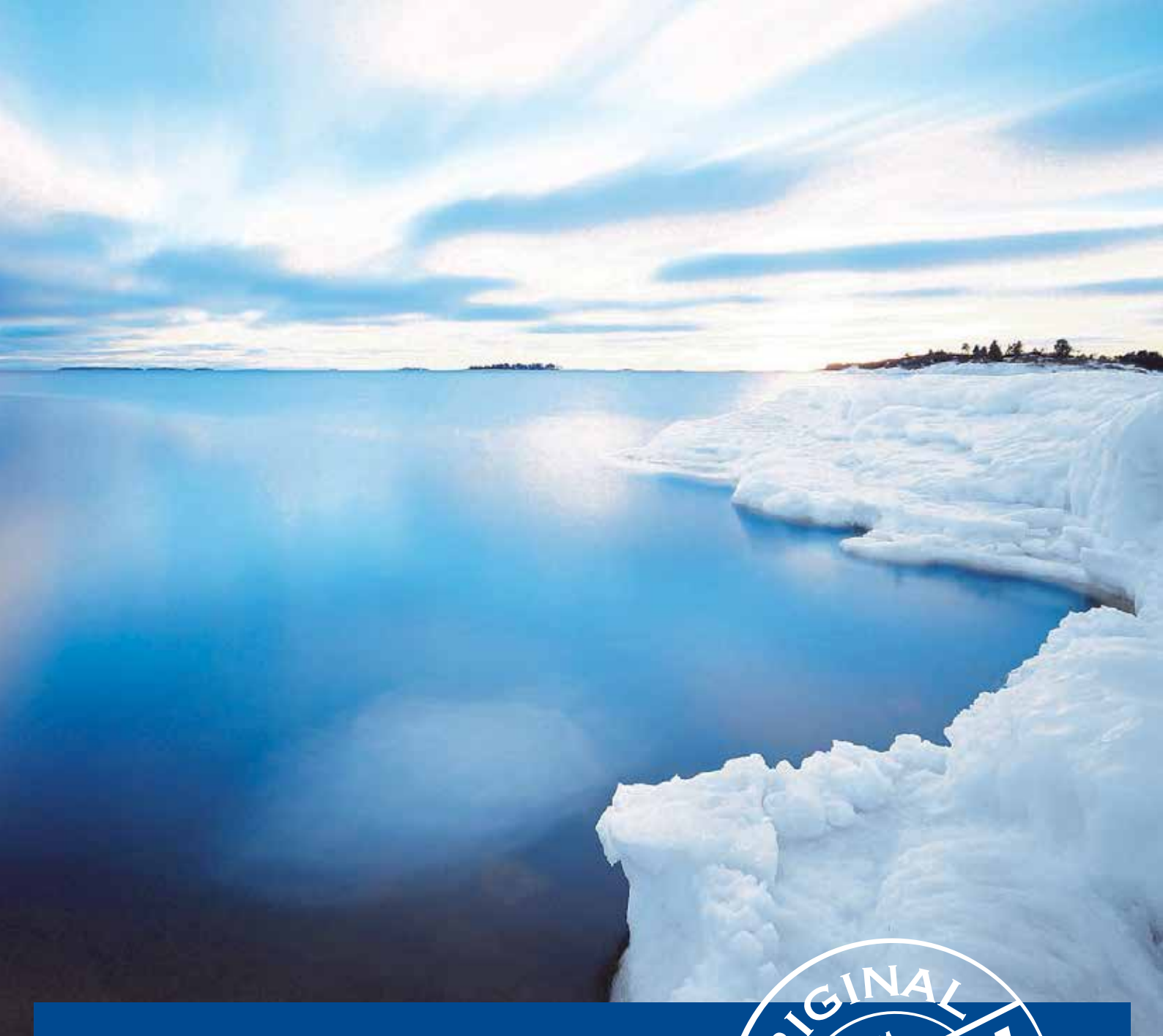
Roof maintenance

A roof covered by bitumen roofing shingles is durable and easy to maintain. No painting or additional covering is needed. Regular inspection and cleaning are sufficient.

Do the following:

- Inspect the roof regularly, at least twice a year (spring and autumn).
- Remove all litter from the roof (leaves and moss etc.) by brushing it lightly without damaging the roof surface. Manually remove any branches or other items that may have fallen onto the roof.
- If necessary, use Katepal K-10 Roof Wash to remove any moss. Do not use a pressure washer when washing the roof.
- Ensure that water can drain freely from the roof. Clean the rainwater drains when needed.
- Only remove snow from the roof when absolutely necessary. Leave a 10-20 cm layer of snow. Do not damage the roof surface with shovels or other tools. Do not remove ice manually, such as by hacking at it.
- When working on the roof, cover the surface.
- If repairs are needed, perform them as soon as possible to avoid further damage.
- When necessary, seal the seams and penetrations with Sealing Compound K-36 or with Seal Sealing Compound.
- Avoid walking on the roof unnecessarily.
- If you are unsure about any aspect of roof maintenance, contact Katepal's technical support team.





Katepal Oy is a leading manufacturer of bitumen roofing materials and other bitumen products. Katepal is a family-owned company established in 1949. The Katepal manufacturing plant is located in Lempäälä, southern Finland.

Our products are CE marked, meaning that they have been assessed to meet high safety, health and environmental protection requirements. We follow the ISO 9001 quality system. We take the environment into account in all of our operations.



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