

**KATEPAL**

# INSTALLATION GUIDE

Katepal bitumen roofing shingles

## PRODUCT INFORMATION & INSTALLATION GUIDE

ROCKY

KATRILLI

CLASSIC KL

JAZZY

AMBIENT

MANSION

FORTE

3T



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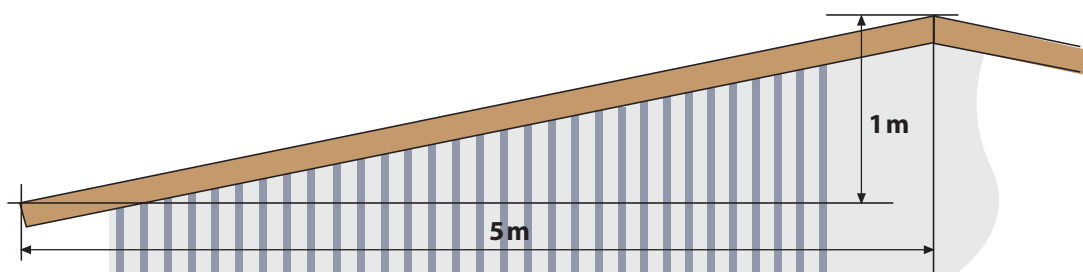
**Note! You can always find the newest version of the installation guide at [www.katepal.fi](http://www.katepal.fi)**



## PRODUCT INFORMATION

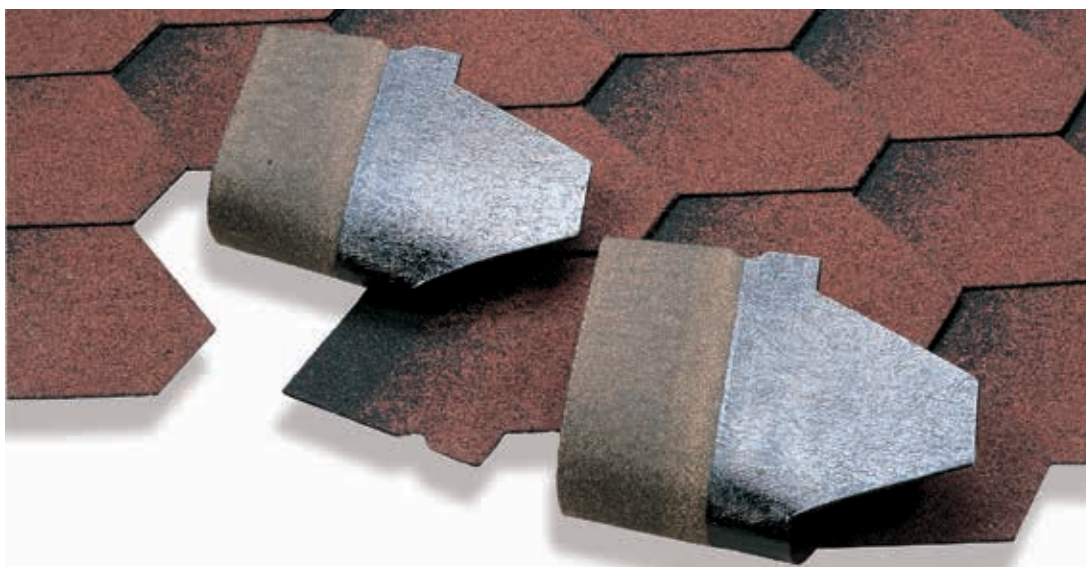
### Area of use

Katepal SBS rubber bitumen roofing shingles are suitable for both new construction and renovation of old roofs with a tilt of at least 1:5 (approx. 12°), ie. the roof's slope descends down one meter vertically for each five meters horizontally. The steeper a roof, the better the appearance of the shingles. Roofs with variable forms are particularly suitable for bitumen roofing shingles, as working with them is easy - the material is flexible and easy to install to every detail, such as valleys, penetrations, joints, seams etc. The sealing of the details can be performed reliably with the K-36 Sealing Compound. The installation of the roofing shingles is suitable for do-it-yourself builders.



### The principle of use

The roofing shingles are fastened to the roof with sufficiently long substructure-penetrating roofing nails. The shingles are overlapped so that the nails are covered by the shingles laid on top of them. The self-adhesive lower surface of the shingles fixes the shingles to one another, creating a watertight roofing. Each roofing shingle package contains installation instructions.

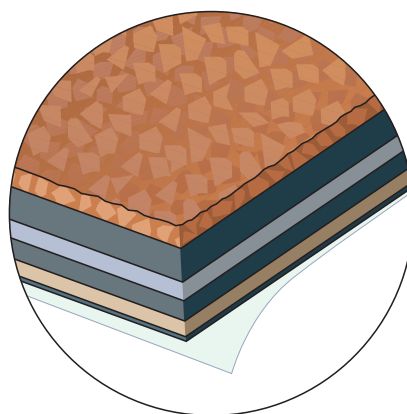






### Katepal roofing shingles

The Katepal roofing shingles are manufactured from SBS rubber bitumen. Their supporting layer is a glass sheet, which guarantees a good dimensional stability. SBS rubber bitumen ensures that the shingles are waterproof and bend well. The upper surface of the shingles contains slate and/or mineral granules. The lower surface is partially covered by a self-adhesive rubber bitumen under a protective membrane. The rest is covered by a sand surface. The surface granules give the product its color, as well as a matte surface that blends in well with nature and the environment, a rough friction surface, increased UV radiation protection, and the necessary fire protection features (fire class BROOF (t1), BROOF (t2) or BROOF (t4)).



### Eave-ridge shingles

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

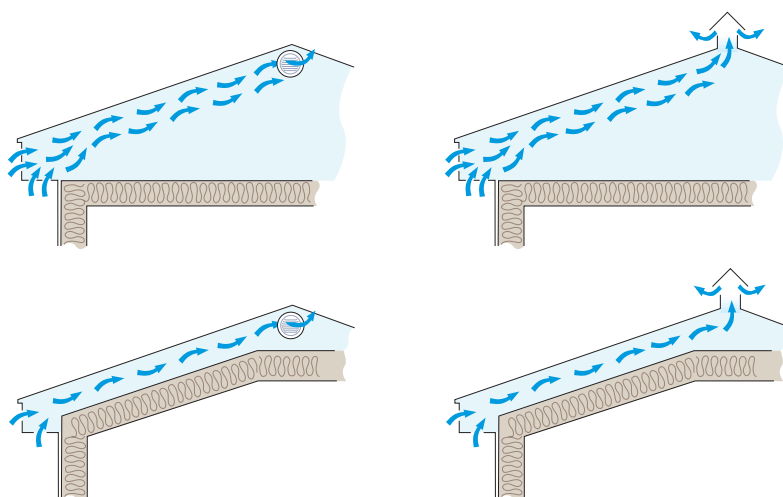
At the ridge, the eaves shingles are bent and torn to three parts at the perforation, and the ridge shingles are then overlapped at the ridge as instructed.

### Packaging

One roofing shingle package containing Classic KL, Jazzy, Katrilli or Rocky shingles has 22 roofing shingles, ie. 3 m<sup>2</sup> of finished roof. The Ambient package contains 17 shingles (2,18 m<sup>2</sup> of finished roof), the 3T package contains 17 shingles (2,4 m<sup>2</sup> of finished roof), the Mansion package contains 10 shingles (1,6 m<sup>2</sup> of finished roof) and the Forte package contains 17 shingles (2,5 m<sup>2</sup> of finished roof). Each roofing shingle package contains the installation instructions. The eave/ridge shingle package contains 20 shingles. One package has enough material for 20 m of lower eaves shingles or 12 m of ridge/hip shingles. The installation instructions of the eave/ridge shingles are **on the package**.

## Ventilation

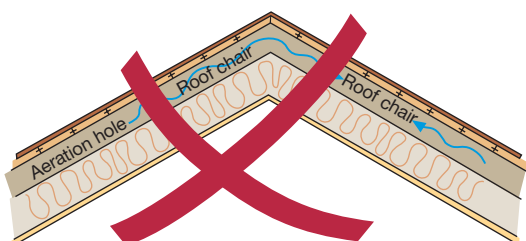
The ventilation of a wooden roof is necessary to ensure the roof's functionality and durability. The structure must have a ventilation gap of at least 100 mm, under the roof decking. The ventilation air outlets must be as high as possible (at the ridge or in the end triangles), using underpressure vents 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.



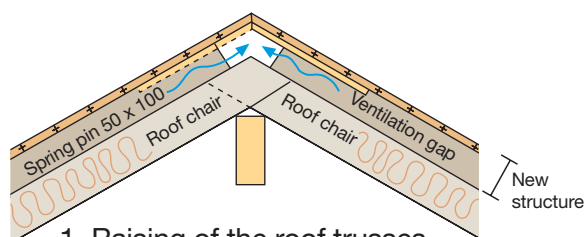
## Fixing ventilation issues

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 the air to ventilate through all roof truss gaps. If necessary, raise the ridge if this is the only way to ensure that the ventilation functions parallel to the ridge.

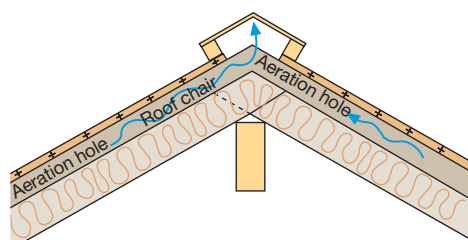
**Old non-ventilated structure**



**Functional ventilation**



1. Raising of the roof trusses

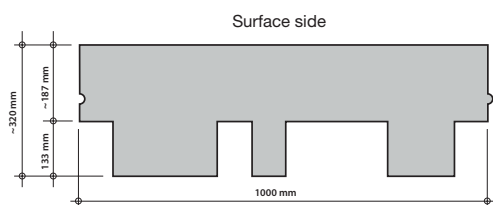


2. Only the raising of the ridge



## MEASUREMENT AND MODELS

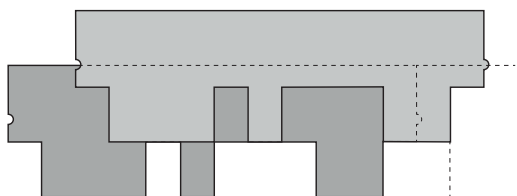
### Measurement, Rocky



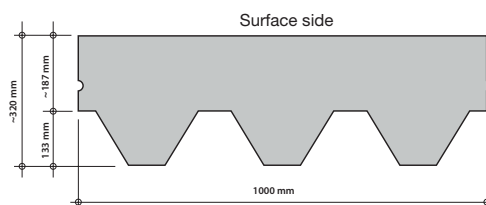
Flip side



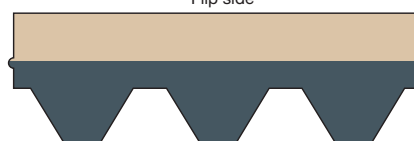
### Installation, Rocky



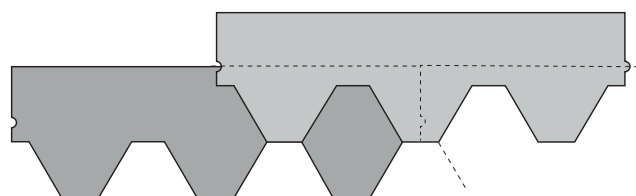
### Measurement, Jazzy, Katrilli, Classic KL



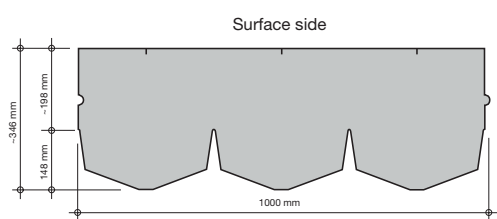
Flip side



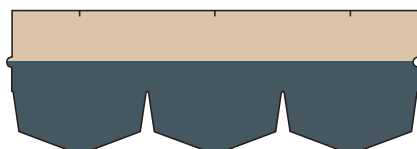
### Installation, Jazzy, Katrilli, Classic KL



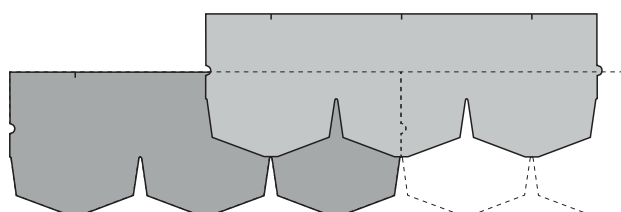
### Measurement, Forte



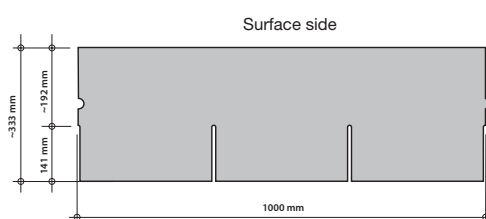
Flip side



### Installation, Forte



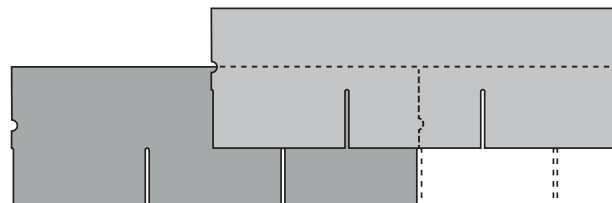
### Measurement, 3T



Flip side



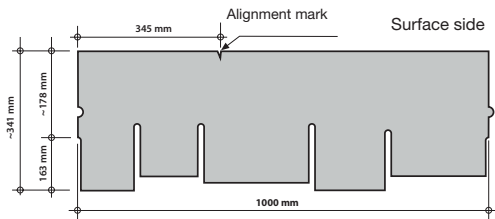
### Installation, 3T





## MEASUREMENT AND MODELS

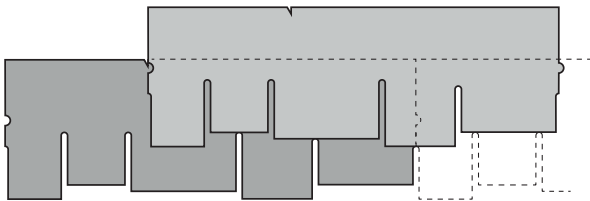
### Measurement, Ambient



Flip side

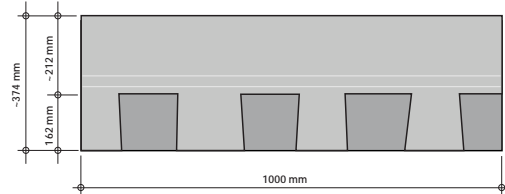


### Installation, Ambient



### Measurement, Mansion

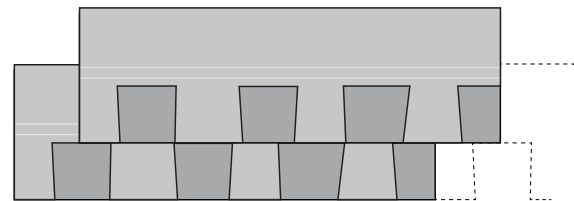
Surface side



Flip side



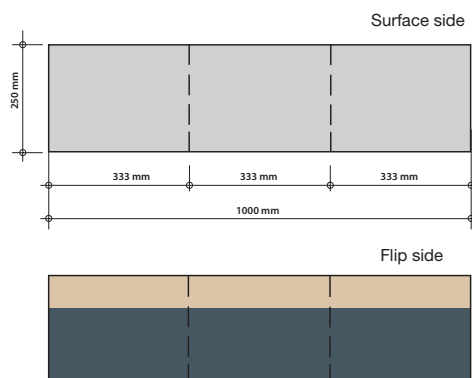
### Installation example, Mansion



## Eaves/ridge shingle

1 eaves shingle => 3 ridge shingles

### Measurement, eaves/ridge shingle





## OTHER MATERIALS AND SUPPLIES REQUIRED FOR INSTALLING THE ROOFING SHINGLES

### Underlays

- SuperBase Grip Green, XtraBase or other underlay manufactured by Katepal for roofing shingles under-layment.
- 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 are not installed immediately after installation of the underlay (for instance, if this is delayed by the construction of pipes, conduits and other penetrations), we absolutely recommend using SuperBase Grip Green. We also recommend using SuperBase Grip Green when the roof must spend a winter supported only by an underlay.
- Both 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 pistol, especially when constructing roofs in the autumn. Attach the underlay to the roof decking with roofing nails. The nails must penetrate the roof decking.
- Roll size 15 m x 1 m.
- Material requirement 1,15 x the roof size.

#### Selecting underlay for bitumen shingle roof

Roof structure	SuperBase Grip	XtraBase
Steep roofs, tilt > 1:3	X	X
Gently sloping roofs, tilt 1:3 - 1:5	X	X
Demanding roofs or roofs with variable forms	X	
Suitable for spending a winter unworked during construction	X	

### Extraordinary Katepal SuperBase Grip Green

The supporting layer of the Katepal SuperBase Grip Green is made of durable, hard polyester fiber, which increases its resistance to tearing. SuperBase's extensive tearing resistance is particularly important in sections where parts are nailed down and in the valleys of the roof structure, as SuperBase can handle these sections without breaking. Despite its durability, SuperBase Grip Green can also be processed easily during the different stages of installation, including in cold conditions. Adhesive tracks 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 enables covering over winter with only an underlay. Work safety is increased by the SuperBase Grip Green's friction surface that prevents slipping under shoes.

### Pintari valley sheet

- Valley sheets are used to create valleys, upturns for the walls and upturns for the pipes and conduit groups. These details can also be done with other bitumen top felts, such as torch-on or glued (K-36 or hot bitumen) top felts.
- Pintari is made of SBS rubber bitumen and extra-tough polyester sheet, and its upper surface contains colored granules. The lower surface is made of sand.
- Pintari is glued and sealed with K-36 Sealing Compound. Roll size is 10 m x 0.7 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.
- There are 10 metal drip trims in the a package (20 m, usable length 19.50 m).



### K-36 Sealing Compound

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

- the end joints of the underlay, valleys, penetrations and upturns
- the end eaves, valleys and 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 or apply it directly from a 0.3 liter tube using a caulking gun. The sealing compound thickens in cold conditions, so we recommend using it only in temperatures higher than +10 °C. The product can also be used in colder weather, as long as the Sealing Compound is kept warm. The package sizes are 10, 3, 1 and 0.3 liters.

### Katepal Seal 7 Sealing Compound

A solvent-free MS-Polymer-based sealant and adhesive. This product is designed especially for bitumen roofing but 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 the sewer ventilation pipe) use grommets made of EPDM rubber and equipped with a tightening ring. These are available for pipes with a diameter of 10 - 830 mm. Passthroughs made of PP-plastic are also available on the market.

### Underpressure vents

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

### Understructure

- The roof decking for the bitumen roofing shingles is usually constructed from closely-installed-boarding, or alternatively from building board. It needs to be sufficiently sturdy, rigid, smooth and dry. (Table 1)
- We recommend constructing the boarding 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 equal in 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 3 unbroken boards in one gap between the lengthening pieces.
- You can take expansion of the boards caused by changes in moisture levels and temperatures into account by leaving a sufficient gap between them. When using T&G spruce plywood or OSB-boards, follow the board manufacturer's instructions regarding thickness and attachment of the boarding.

**Table 1 The Minimum thickness of an understructure**

Support gap mm	Rough T&G boarding mm	Rough boarding mm	OSB boards mm	Veneer boarding mm *)
600	20	22	15	15
900	23	25	18	15-19
1200	30	32		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, and a steel spatula and caulking gun are sufficient. A pressure nail gun can also be used. A colorful line wire can be useful for marking straight lines. Sheet cutters are also needed for installing the drip trims and other metal flashings.



### Underlays and their installation

- Always use an underlay with bitumen roofing shingles.
- Underlays: SuperBase Grip Green, XtraBase or other underlay manufactured by Katepal for roofing shingles underlayment.
- If the installation of the roofing shingles is not performed immediately after the underlay is installed (such as when the creation of pipes, conduits and other penetrations is delayed, the roof includes many variable forms or the roof spends a winter with only an underlay installed), we absolutely recommend using SuperBase Grip Green (see the selection table at page 8).
- In cold conditions (below +10°C), the membrane adhesion should be ensured by heating the adhesive surfaces with a hot air pistol and the rolls should be stored in warm conditions prior to installation.
- The underlays can be installed horizontally or vertically on top of the roof decking (images 1 a and 1 b). The underlay is rolled open, aligned on its place to the roof to form a straight line, tightened and nailed from the adhesive edge (including the hidden ends).
- On steep roofs, the vertical installation is easier. To avoid folds, ensure that the underlay is straight and sufficiently tight. When installing an underlay during cold weather, pay particular attention to the tightness.

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

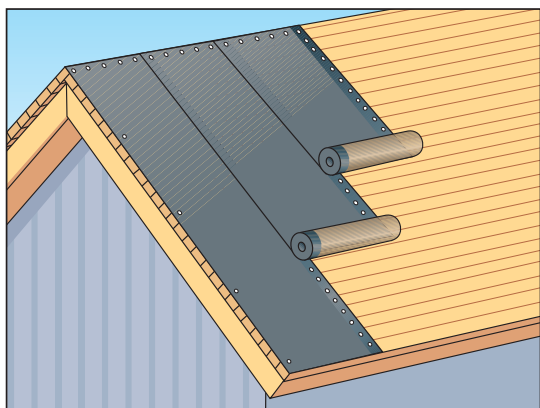


Image 1 a

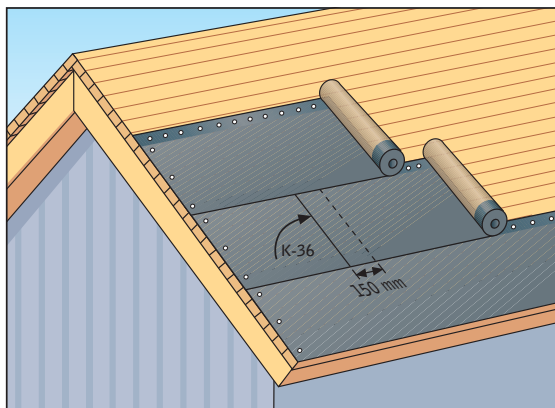


Image 1 b

- 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. At the valleys underlay sheets overlap the valley underlay by 150 mm and are glued to it with K-36 Sealing Compound. Install the 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 mold (images 4 a and 4 b).
- On the ridge, cut the underlays 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 K-36 (image 5).
- In the upturns, raise the underlay at least 50 mm from the roof surface and, if necessary, nail and/ or glue it for the upturn (image 6).

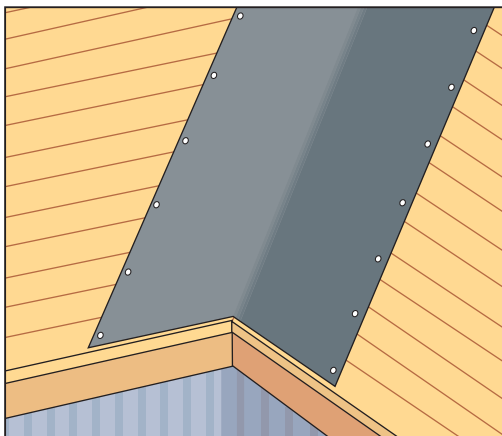


Image 2

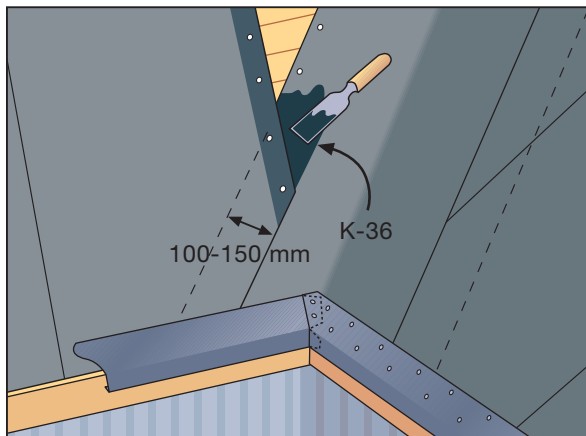


Image 3

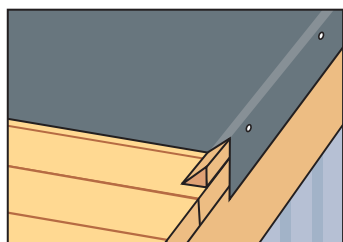


Image 4 a

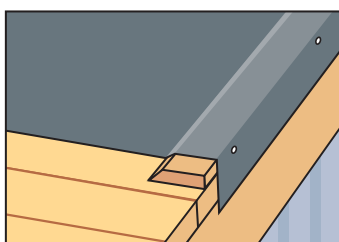


Image 4 b

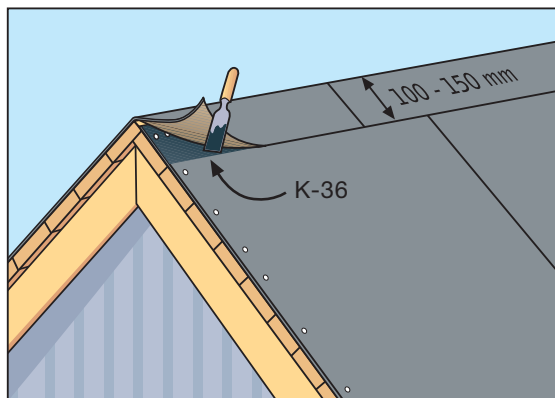


Image 5

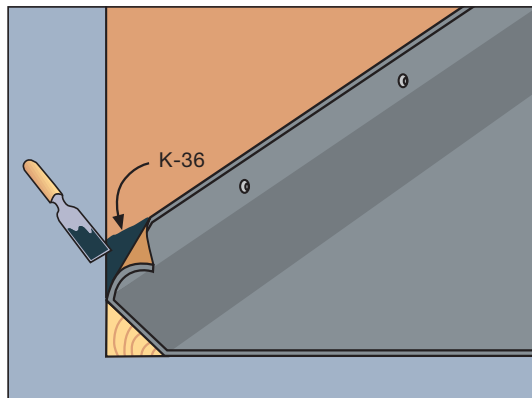
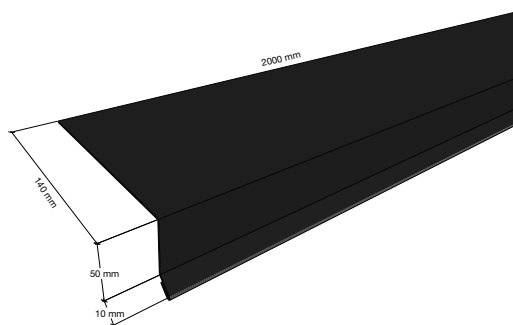


Image 6

## Metal drip trims

- The 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 at approximately 10 cm intervals in a zigzag pattern.



- In order to avoid visible nail ends on the lower surface of the eave, use sufficiently short 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 overlapping of the metal drip trims is 50 mm, and a small piece of the double folded edge is 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 meters of flashing). The lengthening pieces should overlap by 50 mm. Cut off the corners from the folded edges of the lower flashing to ensure flat and aesthetic 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. Also see page 17.

## Pintari valley sheet

- After installing the underlay and the metal drip trims, install a Pintari top sheet to 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 in the valley, so that the valley sheet does not damage under loads e.g. snow, ice or when people move around the roof. Glue the edges of the valley sheet to the underlay using K-36 Sealing Compound, and use nails to prevent sliding during work (image 1).
- At the eaves glue the valley sheet to the metal drip trims with K-36 Sealing Compound. Also glue the possible lengthening pieces using same K-36 Sealing Compound. If the valleys end on the slope and join together the valley sheets have to 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 installation of the roofing shingles has reached the level of the lower edge of the valley sheet. For more specific installation instructions see the Special Instructions section on page 22.

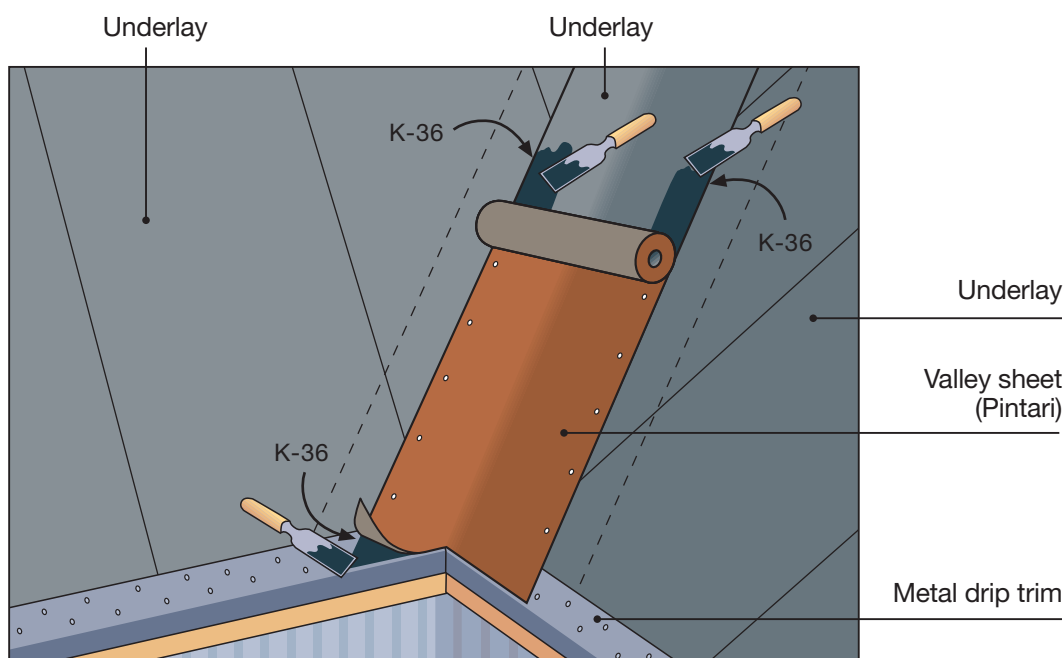


Image 1

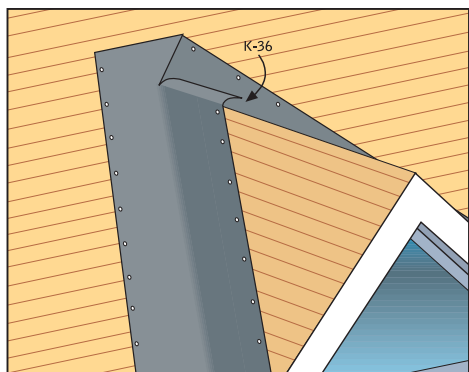


Image 2

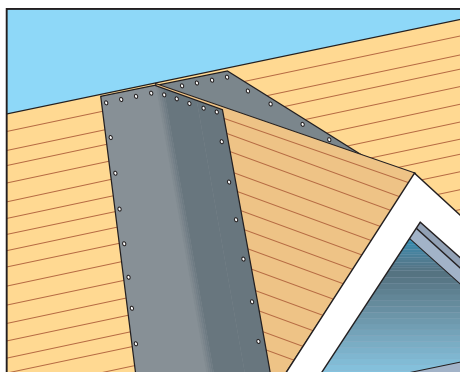


Image 3



## Installation of the roofing shingles

### Weather requirements for installation

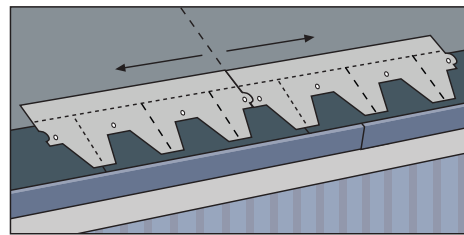
Do not start installation when it is raining or snowing. Make sure that the roofing shingles surface is dry before installing the next layer of roofing shingles. It is acceptable to start roofing when the surface of the underlayment is still moist.

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

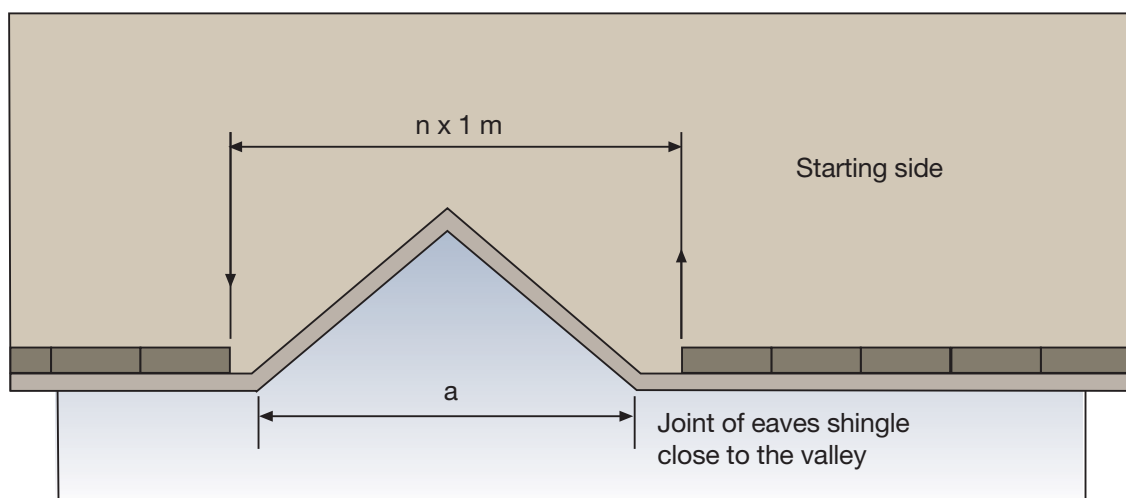
Roofing materials should be stored in warm conditions prior to installation.

### Eaves / eaves shingles

- Install eaves shingles over the drip trims.
- Eaves shingles 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-, Forte- 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 eaves shingles.



- Remove the protective film covering the adhesive surface and press the adhesive side of the eaves shingles against the metal drip trim, leaving 10 mm of the drip trim visible.
- Install the eaves shingles in sequence and butt joint the ends without leaving any gaps.
- If the eaves line is not straight and contiguous (above bay windows, small verandah with a turn on the eaves direction, etc.), the distance between the ends of the eaves shingles on the opposite sides of the verandah or other similar structure must be divisible by 1 meter (measured above the structure). This enables the correct alignment of the pattern of the shingles above the structure. Usually the dimensioning usually has to be done by marking out perpendicular reference lines over the structure, as shown below. See the attached separate instructions for "Working around a verandah or a similar structure" on page 21.



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

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

## Installation of Mansion shingles

Before installation, open 4-5 packages of shingles and mix them to prevent the possible color differences. If this can not be done, the color difference must be observed at all times during installation. Do not install different manufacturing batch on the same slope.

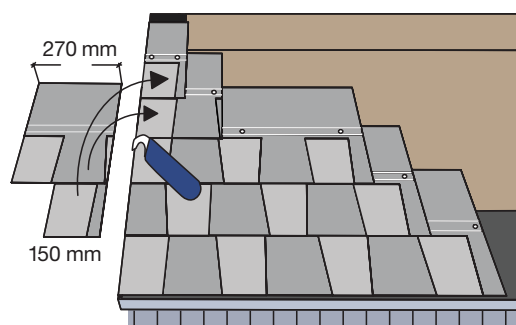
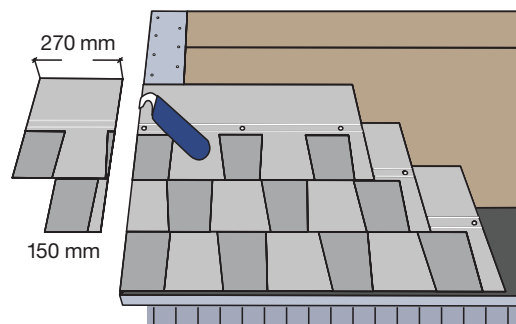
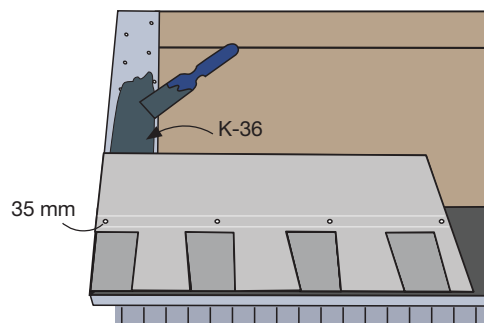
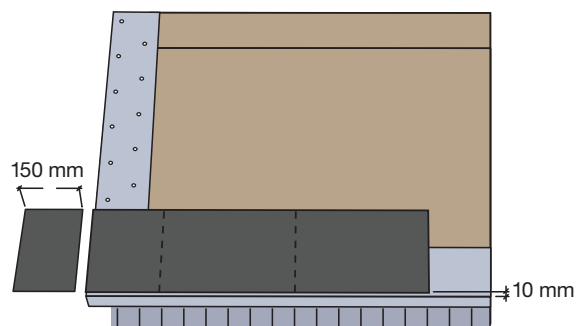
Start installation from the verge on the drip trim with eave shingle as shown in the image. Shorten the first eaves shingle by 150 mm and remove the plastic covering from the underside of the shingle by pulling it down from the middle. Continue installing the eaves shingles normally. After this, start installing Mansion shingles as shown in the second image. Nail all shingles at the nailing zone using 4 nails as shown at the picture.

**NOTE!** 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 K-36 Sealing Compound. Cut the shingles as shown in the image. Shorten the first shingle in the second rows 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 full shingles. Start the sixth row like the first row and repeat the same five-row pattern throughout the whole slope.

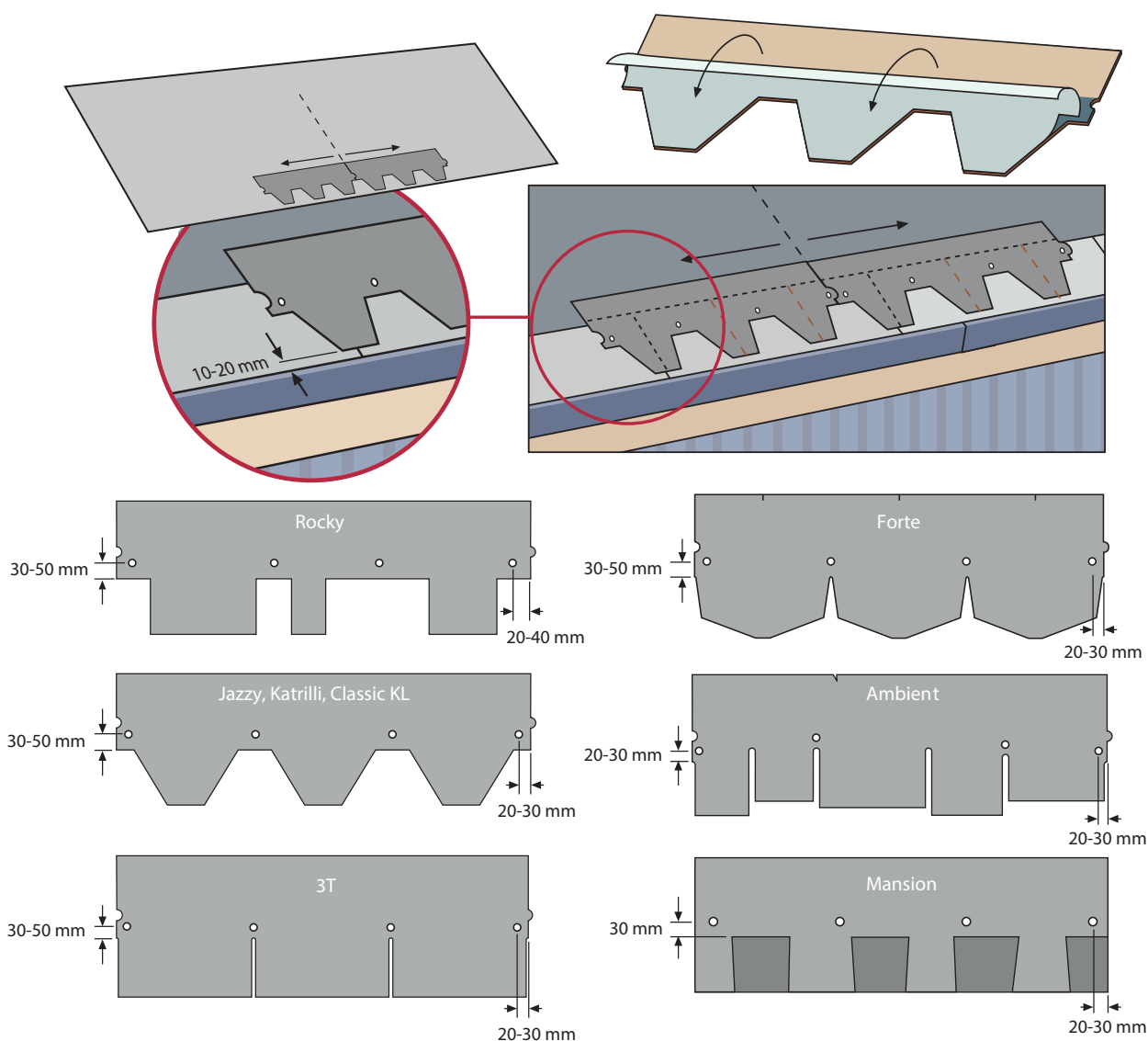
Continue installing the shingles one row after another and ensure that rows are straight. Align the shingles using the lower edges of the shingles. The height of the upper edge may vary a little.



## Roofing shingles

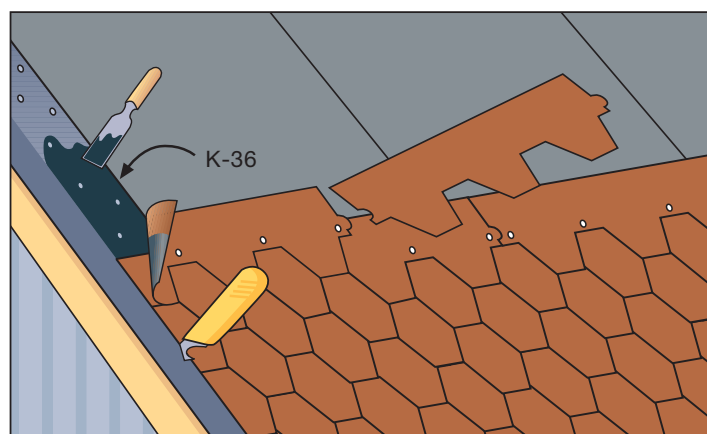
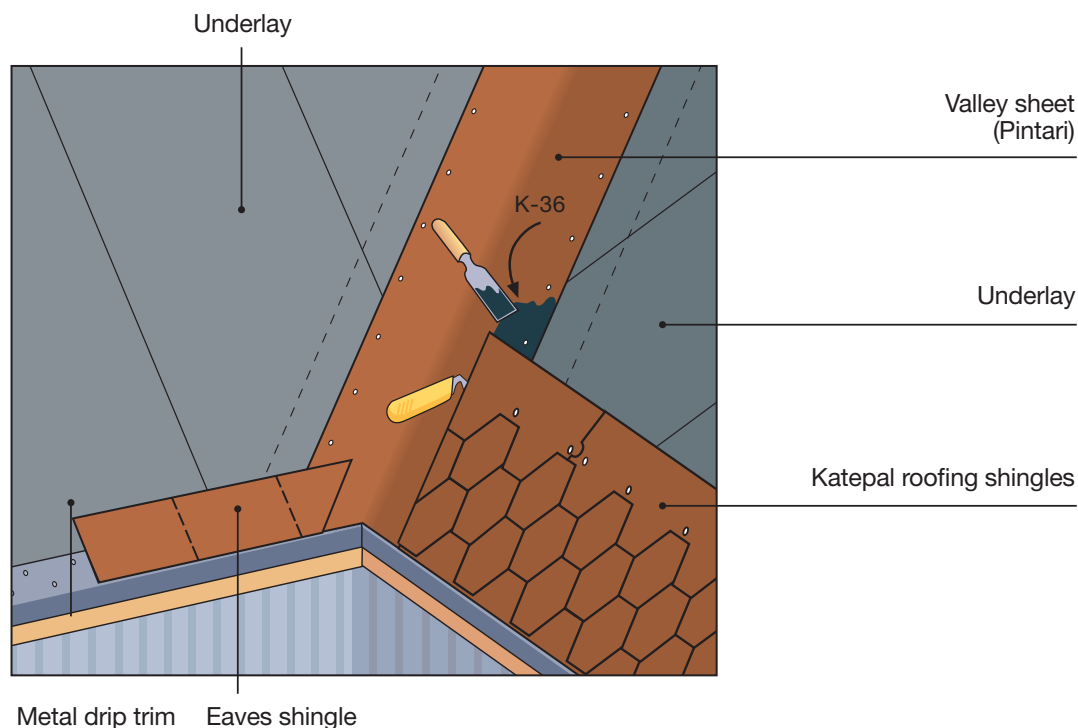
During installation, always mix the shingles at least from 4 to 5 randomly chosen bundles to minimize possible color differences. Do not install shingles from different production batches on the same visible part of the roof surface. If this cannot be avoided, the shingles from different batches must be mixed and the possible differences in hues checked continuously 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 eaves shingles. The lower edge of the first row of shingles is aligned 10–20 mm above the bottom edge of the eaves 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 pieces / shingle = 28 pieces / m<sup>2</sup>) 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 (playhouse, attic space used for some purpose, etc ), screws of suitable length with flat and wide 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 e.g. triangular batten is used to raise the edge) and at penetrations (to the sleeve flange), using K-36 Sealing Compound.



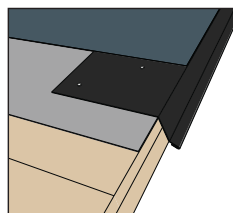
## Valleys / verges

- At valleys, the ends of the shingle 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 K-36 Sealing Compound, 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 K-36 Sealing Compound applied to a minimum width of 100 mm.

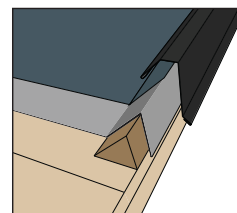


### End flashing

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



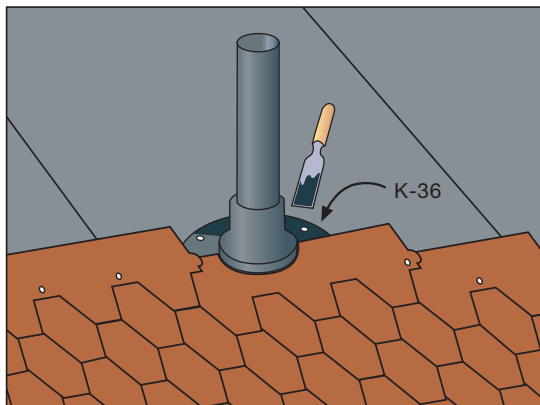
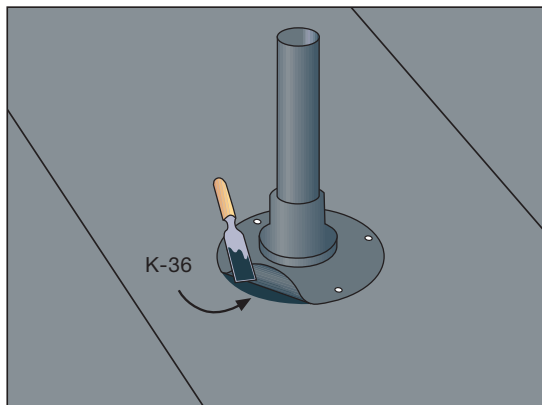
Using a Katepal metal drip trim.



Using a Katepal end eave flashing.

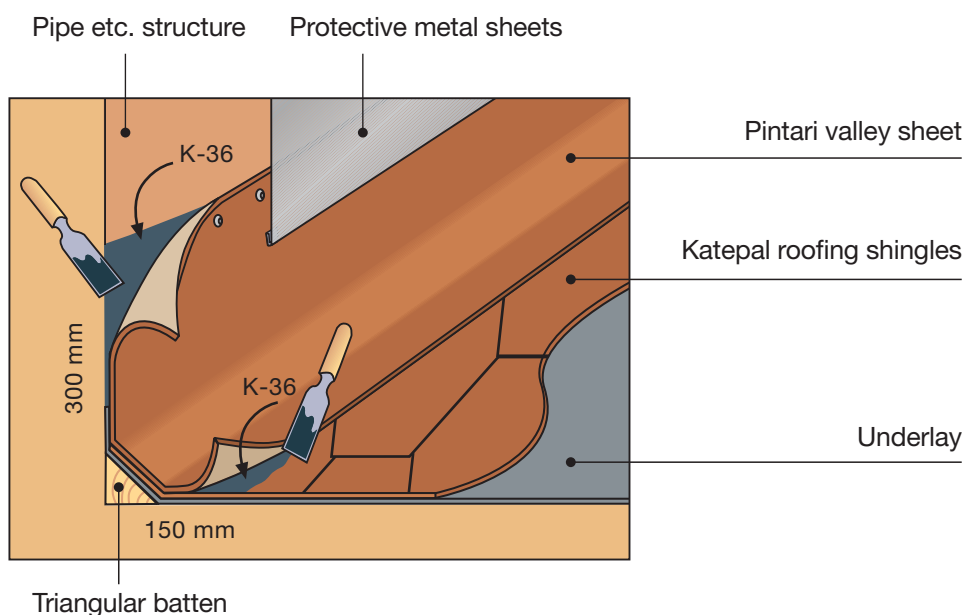
## Sealing the penetrations

- The round penetrations (such as the drain's ventilation pipe) use grommets made of EPDM rubber.
- The flange is placed and fitted around the pipe, glued on top of the underlay and nailed or screwed to the underlay with 4-5 fittings to prevent sliding.
- The roofing shingles are cut to match the rubber sleeve rising from the roof surface and glued to the flange carefully.
- The possible gap between the shingles and the sealing is filled with K-36 Sealing Compound or Seal 7.
- When using other brands of sealing compound, follow the same principle and follow the instructions of the sealing manufacturer.



## Upturns

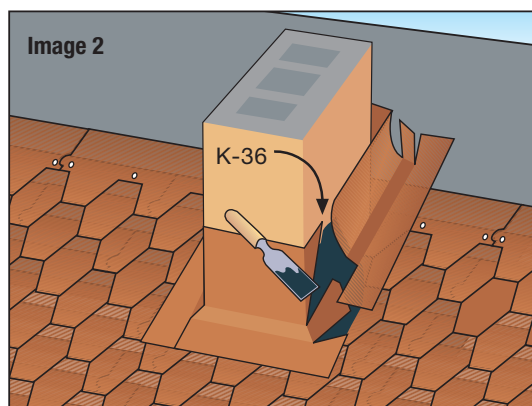
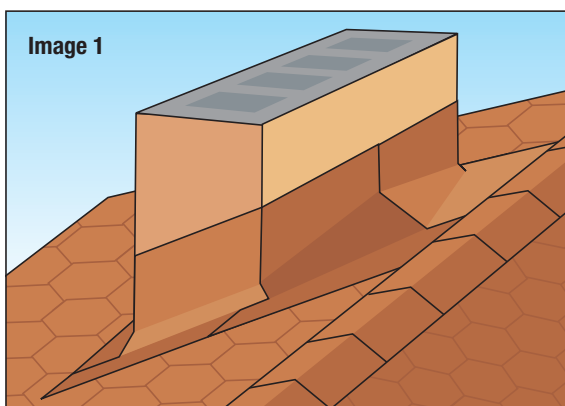
- The height of the upturn from the roof surface is at least 300 mm.
- Use a triangular batten at the part where the wall meets the roof on the side of the slope.
- The shingles and the underlay are raised to the upper edge of the batten or on the wall surface by approximately 5 cm.
- The upturn is made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





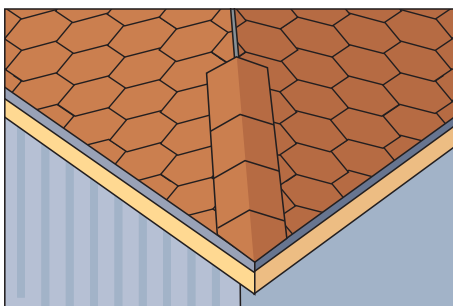
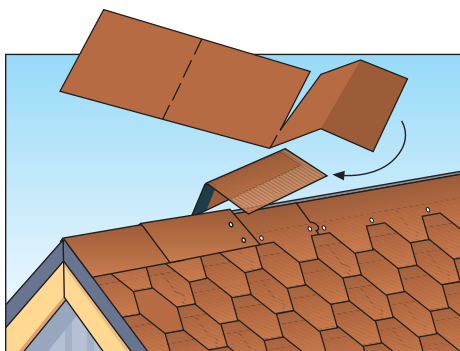
## Chimney penetrations and conduits

- First, install the triangular batten (halved 2" x 2") at the part where the vertical surfaces meets 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 the water will not stay behind the pipes (image 1)
- The underlay and the roofing shingles are raised to the upper edge of the batten.
- The upturns are made of Pintari, as shown in image 2. Also see page 18.
- Glue the upturn pieces to the pipe and on top of the roofing shingles on the slope. Then seal the corners carefully.
- The required amount of Pintari matches the circumference of the pipe (at the roof level) + 1,6 m / pipe.
- Creating chimney penetration for log houses: see special instructions, page 25.



## Ridges/shingles

- At the ridge, cut the uppermost roofing shingles according direction of the ridge (do not bend them over the ridge!)
- The eaves shingle can be divided into 3 ridge shingles by bending it and tearing it.
- At a ridged roof, the installation of the ridge shingles begins at one end, so that the adhesive side of the first shingle is set on top of the outer edge of the verge, on top of the roofing shingles. Then the shingle is nailed from the non-adhesive end to the roof decking with four nails.
- The shingles are installed over and halfway through the ridge. The adhesive side of the lower surface of the shingle goes over the previous shingle by approximately 50 mm, covering the nails. Continue this way through the ridge.
- The last shingle is placed at the other end of the ridge without nailing it. Instead, use K-36 Sealing Compound 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 K-36 Sealing Compound 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 when the pipe is possibly moves (Note! Log structure). We always recommend using round grommets.



### Under pressure 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. The 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 glue and nails. Cut the roofing shingles to a greater diameter than the diameters of the pass-throughs pipes diameter, and glue the shingles on 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 implemented as indicated on page 10, factory-made roof vents can be used, generally for the whole length of the roof ridge. Typical target uses include renovated wooden structures, where the airing 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 for the width of 100 mm, and roof vents attached according to the installation guide. The gap between the old roof and the vents is sealed with K-36 Sealing Compound. Finally, install roofing shingles or self-adhesive bitumen strips to 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 substructure with adequate fasteners. Only use gangways manufactured and tested for this purpose.

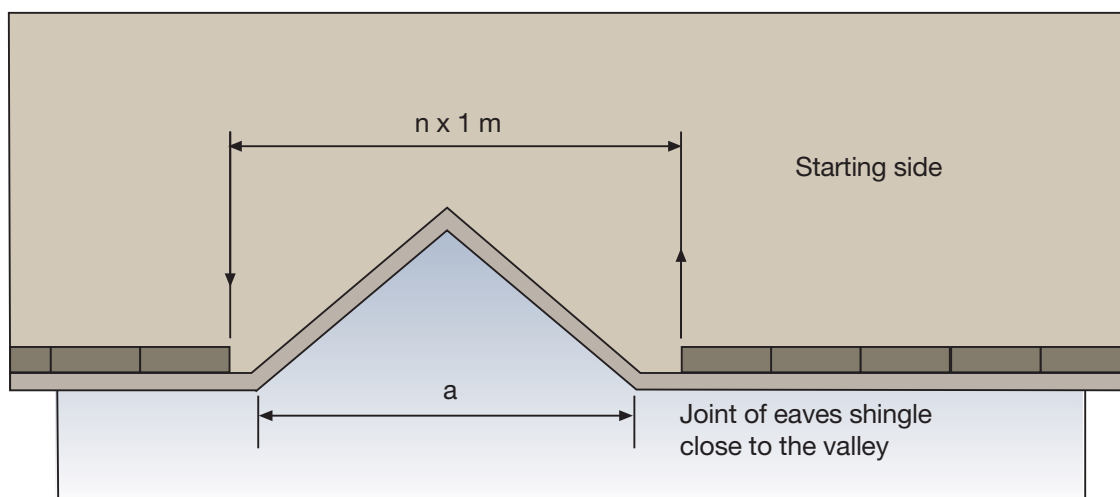
### Snow barriers

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 attachment parts are sealed watertight.

## SPECIAL INSTRUCTIONS

### Working around a verandah or a similar structure / the aligning of the shingles over the structure

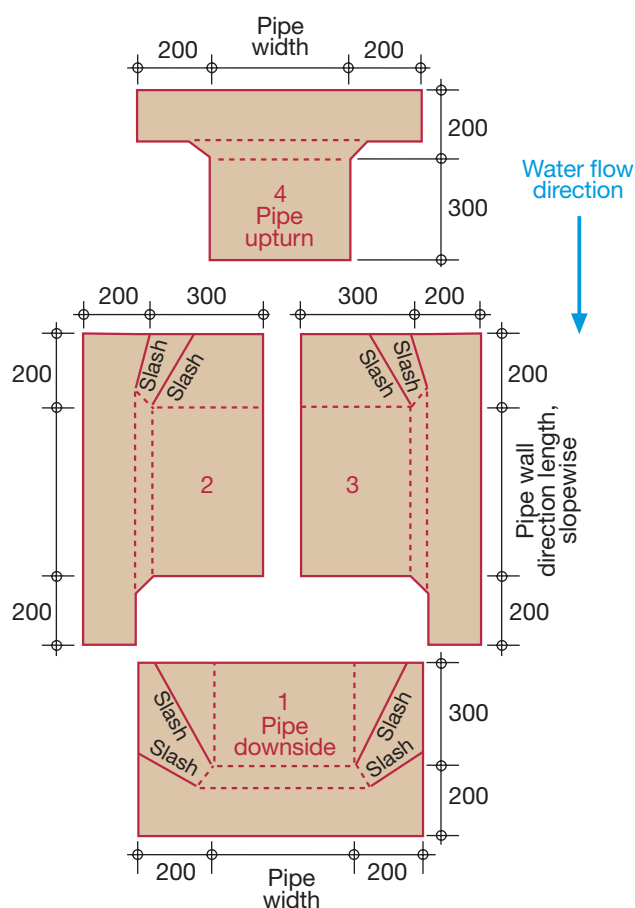
If a verandah, a balcony or a similar structure is placed on the slope so that the parts of the roofing that begin at the eaves are connected over the structure, you need to align the seams of the roofing shingles (and eaves) correctly. At the both sides of the structure (measured “over” the structure), the gap between the seams must be divisible by 1/3 meters for Classic KL, Jazzy, Katrilli, 3T and Forte models, and by exactly 1000 mm in the Rocky and Ambient models, as shown in the image.



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

### Creating the upturns of the pipe

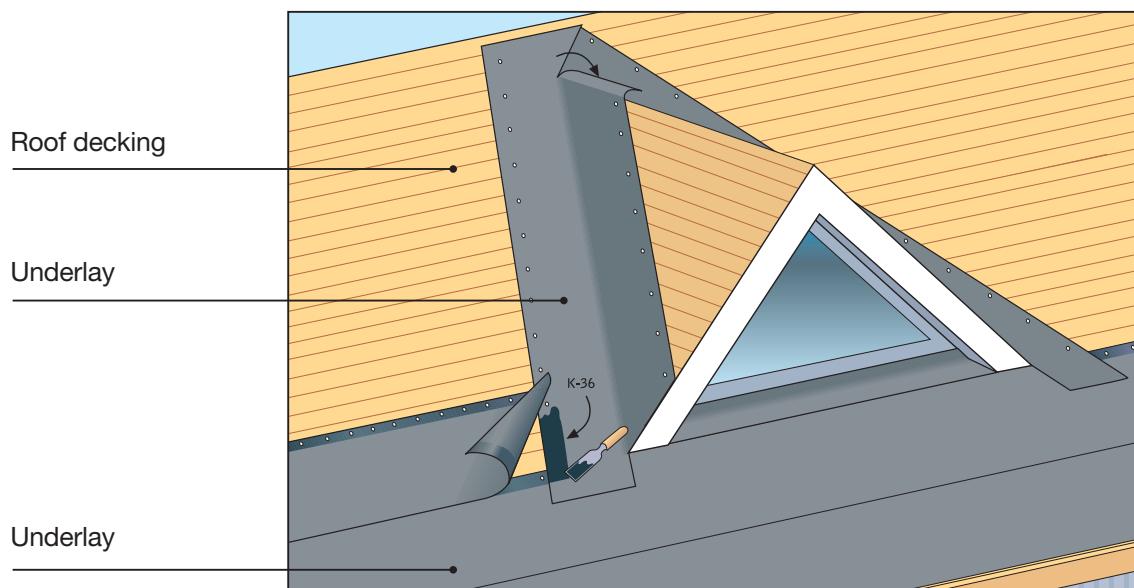
When the installation of the roofing has reached the upper edge of the chimney or some other larger upturn, cut pieces from a Pintari sheet as shown in the attached drawing and use K-36 Sealing Compound to glue them in the order shown for the entire length to the pipe and on top of the roofing shingles (approx. 15 cm on top of each other). On the upper side of the pipe, the strip goes under the roofing shingles. Create the upturn using a separate Pintari strip that reaches at least 30 cm high and overlaps the roofing shingle by 15 cm. Fix the upturns from the upper edge by, for instance, nailing them to the pipe seams. Finally seal the upturns with protective metal flashing.



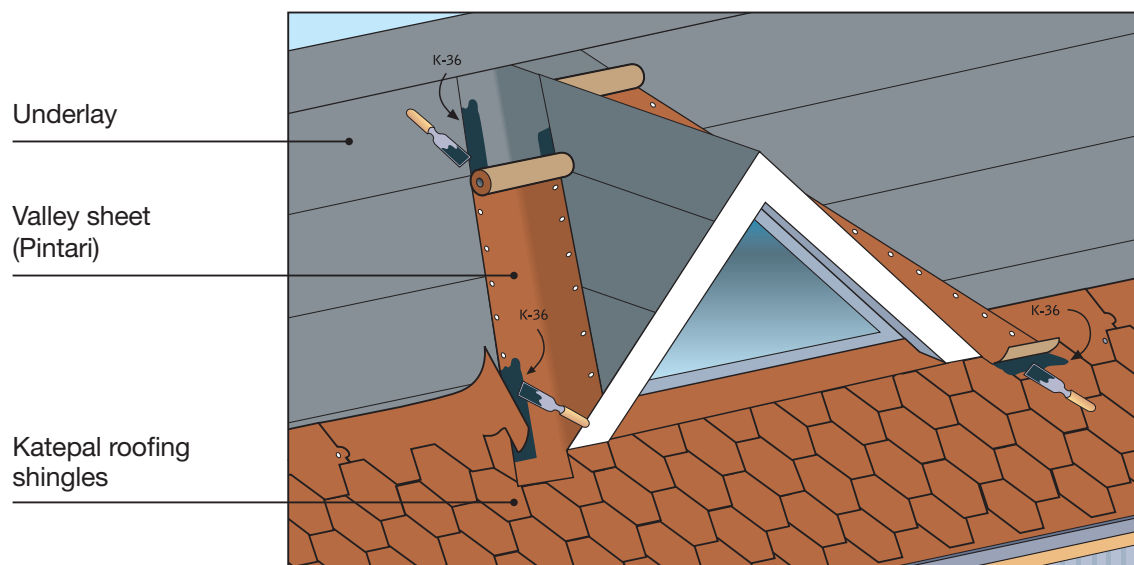


## Horizontal installation

If the lower end of a valley is placed 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 underlays below 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 overlaps the valley's underlay by 150 mm. The overlaps of the underlays at the valleys are glued with K-36 Sealing Compound.



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, 150 mm. The lower end of the valley sheet is glued carefully to the roofing shingles using K-36 Sealing Compound. The installation of the roofing shingles continues by overlapping them on top of the valley sheet normally, cutting them parallel to the valley sheet and gluing them to the valley sheet with K-36 Sealing Compound.

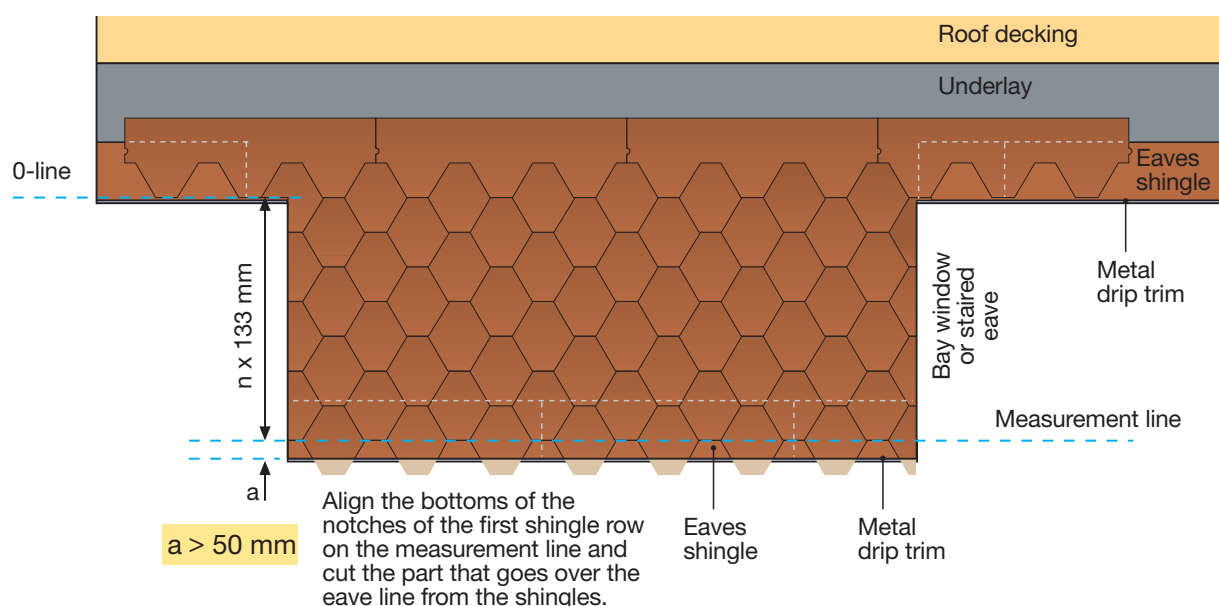




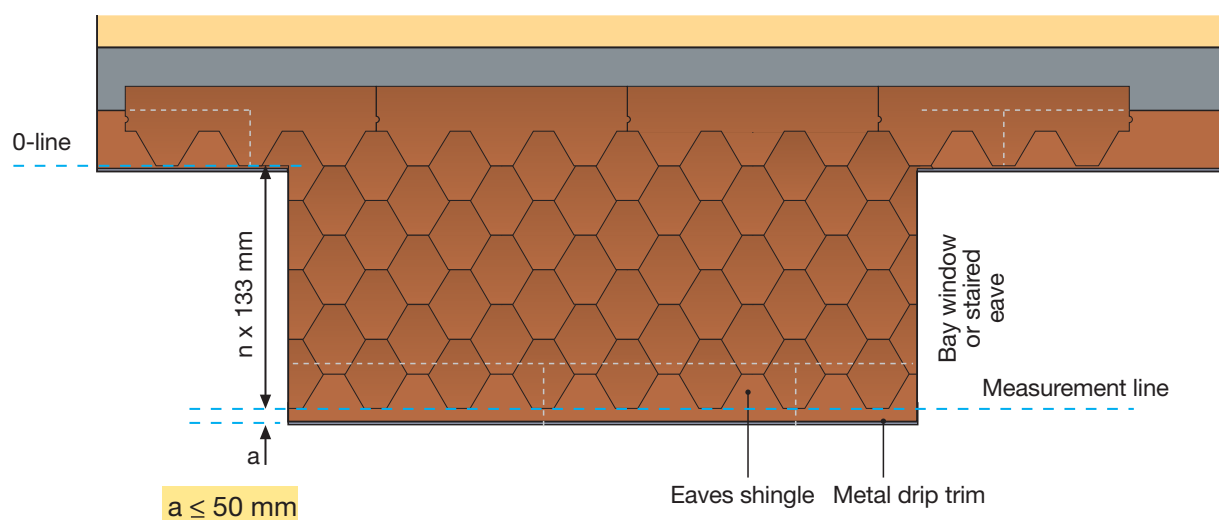
## Beginning the construction of above bay windows or staired eaves

When a bay window is located in the middle of the slope or at one end of it, the measurement for installing the lower edge of the bay window is performed 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). This 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 are 128 mm / row for Ambient, 148 mm / row for Forte, 141 mm / row for 3T and 162 mm / row for Mansion.

If the measurement of the above bay window or ant 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 eaves shingles according to the roofing shingle division.



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

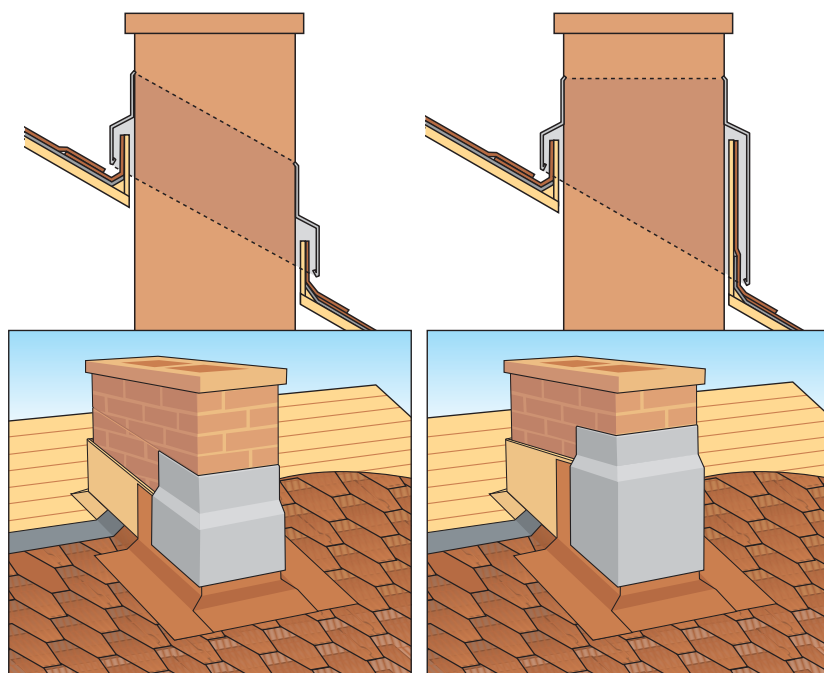


When working in a sideways direction, ensure that the eaves shingles are not aligned with the tips above the bay window and the lower eave of the slope. Take this into account to ensure that the perforated parts remain under the roofing shingles. When using Classic KL, Jazzy, Katrilli, 3T and Forte models, 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 goes 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 it should not be attached to the roof surface or the upturn. In these cases, the frame and the upturns can go 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.

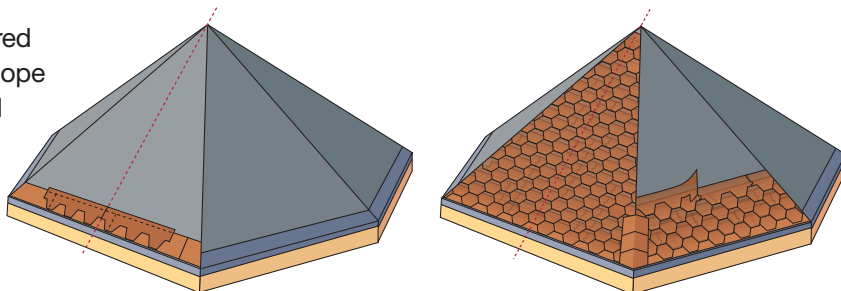
Ensure the fire-safe implementation of the chimneys pass-through and comply with the current regulations from your local authority or building designer.



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

With Classic KL, Jazzy, Katrilli, 3T and Forte models, installations should be performed by first drawing a targeting line from the center of the eaves directly to the ridge point. Align the shingle seams horizontally to the targeting line. Working upwards, the seam of every second shingle row goes on the same line, and the pattern becomes symmetrical for all slopes. With the Ambient, Mansion and Rocky shingle models, the shingle pattern will not be symmetrical. You do not need to align these shingle models like other roofing shingles.

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



## Renovating a roof made of roofing shingles

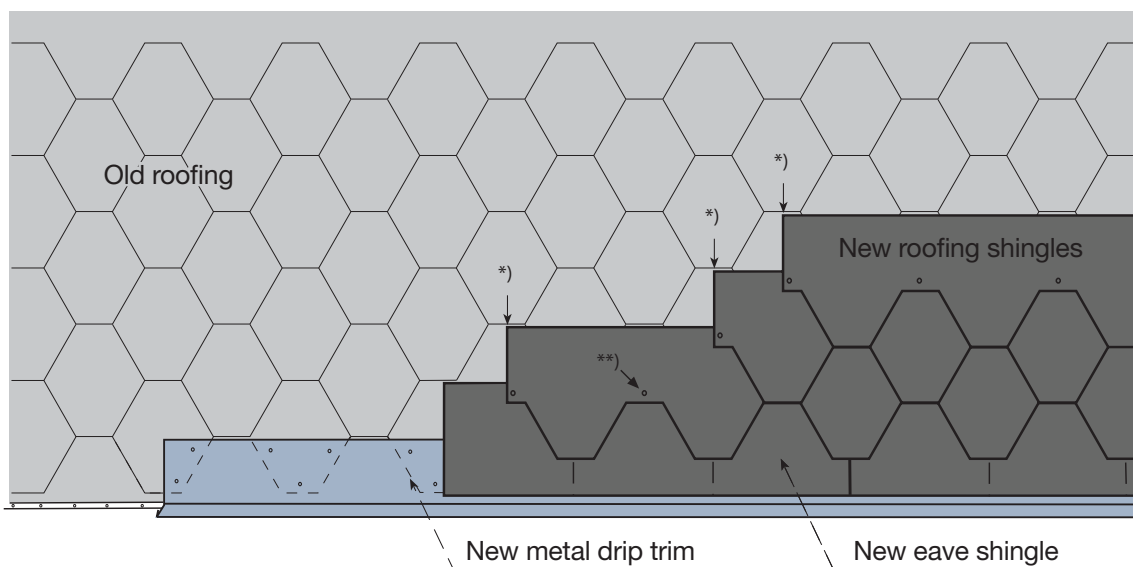
A roof made of old bitumen roofing shingles can be renovated in two ways:

1. Install the new roofing shingles are installed directly on top of the old ones. This is the faster and less expensive alternative.
2. The old roofing shingles and underlays are taken apart, and install a new underlay and new roofing shingles are installed on the old roof decking. This is a thorough alternative, allowing the repair of the roof decking when needed, or its total replacement.

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

You may directly install a new roofing shingle of the same model on top of the old Jazzy, Katrilli or Classic KL bitumen roofing shingles, subject to the following preconditions:

- The roof decking under the old membrane is in a good condition and the ventilation under the sub-structure works correctly.
- The exposure / shingle layer of the roofing shingle approximately matches in the old and new shingles (the maximum difference is 10 mm).
- Roofs with a pitch of less than 1:3 must have underlayment beneath the old roof. Old roofs steeper than 1:3 do not require underlay.
- When attaching the new roofing shingles, use roofing nails that go through the roof decking. (The length of the nail should be at least 35 mm.)
- Follow the overlapping instructions below to ensure the “stairing” of the shingles overlap correctly. The nails of the new shingles should not go in the holes of the old shingle pattern.
- Remove the old shingles from the ridge and the hips of the hipped roofs before installing a 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.

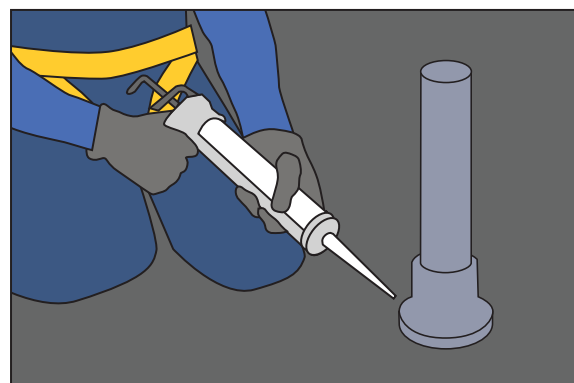
\*\*) The length of the nails is chosen to ensure the tips of the nails go through the roof decking (35 mm sheet nails).

## Roof maintenance

A bitumen roofing shingle is easy to maintain and durable. It does not need to be painted or otherwise covered. A regular inspection and cleaning is sufficient for maintenance.

### Do the following:

- Inspect the roof regularly, at least twice a year (spring and autumn)
- Remove all trash from the roof (leaves and moss etc.) by brushing it lightly without harming the roof surface. Manually remove branches etc. that may have possibly fallen on the roof.
- When necessary, use Katepal K-10 Roof Wash to remove moss.
- Ensure that water can drain from the roof without anything to prevent it. Clean the rain-water 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 a shovel or other tools. Do not remove ice mechanically, such as by hacking at it.
- When working on the roof, cover the surface.
- If you find there is a need for repairs, make the repairs immediately to avoid large-scale damage.
- When necessary, seal the seams and penetrations with K-36 Sealing Compound or with Seal 7.
- Avoid walking on the roof unnecessarily.
- When necessary, ask for advice from Katepal Oy's Technical Support.



CE	
KATEPAL	06
EN 544	
Kumibituminen kattolaatta	
Elastomerasfalt takshingel	
Elastomer bitumen shingle for roofs	
Tyyppi/Typ/Type:	4 E 2
Paloluokka:	B <sub>ROOF</sub> (t1)
Utvändig brandpåverkan:	B <sub>ROOF</sub> (t2)
External fire performance:	B <sub>ROOF</sub> (t4)
Palokäyttäytyminen:	
Reaktion vid brandpåverkan:	F
Reaction to fire:	
Lisätiedot / Information: <a href="http://www.katepal.fi">www.katepal.fi</a>	



Katepal Oy is the leading manufacturer of bitumen roofing materials and other bitumen products. The factory of this family-owned company, which was established in 1949, is located in Lempäälä, next to Tampere. By selecting Katepal, you support Finnish work.

Our products have the CE marking – they meet the requirements of product standards and the Construction Products Regulation. We follow the ISO 9001 quality system. We take the environment into account in all of our operations.



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