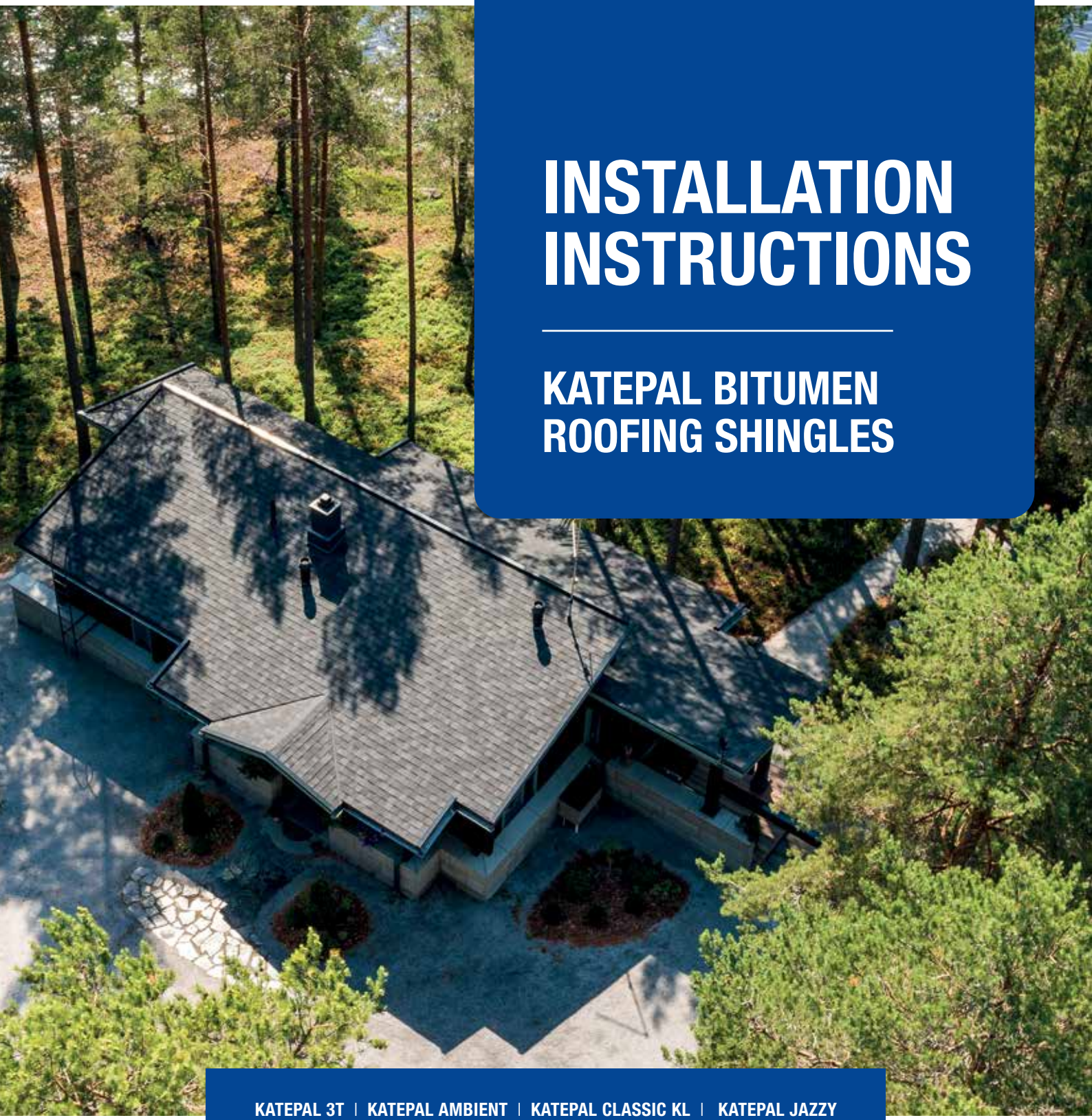
KATEPAL

INSTALLATION INSTRUCTIONS

KATEPAL BITUMEN ROOFING SHINGLES



KATEPAL 3T | KATEPAL AMBIENT | KATEPAL CLASSIC KL | KATEPAL JAZZY
KATEPAL KATRILLI | KATEPAL MANSION | KATEPAL ROCKY

KATEPAL

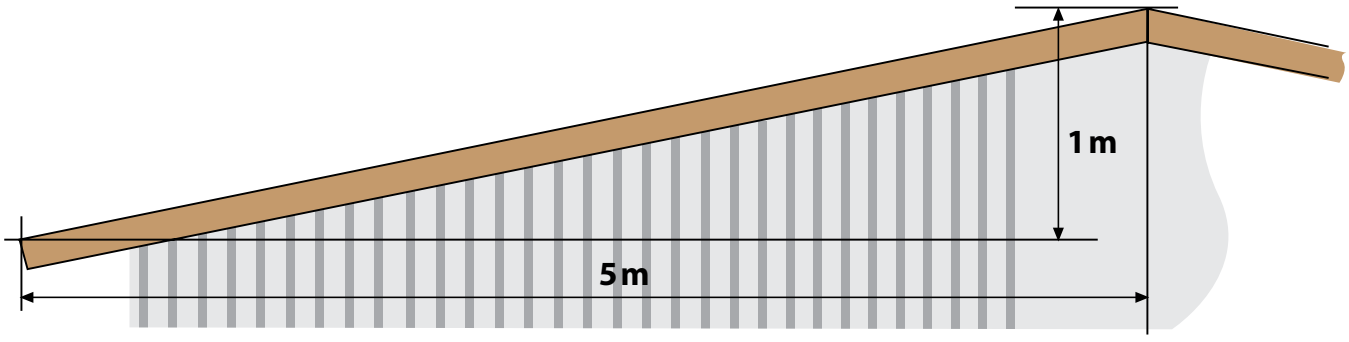
The latest version of these instructions is available at www.katepal.net

CONTENTS

KATEPAL ROOFING SHINGLES

Katepal bitumen roofing shingles are made from modified bitumen with fiberglass as the reinforcing layer. Together, these materials provide the products with their technical properties, such as waterproofing, flexibility and dimensional stability. The top surface of the shingles is covered with slate and/or mineral granules, while the underside features a partially adhesive surface protected by a removable film and a surface partially covered by sand. The surface granules give the product its colour, which blends well with the environment, and a rough texture for grip as well as protection against UV radiation. Katepal bitumen roofing shingles meet the following fire classification standards: BROOF (t1), BROOF (t2), or BROOF (t4).

Katepal roofing shingles are suitable for both new buildings and the renovation of existing roofs with a minimum roof pitch of 1:5 (ap-proximately 12°). A pitch of 1:5 means that the roof slope descends one metre over a five-metre span. The steeper the roof, the better the shingles' appearance is highlighted. Bitumen roofing shingles are particularly well-suited for complex roof shapes. Thanks to their flexibility, they are easy to work with, and even detailed areas—such as ridges, penetrations, joints and seams—pose no problems. Their ease of installation means that roofing shingles can be installed by non-professional builders. Katepal offers a wide range of shingle products and colour options.

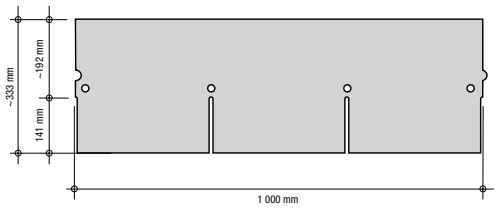


PRODUCTS AND DIMENSIONS

Katepal 3T

Quantity/package: 17 pcs I coverage/package: 2.4 m²

Surface side



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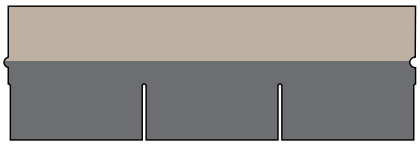
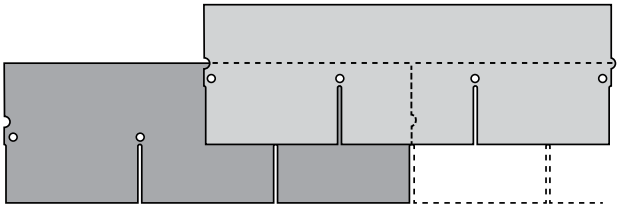
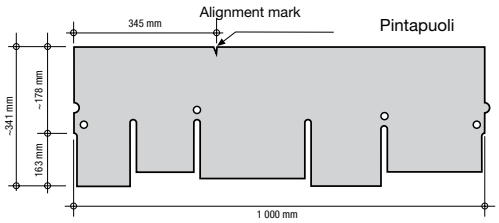


Installation



Katepal Ambient

Quantity/package: 17 pcs I coverage/package: 2.18 m²



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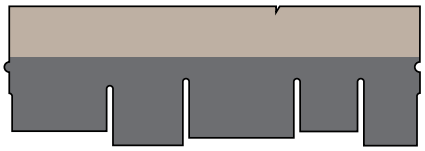

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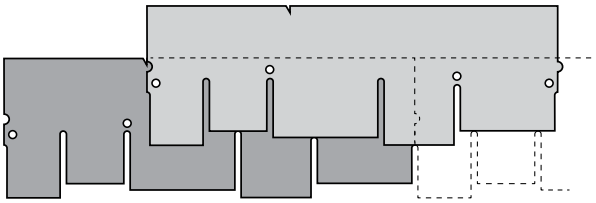
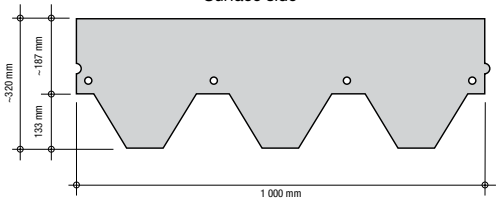


Katepal Classic KL, Katepal Jazzy, Katepal Katrilli

Quantity/package: 22 pcs I coverage/package: 3 m²

Surface side



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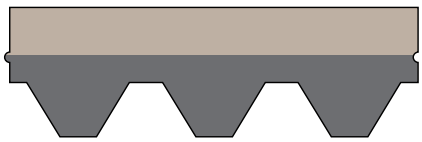

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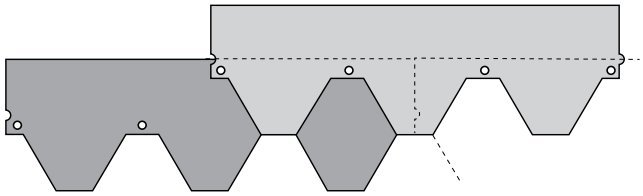
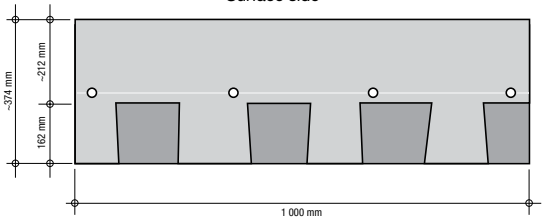


Katepal Mansion

Quantity/package: 10 pcs I coverage/package: 1.6 m²

Surface side



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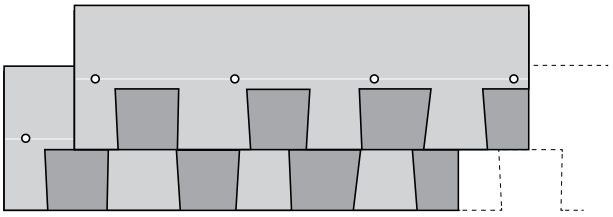
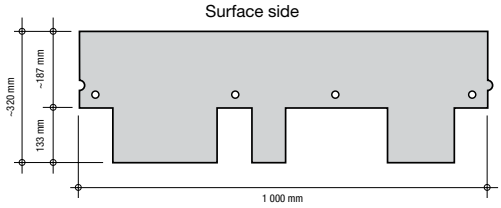
Installation example



Katepal Rocky

Quantity/package: 22 pcs I coverage/package: 3 m²

Surface side



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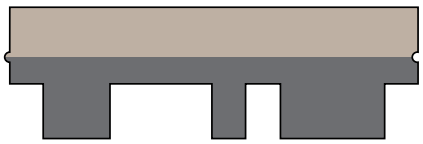
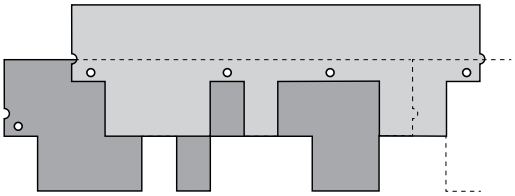


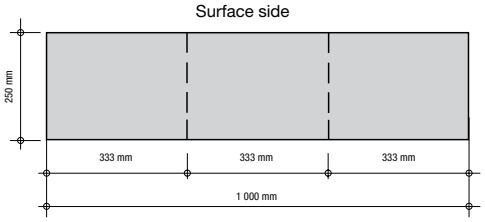
Installation



Katepal Eaves and Ridge Shingle

1 eave shingle = 3 ridge shingles

Surface side



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RELATED PRODUCTS

EAVES AND RIDGE SHINGLES

The Katepal Eaves and Ridge Shingle is manufactured in the same way as the roofing shingles and is a rectangular roofing shingle. The top surface is granulated and the underside is partially self-adhesive (covered by a protective film) and partially sand. The Eaves and Ridge Shingle is installed out of the package with butt joints along the lower eaves of the roof. The product has ready-made perforations that allow the shingle to be easily split into three pieces for use on the ridge. On the ridge, the shingles are installed with an overlap along the ridge line according to the installation instructions. Each roofing shingle product has a corresponding Eaves and Ridge Shingle. The table on page 6 will help you choose the correct Eaves and Ridge Shingle for your chosen roofing shingle product. One package of Eaves and Ridge Shingles covers approximately 20 metres of eaves or 12 metres of ridge.

CHOOSE THE CORRECT EAVES AND RIDGE SHINGLES FOR YOUR ROOFING SHINGLES

Roofing shingles	EAVES AND RIDGE SHINGLES	11201 Red	11202 Green	11203 Brown	11204 Grey	11205 Black	11241 Bedrock Red	11242 Moss	11243 Bark	11244 Ambient Grey	11254 Graphite Grey	11256 Desert Brown	11257 Dark Ochre	11270 Terracotta	11272 Mahogany	11287 Copper	11297 Arundel
10101 Katepal Classic KL Red		●															
10102 Katepal Classic KL Green			●														
10103 Katepal Classic KL Brown				●													
10104 Katepal Classic KL Grey					●												
10105 Katepal Classic KL Black						●											
10133 Katepal 3T Brown									●								
10135 Katepal 3T Black						●											
10135 Katepal 3T Red							●										
10141 Katepal Katrilli Autumn Red							●										
10142 Katepal Katrilli Moss								●									
10143 Katepal Katrilli Bark									●								
10181 Katepal Jazzy Red							●										
10183 Katepal Jazzy Brown									●								
10184 Katepal Jazzy Grey										●							
10187 Katepal Jazzy Copper																●	
10193 Katepal Ambient Brown									●								
10194 Katepal Ambient Grey										●							
10197 Katepal Ambient Dark Ochre																●	
10221 Katepal Mansion Montre											●						
10222 Katepal Mansion Dover											●						
10223 Katepal Mansion Bran									●								
10224 Katepal Mansion Coburg							●										
10225 Katepal Mansion Eilean																●	
10226 Katepal Mansion Peles															●		
10227 Katepal Mansion Arundel																	●
10261 Katepal Rocky Bedrock Red							●										
10263 Katepal Rocky Bark									●								
10264 Katepal Rocky Graphite Grey											●						
10265 Katepal Rocky Black						●											
10266 Katepal Rocky Desert Brown												●					
10267 Katepal Rocky Dark Ochre													●				
10270 Katepal Rocky Terrackotta														●			
10272 Katepal Rocky Mahogany															●		

UNDERLAY MEMBRANE

On roofs covered by shingles, an underlay membrane is always installed beneath the shingles as an additional protective layer. The underlay should be either Katepal SuperBase Grip Green, Katepal XtraBase or another underlay membrane recommended by Katepal. These membranes have adhesive edges and are fastened to the roof deck using roofing nails.

VALLEY MEMBRANE

If the roof includes internal valleys, they should be covered with Katepal Pintari. Pintari is also suitable for covering other roof details, such as pass-throughs and upturns.

ADHESIVES

Discontinuities on shingle-covered roofs must be bonded to the substrate using Katepal K-36 sealing compound. Typical areas include valley edges, gable eaves, upturns and penetrations. The recommended adhesive layer thickness is approximately 0.5–1 mm. Visible seals can be completed using Katepal Seal adhesive and sealant.

Katepal K-36 sealing compound hardens in cold conditions, so the recommended application temperature is above +10 °C. However, the product can also be used in colder conditions if kept warm prior to use.

The product is available in 1 and 3 litre tins as well as 0.3 litre tubes. Katepal Seal adhesive and sealant is supplied in a 0.29 litre cartridge.

FLASHINGS

Eaves and gable ends should be covered with sheet metal flashing. Katepal Drip edges are installed on the eaves between the underlay membrane and the roofing shingles. Gable ends can be done in the same way using Katepal Drip edges or, alternatively, a separate Katepal Verge sheet can be used. The flashing elements are 2 metres long and should be overlapped by 50 mm.

ROOF PENETRATIONS

Roofs may contain multiple penetration points where pipes or other technical installations pass through the roofing structure. Another typical roof penetration is an underpressure vent, used to enhance roof ventilation. These areas should be sealed using factory-manufactured roof penetration elements with flanged bases to ensure a secure and watertight seal.

VENTILATION

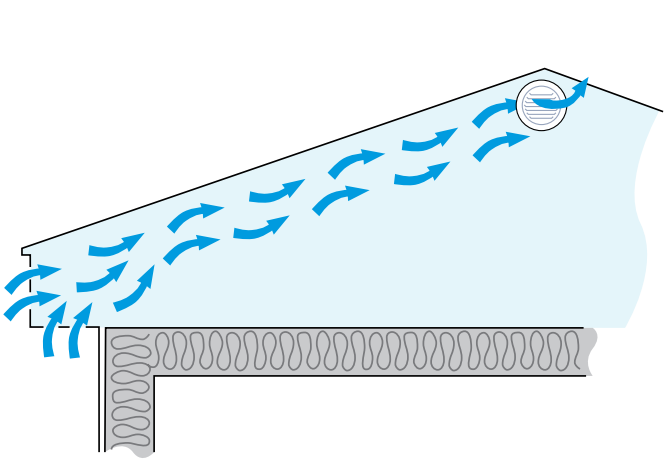
Proper ventilation is essential to the performance and durability of a timber-structured roof. There must be a ventilation gap of at least 50 mm beneath the roof decking. Exhaust openings for ventilation air should be positioned as high as possible, for example at the ridge or in the gable triangles. If necessary, underpressure ventilators can be used to enhance airflow. Sufficient intake air openings must be provided at the eaves.

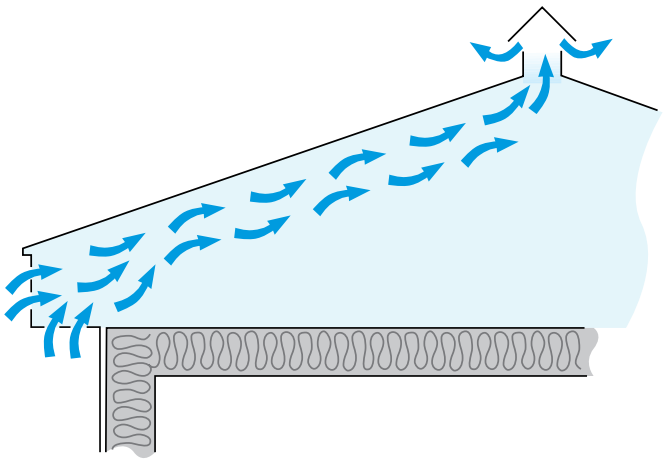
All ventilation openings, gaps, grilles and vents must be protected with mesh or screens where necessary, to prevent birds, squirrels and other animals from entering the ventilation space. Proper ventilation is especially critical if there are discontinuities or holes in the roof's vapour or air barrier, as these can lead to moisture accumulation.

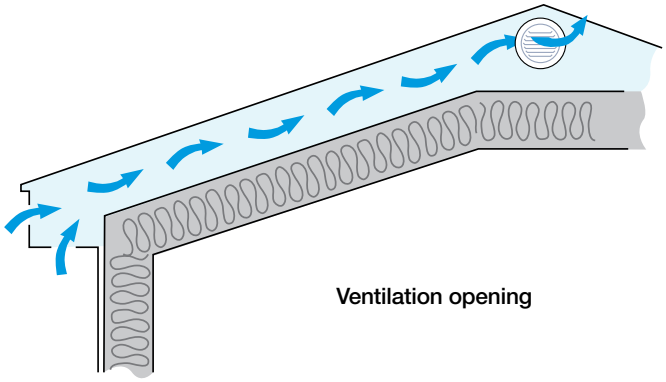
FIXING VENTILATION ISSUES

If the ventilation gap consists of individual 'channels' between roof trusses, where air flows from the eaves to the ridge but not along the ridge itself, a continuous ridge-level ventilation channel must be installed beneath the ridge. This channel ensures that air can exit from all truss cavities.

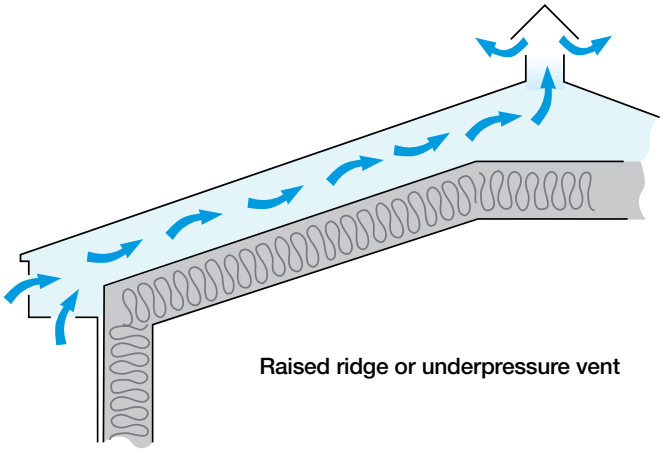
If this is not sufficient to ensure proper ventilation, the ridge must be raised as far as is needed to allow proper ridge-level air circulation.







Ventilation opening



Raised ridge or underpressure vent

INSTALLATION OF ROOFING SHINGLES

WEATHER REQUIREMENTS

Roofing shingles should not be installed during rain or snowfall. Ensure that the adhesive surface of the roofing shingle (i.e., the previously installed shingle) is dry. A slightly damp underlay surface is acceptable.

The minimum installation temperature for shingles is +5 °C. In colder conditions, the workability and adhesive bonding performance of the product may be reduced. Products should be stored in a warm place before installation, and if necessary, the adhesive surfaces should be warmed to ensure proper bonding.

For the underlay membrane, the recommended installation temperature is above +5 °C. If installation must be carried out in colder conditions, the adhesive areas should be heated using a hot air gun, and the rolls should be kept warm prior to installation.

SUBSTRATE

Bitumen shingles are typically installed on a solid substrate made of either tongue-and-groove boards or structural wood-based panels. The substrate must be sufficiently strong, non-flexing, smooth and dry. Boarding is recommended to be done using tongue-and-groove boards approximately 95 mm wide. The suitable thickness of the wooden substrate depends on the quality of the timber and the spacing between roof trusses. Always follow the timber supplier's recommendations regarding material thickness.

Board joints must be placed directly over trusses or otherwise supported separately. If tongue-and-groove end-matched boards are used, there should be at least three full-length boards between joints within the same truss span. Boards must be installed with sufficient expansion gaps to account for moisture and thermal movement. If the substrate is constructed using tongue-and-groove plywood or oriented strand board (OSB) panels, follow the panel manufacturer's instructions regarding thickness and fastening. OSB panels must be OSB/3 or OSB/4 grade, suitable for load-bearing use in humid conditions.

INSTALLING THE UNDERLAY

A bitumen underlay membrane must always be installed beneath bitumen shingles. The underlay is should be fixed in place using sufficiently long roofing nails that penetrate through the structural substrate, or alternatively with wide, flat-headed screws. The recommended underlay products include Katepal SuperBase Grip Green, Katepal XtraBase or other underlay membrane manufactured and approved by Katepal.

If the installation of the roofing shingles cannot be carried out immediately after laying the underlay membrane—for example, due to chimneys, flue penetrations, complex roof geometry, or if the roof will remain under underlay over the winter—it is strongly recommended to use Katepal SuperBase Grip Green. If Katepal XtraBase is used, the shingles must be installed immediately after the underlay installation.

In cold conditions, when the temperature is below +10 °C, the adhesive surfaces must be heated with a hot air gun to ensure proper bonding. In addition, the rolls should be stored in a warm environment prior to installation, if necessary.

Underlay membranes can be installed either vertically or horizontally on top of the roof decking (see Figures 1a and 1b). During installation, the membrane should be unrolled, carefully aligned along the correct line on the roof, tightened, and then fastened to the substrate with roofing nails at 10 cm intervals along the adhesive edge of the upper side. The underside adhesive edge of the next membrane should be pressed over the nail line after alignment, fastening and removal of the protective tape.

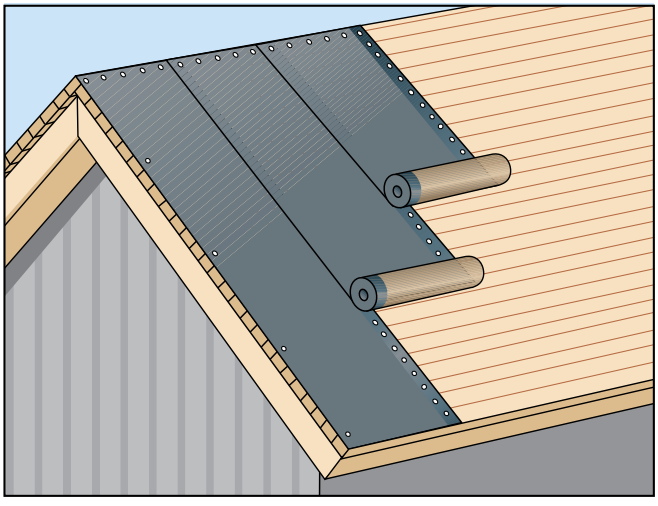


Figure 1a

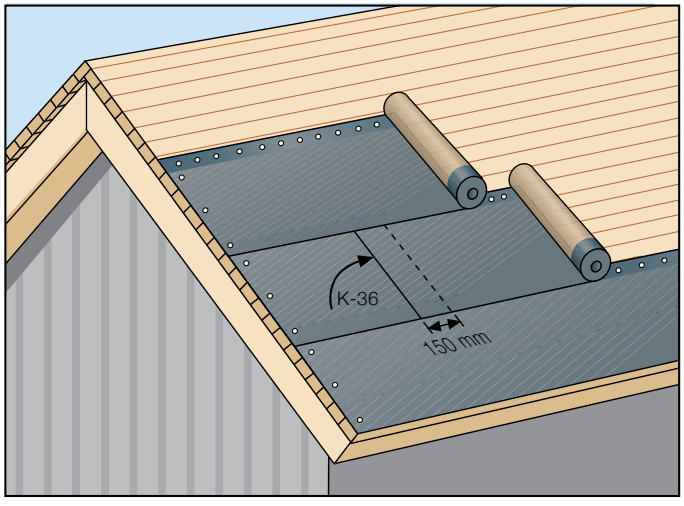


Figure 1b

On steep roofs, vertical installation is generally easier and results in fewer wrinkles in the membrane. The membrane must be perfectly straight and sufficiently tight to prevent wrinkling. When installing in cold conditions, special attention must be paid to proper tensioning of the membrane. Katepal primarily recommends vertical installation.

Begin installing the underlay membrane by placing a membrane along the valley, aligned with the direction of the valley (see Figure 2). The membrane should be nailed along its edges to the substrate using roofing nails at 20 cm intervals.

The underlay membranes from the roof slope must overlap the valley underlay membrane by 150 mm and be bonded with Katepal K-36 sealing compound. The underlay membranes are installed directly onto the decking, either vertically or horizontally, so that the edge extends 1–2 cm beyond the edge of the roof decking. Drip edges are installed at the eaves later (see Figure 3).

If a raised structure is used at the verges, the raising battens must be installed before the underlay membrane. In this case, the membrane is wrapped over the batten to form a drip edge, extending 1–2 cm below the bottom edge of the decking. The underlay is nailed to the raised batten through its face and the gently sloped top edge (see Figures 4a and 4b). At the ridge, the underlay membrane of the first roof slope is cut at the ridge and its upper edge is nailed to the substrate. The underlay from the second slope is then brought over the ridge by 150 mm and bonded on top of the first slope's membrane using Katepal K-36 sealing compound (see Figure 5). In upturn areas, the underlay is turned up at least 50 mm above the roof surface, and if necessary, nailed or bonded in place at the upturn (see Figure 6).

The installation instructions are also printed on the underlay membrane's paper wrapping.

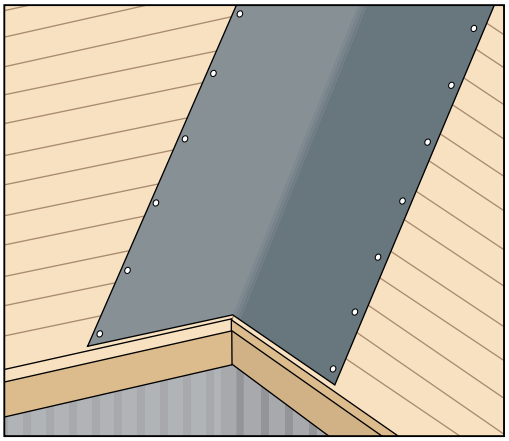


Figure 2

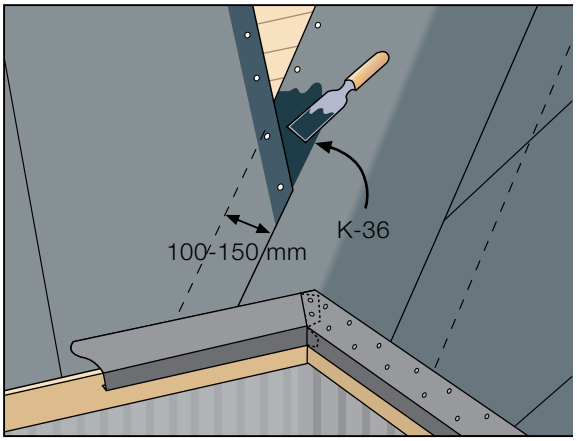


Figure 3

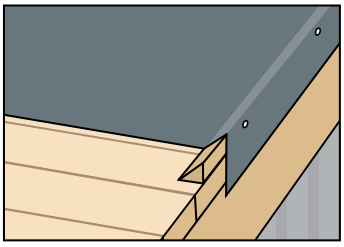


Figure 4a

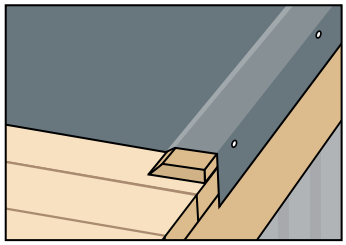


Figure 4b

REQUIRED TOOLS

The installation of Katepal bitumen shingles does not require special tools. The necessary tools include a hammer, tape measure, hook-bladed knife and a trowel or caulking gun. A pneumatic nail gun can also be used for fastening. For checking alignments, a coloured chalk line is a helpful tool. For installing metal flashings, tin snips are required.

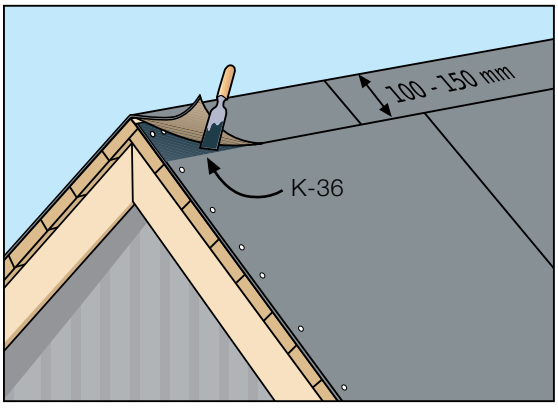


Figure 5

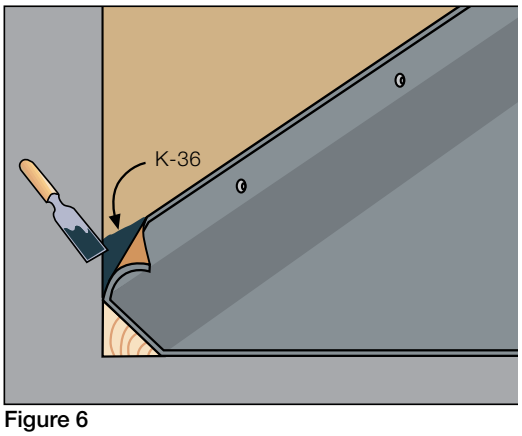


Figure 6

METAL FLASHINGS

DRIP EDGES

Drip edges are always installed over the underlay membrane at the eaves and generally also at the gable ends, unless the gable is constructed as a raised structure. The drip edges are fastened to the decking through the underlay membrane with roofing nails or wide, flat-headed screws approximately 10 cm apart in a zigzag pattern.

If the nail tips should not be visible on the underside of the eaves, sufficiently short, large flat-headed thin sheet metal screws, such as pointed KFR screws, can be used.

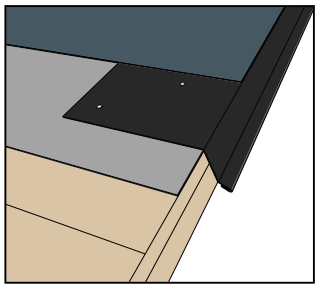
At the gable ends, it is recommended to bend the drip edge to a 90-degree angle, so that the front edge is positioned vertically downward. At overlaps, the drip edges are overlapped by 50 mm. The bottom corner of the lower flashing sheet should be cut diagonally with tin snips to allow better overlapping. At the overlap, two nails or screws should be fastened through both sheets.

VERGE SHEETS

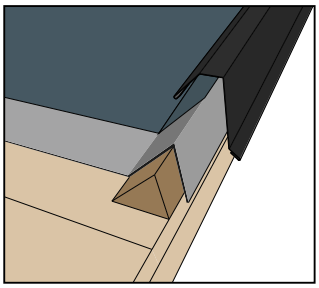
When using a raised verge structure, the verge flashings are installed over the finished bitumen shingle roof only after the ridge boards have been installed. The flashings are fastened to the raised batten from the outer face of the flashing using sealed roofing screws, approximately 5–6 screws per 2-metre length of flashing. The flashing overlaps at the joints should be 50 mm, following the same procedure as for drip edge overlaps. The corners of the lower flashing's bends are cut off to allow proper overlapping. Begin installation at the eaves so that the upper flashings overlap the lower ones, preventing water from penetrating beneath the flashings.

Katepal Verge sheets

Alternative methods for constructing the verge and installing the verge sheets



Katepal Drip edge



Katepal Verge sheets

VALLEYS

After installing the underlay and the metal drip edges, install a Katepal 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 firmly against the substructure, so that the sheet is not damaged under loads such as snow or ice, or when people move around on the roof. Glue the edges of the valley sheet to the underlay using Katepal K-36 sealing compound, and nail Katepal Pintari along the edges at 20 cm intervals to prevent slippage during the installation work (Figure 1). The adhesive should be applied in a 10 cm wide strip at a thickness of 0.5–1 mm. Valleys can also be constructed using Katepal Self-Adhesive Valley Membrane, a 75 cm wide top layer membrane with a fully adhesive underside protected by removable film.

At the eaves, glue the valley sheet to the metal drip edges with Katepal sealing compound K-36. Also glue any 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 (Figure 2). If the valley sheet ends at the ridge, cut the sheet at the ridge and nail the upper end to the substructure so that the nails are covered by the shingles (Figure 3).

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 24.

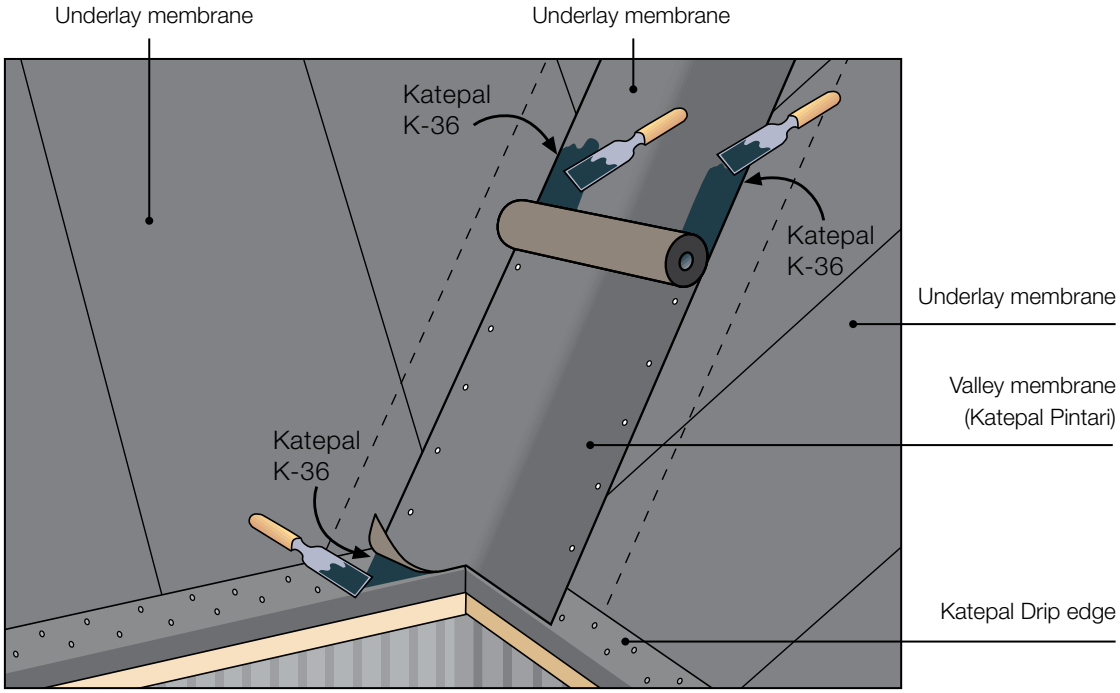


Figure 1

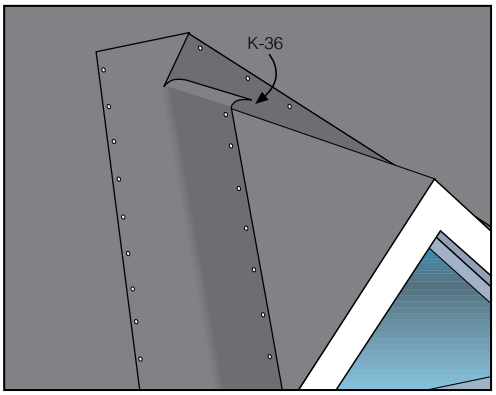


Figure 2

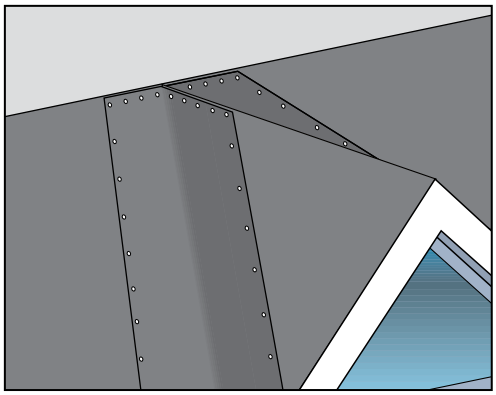


Figure 3

EAVES AND EAVE SHINGLES

At the eaves, the first components installed over the drip edges are the eaves shingles. Katepal Eaves and Ridge Shingle is suitable for use as-is for eaves or cut into three parts for ridge applications. Remove the protective film on the adhesive side and press the eaves shingles firmly into place so that it adheres tightly to both the drip edge and the substrate, leaving approximately 10 mm of the drip edge exposed. Separate nailing of the eaves shingles is not required, as the nails used for the first row of roofing shingles will also penetrate and secure the eaves shingles.

The eaves shingles are installed end-to-end with butt joints, tightly and without gaps. The exact alignment of the shingles is determined by the starting point of the roof shingle installation. With Katepal's Rocky, Katrilli, Classic KL, Jazzy, Ambient and 3T shingle products, installation begins from the centre of the roof slope, and the tips of the first row of shingles should cover the end joints and perforations of the eaves shingles, as shown in Figure 1.

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 in Figure 2. See the instructions on page 23 for working around a veranda or similar structure.

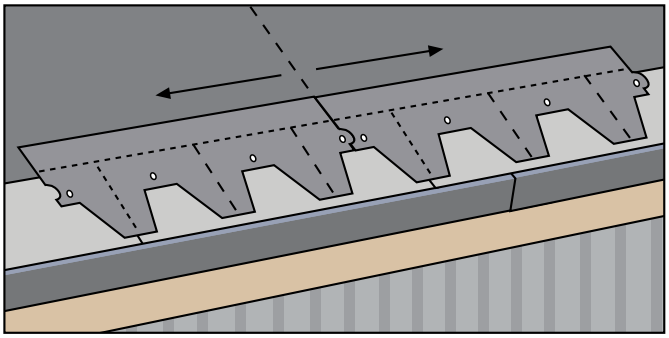
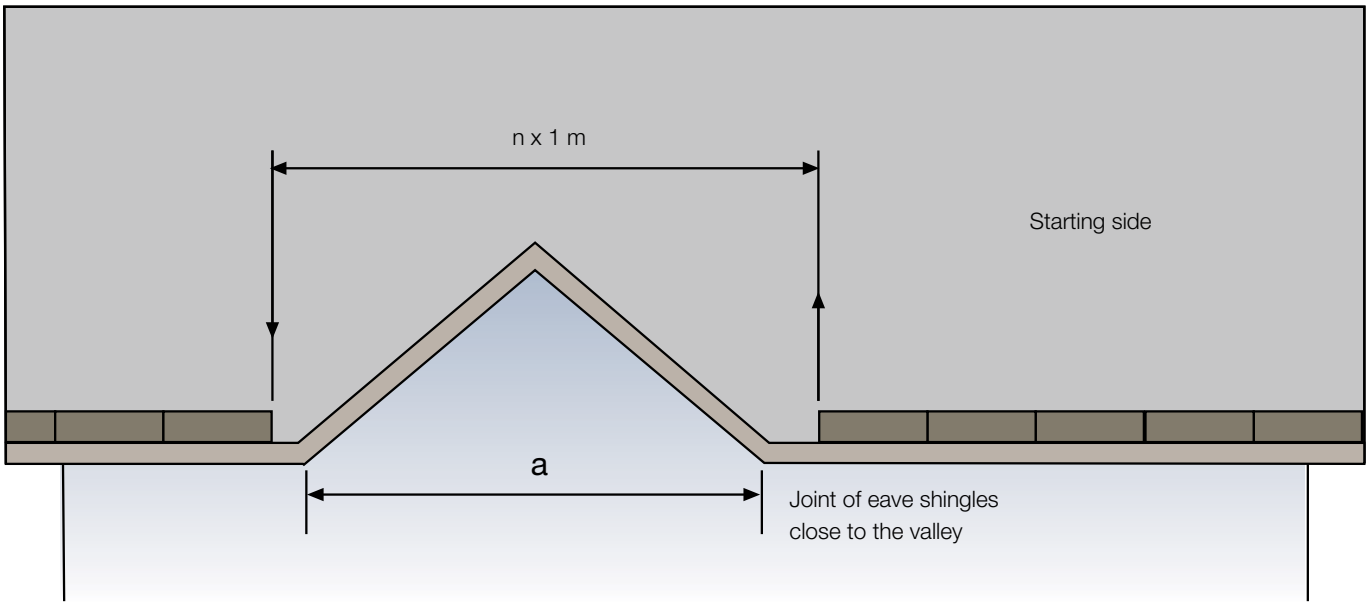


Figure 1.



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

Figure 2

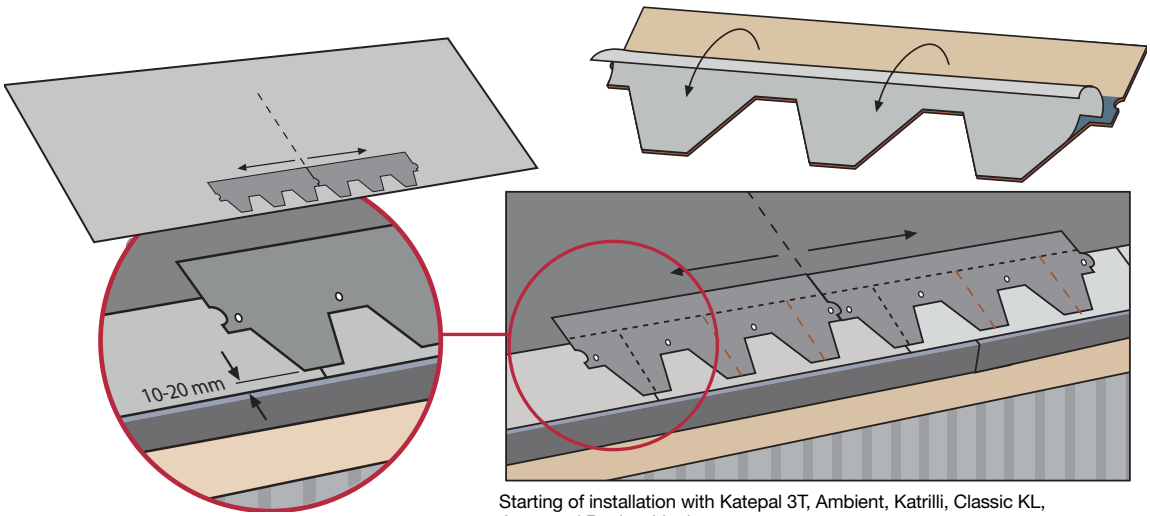
ROOFING SHINGLES

Begin installling the roofing shingles at the eaves, starting from the centre of the roof slope, so that the tips of the shingles cover the butt joints and folds of the eaves shingles. The shingles are installed horizontally with butt joints. Remove the protective film from the adhesive strip and align the bottom edge of the first row of shingle tips 10–20 mm above the bottom edge of the eaves shingle. This ensures a clean and straight eaves line that looks good from ground level.

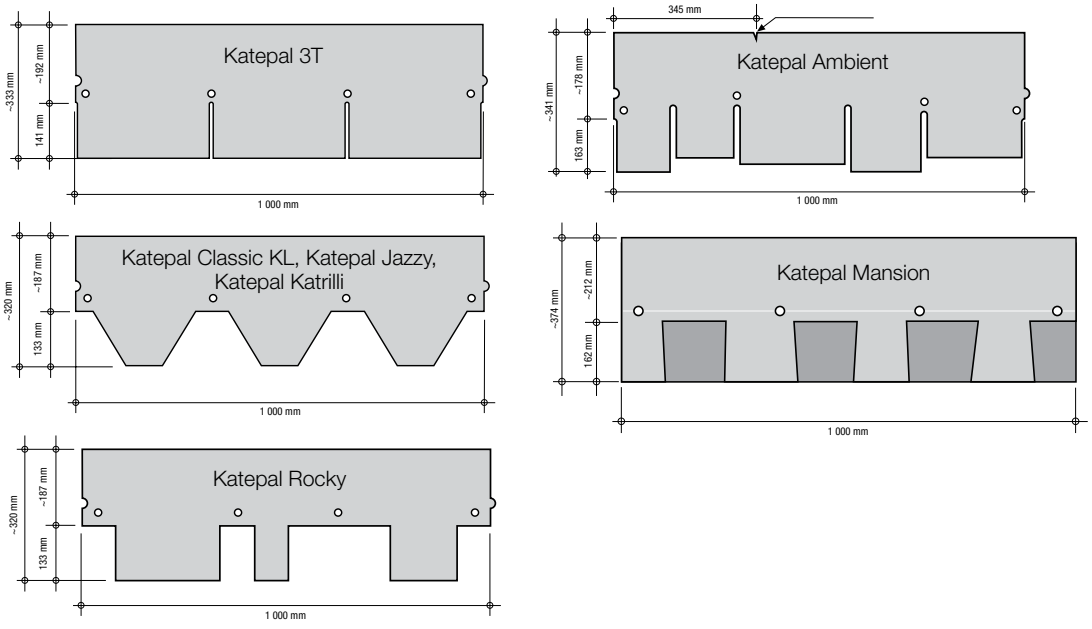
Each roofing shingle is fastened with four roofing nails, which corresponds to approximately 28 nails per square metre. Place the nails midway up the shingle, as shown in the pictures below. Fastening can be done manually using a hammer or with a pneumatic nail gun. The nails must penetrate through the wooden roof decking. If visible nail tips are undesirable or potentially hazardous — for example, in playhouses or habitable attics — the shingles can instead be fastened with appropriately sized, wide and flat-headed screws with sharp points, such as sheet metal screws or KFR screws.

The next rows of shingles should be installed so that they overlap the previous row according to the overlap instructions specific to the shingle product (see detailed instructions on page 4). The tips of the shingles must always cover the nails of the underlying row, so that nail heads remain hidden in the finished roof. Even though the shingles self-bond to one another, they must always be mechanically fastened with roofing nails to the substrate. In certain areas — such as valleys (onto the valley membrane), gable eaves (onto drip edges or onto the underlay membrane in raised eave construction), and around roof penetrations (onto the flashing flange) — the shingles must be carefully glued to the substrate using Katepal K-36 sealing compound. All glued areas should be 100 mm wide with a 0.5–1 mm adhesive thickness.

During installation, shingles should be randomly mixed from 4–5 different packages to even out any minor colour variations. Shingles from different manufacturing batches must not be installed on the same roof slope. If this is unavoidable, any colour differences must be carefully monitored and compensated for throughout the installation process.



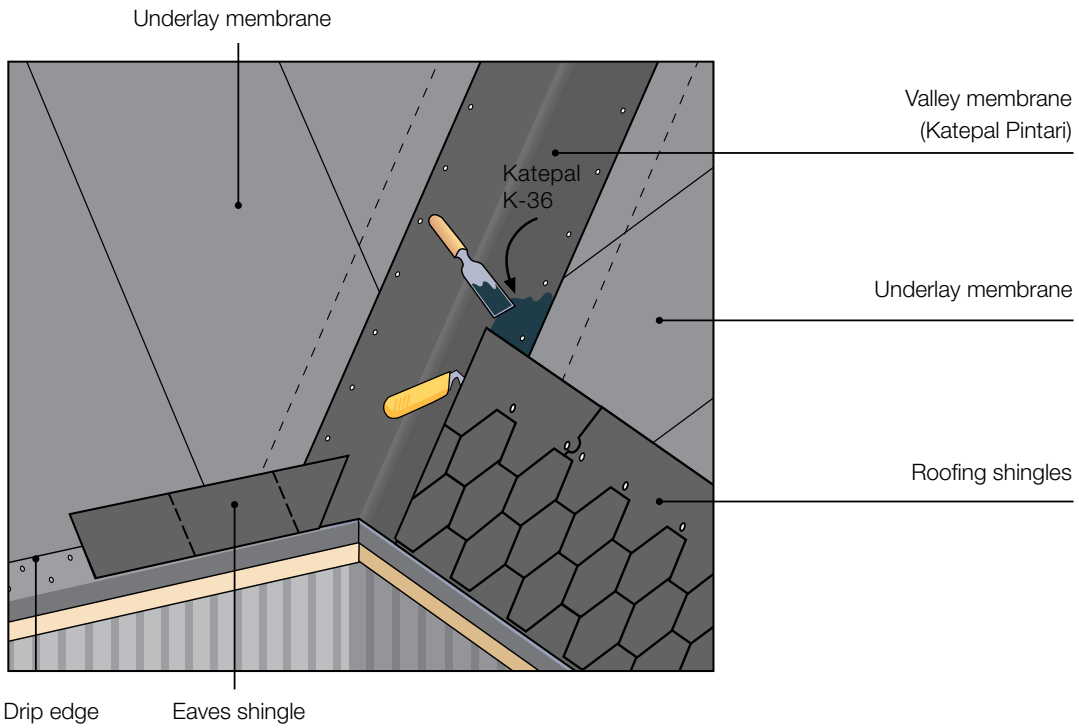
Starting of installation with Katepal 3T, Ambient, Katrilli, Classic KL, Jazzy and Rocky shingles

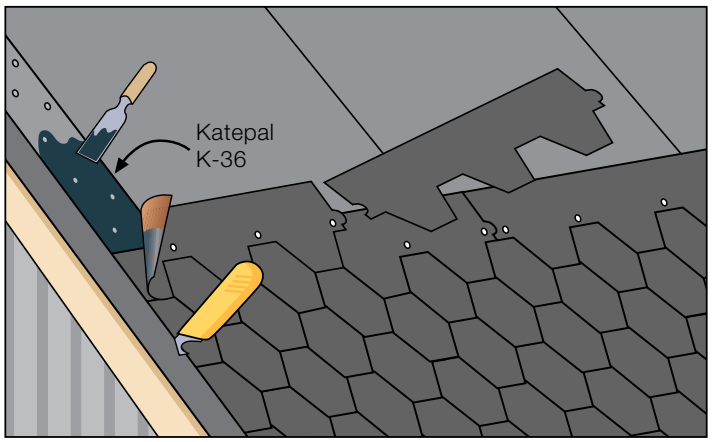


VALLEYS AND GABLE ENDS

In valleys, the ends of the roofing shingles should be cut along the direction of the valley so that the shingles extend at least 150 mm over the valley membrane. A visible strip of the valley membrane, 100–400 mm wide, should be left at the centre of the valley. Do not use nails to fix the shingles to the valley membrane; instead, use Katepal K-36 sealing compound, with a bonding width of at least 100 mm along the cut edges. The ends of the shingles must be glued especially carefully to prevent water from seeping under the shingles.

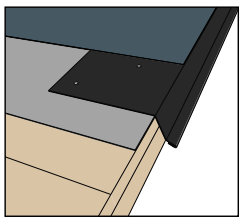
At gable eaves, the shingles should be cut along the eaves line and their ends should be glued to the drip edge flashing using Katepal K-36 sealing compound, following the same principle as on the rest of the roof. If a raised gable eaves structure is used, the shingle ends are glued to the underlay membrane over the raised edge batten. Special care must be taken to ensure that the shingles sit tightly and evenly at the joint between the roof deck and the raised batten. Finally, a custom-cut gable flashing should be installed over the edge.

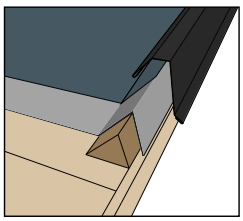




Gable end flashings

Alternative ways to build the gable eave and install verge sheets.


Katepal Drip edge


Katepal Verge sheet

INSTALLATION OF MANSION ROOFING SHINGLES

During installation, roofing shingles must be mixed randomly from 4–5 different packages to even out any potential colour variation. Shingles from different production batches should not be installed on the same roof slope. If this cannot be avoided, special attention must be paid throughout the installation to monitor and compensate for colour differences.

The first eaves shingle should be shortened by 150 mm as shown in Figure 1, while the remaining eaves shingles are installed normally. Installation of the roofing shingles begins at the gable eave, aligning with the lower edge of the eaves shingle as shown in Figure 2.

The protective plastic film on the underside of the shingles is removed by pulling it from the centre along the lower edge of the shingle. Each shingle should be fastened with four nails placed along the designated nailing line, never at the top edge of the shingle. Nails must penetrate through the roof decking.

Shingles should be installed row by row, ensuring that the rows remain straight. Alignment is based on the lower edge of the shingles, as the height of the upper edge may vary slightly. At the gable eaves, shingles should be cut along the roof edge line and the ends are glued down using Katepal K-36 sealing compound.

Cutting should be done as shown in Figure 3: the first shingle in the second row should be shortened by 150 mm, and the first shingle in the third row shortened by 270 mm. The fourth row begins with a 270 mm piece, and the fifth row with a 150 mm piece. After these, full shingles should be used. The sixth row begins identically to the first, and this five-row staggered pattern is repeated across the entire roof slope.

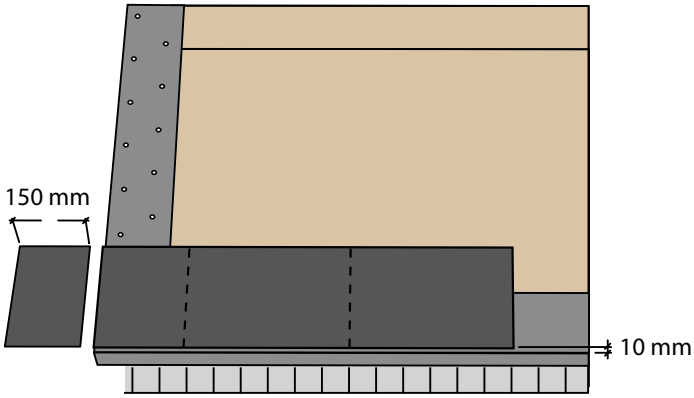


Figure 1

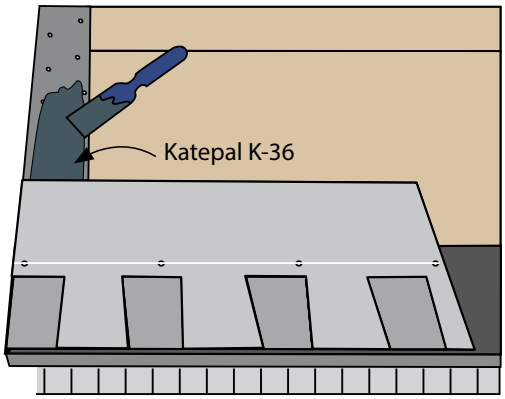


Figure 2

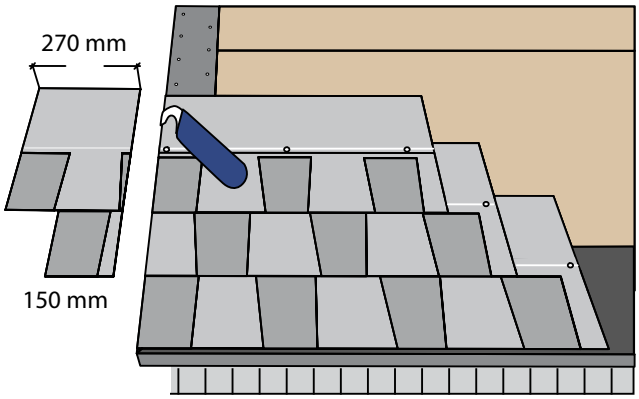


Figure 3

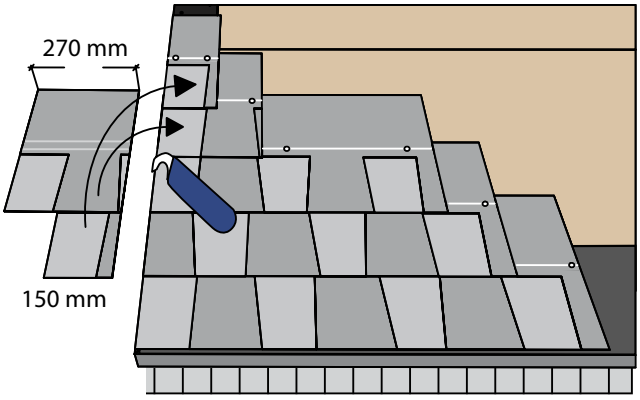


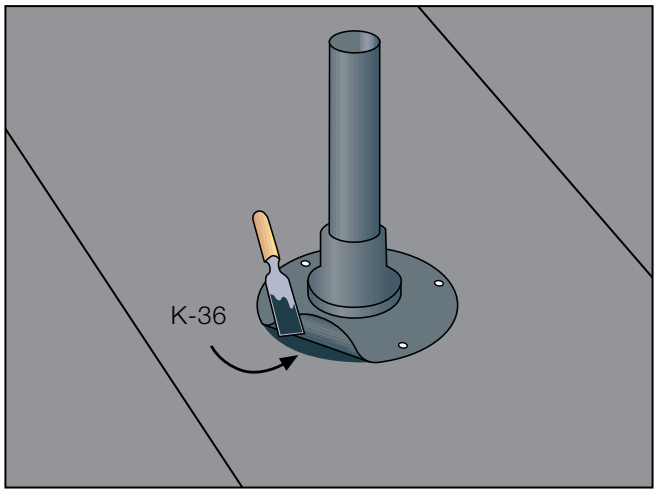
Figure 4

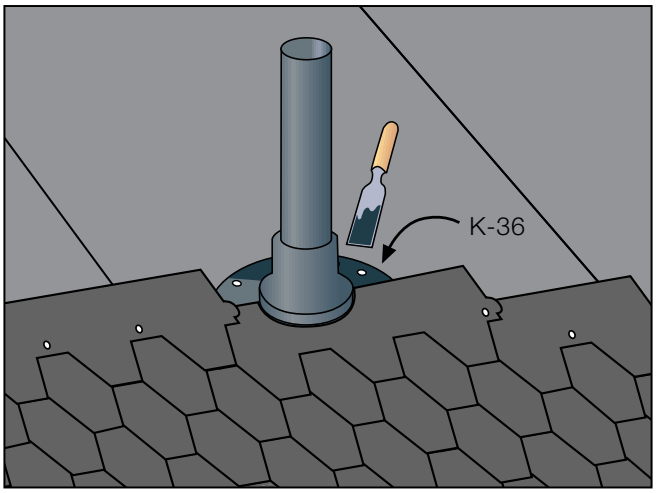
PASS-THROUGHS

SEALING PASS-THROUGHS

For round roof penetrations, such as ventilation pipes or sewer vent stacks, factory-made EPDM rubber pipe flanges should be used. The flange is slid over the pipe, adhered to the underlay membrane using Katepal K-36 sealing compound according to the manufacturer's instructions, and fastened to the substrate with 4–5 mechanical fasteners to prevent slippage.

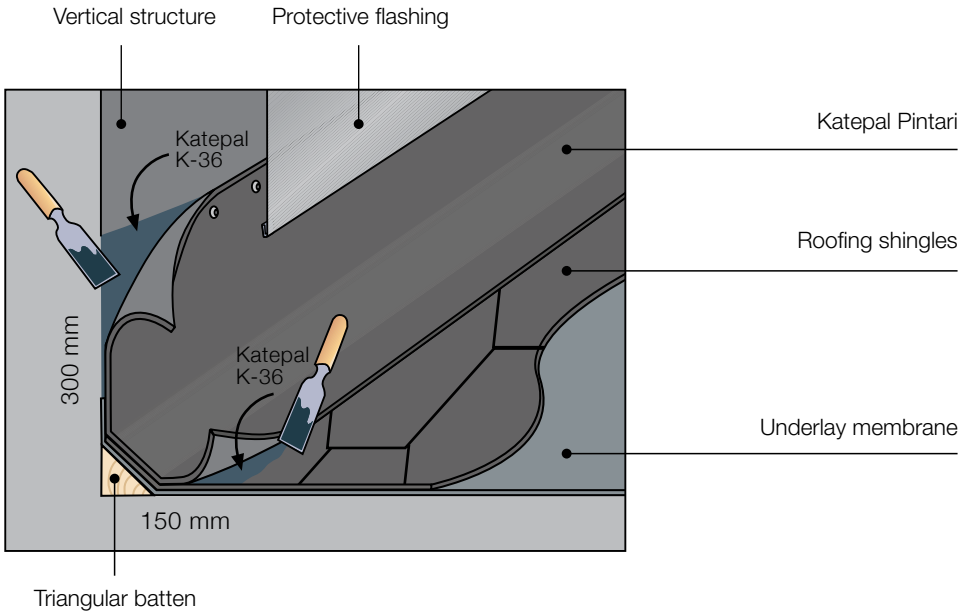
Roofing shingles should be cut to fit tightly around the raised EPDM flange and carefully glued to it. If there are any gaps or recesses between the shingles and the flashing, they must be filled with either Katepal K-36 sealing compound or Katepal Seal adhesive and sealant compound. If other types of products are used, the same basic installation principles apply, but take care to note any specific installation instructions provided by the flange manufacturer.





UPTURNS

At wall junctions and around elements such as chimneys, the roof waterproofing must be extended onto the vertical surface. This upturn must reach at least 300 mm above the finished roof surface on the vertical wall and 150 mm horizontally on the roof surface. Where the wall meets the roof, a triangular batten must be installed—either a wooden triangular batten or the Katepal bitumen triangular batten. The underlay membrane and roofing shingles should be extended to the top edge of the batten or approximately 50 mm up the wall surface. The actual upturn is created using Katepal Pintari (a surface membrane), which is fully adhered to both the vertical wall and the roof surface with Katepal K-36 sealing compound. On the wall surface, the upper edge of the upturn should also be secured with nails. Finally, the top edge of the upturn must be protected by either wall cladding or metal flashing.



CHIMNEY UPTURNS

Once the roofing installation has reached the upper edge of a chimney or other large roof penetration, the vertical upturns should be cut from Katepal Pintari membrane as shown in picture below, and adhered in the numbered order using Katepal K-36 sealing compound. The membrane must be bonded along the entire width of the chimney and should overlap the roofing shingles by approximately 15 cm.

Above the chimney, the topmost upturn flap should be installed under the roofing shingles to ensure proper water runoff.

Before installing the upturn pieces, install a triangular batten at the base of the chimney or penetration using, for example, a triangular wooden fillet. The actual upturn is made from a separate strip of Katepal Pintari, which must extend at least 30 cm up the chimney's vertical surface and approximately 15 cm over the roofing shingles.

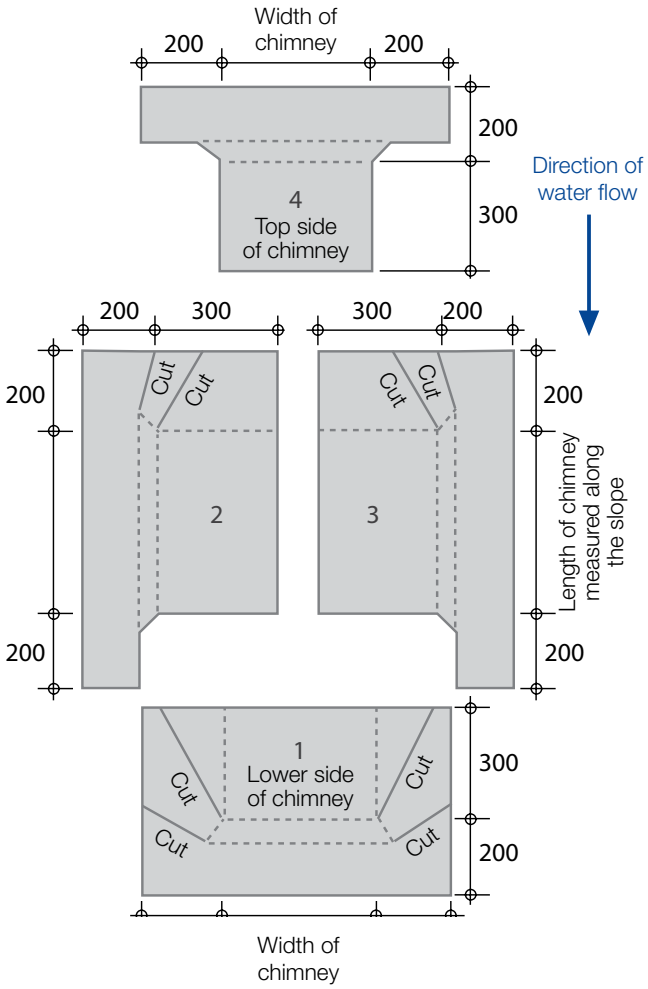
The upper edge of each upturn is fastened, for example, by nailing it to the chimneys brick joints. All corners and overlaps must be carefully sealed with Katepal K-36 sealing compound, and lastly the entire upturn area should be protected with sheet metal flashing.

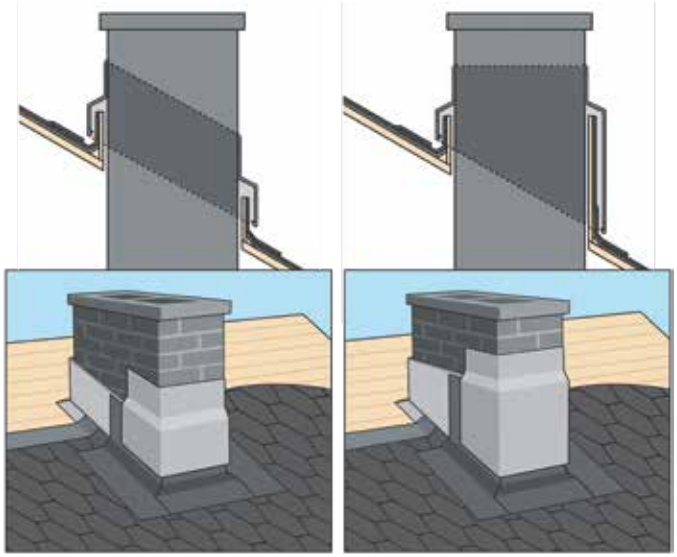
CHIMNEY UPTURNS IN LOG STRUCTURES

In log structures such as houses or cabins, it must be taken into account that the roof structure will settle relative to a masonry chimney as the building frame compresses over time. For this reason, the waterproofing membranes must not be fixed directly to the chimney. Instead, a separate frame must be constructed around the chimney, against which the membranes can be upturned.

The chimney flashing should be attached directly to the chimney and must overlap the vertical upturn membranes by at least 200 mm. However, the flashing must not be fixed to the roof surface or the upturn membranes, to ensure that the frame and upturns can settle along with the roof without damage.

When properly installed, the chimney flashing protects the top edge of the upturn, the chimney surface and the gap between them, even as the building undergoes natural settling.



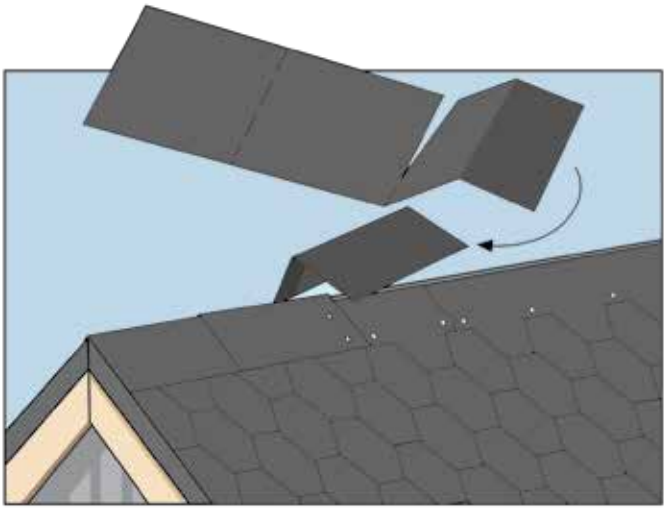


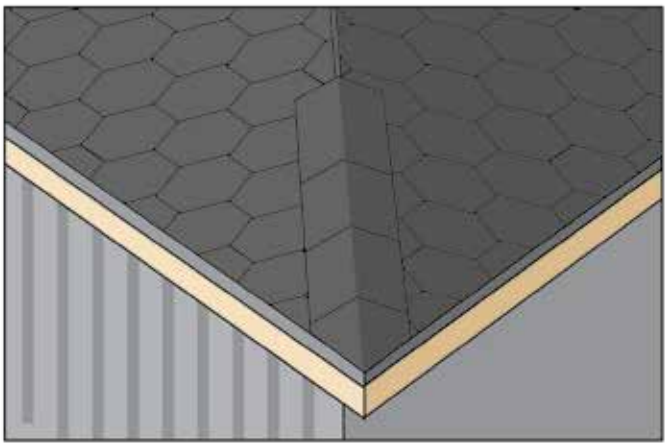
RIDGE AND RIDGE SHINGLES

At the ridge, the top row of roofing shingles should be cut along the ridge line and should not be bent over the ridge. Katepal Ridge and Eaves Shingles can be used to create ridge shingles by folding and tearing along the pre-perforated lines, resulting in three separate ridge shingles. On pitched roofs, installation begins from one end of the ridge. The adhesive edge of the first ridge shingle should be placed over the top row of roofing shingles, aligning with the outer edge of the eaves. The shingle is then nailed through the non-adhesive edge using four nails, fixed to the underlying roof decking.

The ridge shingles should be installed overlapping halfway across the ridge, so that the adhesive underside of the next piece covers the previous one by approx. 50 mm, concealing the nail heads. Installation continues along the full length of the ridge in this manner. The final ridge shingle should be fixed without nails, using Katepal K-36 sealing compound on its non-adhesive side.

On hipped roofs, installation starts from the lower ends of the hips (external corners), and the main ridge sections are installed last. At the junctions where hips meet the ridge, the final hip shingles should be bent to prevent rainwater ingress and the ridge shingles should overlap the hip pieces. Katepal K-36 sealing compound is used in these critical areas to ensure a secure seal. As an alternative, the Katepal Self-Adhesive Strip, which is 33 cm wide with a fully adhesive underside, may be used for ridge detailing.





SPECIAL ROOF PARTS

PENETRATION SEALS

Factory-made EPDM rubber seals should be installed on top of the underlay membrane and roofing shingles carefully glued onto the flange of the seal. The seal is fastened around the penetration pipe using a metal clamp, tightened at a height where the seal does not lift the shingles if the pipe moves. This is especially important in log-framed buildings, where structural settling may occur over time. Katepal recommends using round pipe penetrations.

UNDERPRESSURE VENTS

Plastic underpressure vents are most commonly used and are typically placed on or near the ridge. Vents are available in ridge-style, as well as in versions with straight or angled flanges for different roof pitches. They are installed on top of the underlay membrane, similar to other penetration components. An opening slightly larger than the vent base should be cut into the roofing shingles, which are then carefully glued onto the vent flange. The size of the vent (pipe diameter) should be selected based on the ventilation needs of the structure.

RIDGE VENTS

If ridge ventilation on a pitched roof cannot be implemented using the previously described methods, factory-made ridge vents may be used. These are recommended for the full length of the ridge. Typical applications include renovation of log structures where proper ridge ventilation was not installed during construction.

It is essential to ensure that air can exit at the top of roof truss bay. During installation, the old bitumen roofing and roof decking should be removed along the ridge for approximately 100 mm width. Ridge vents should be installed according to the manufacturer's instructions. The joint between the old roofing and the ridge vents is sealed with Katepal K-36 sealing compound or Katepal Seal adhesive and sealing compound. Finally, Katepal Ridge & Eaves Shingles or the Katepal Self-Adhesive Strip should be installed over the ridge vent.

WALKWAYS, SOLAR PANEL MOUNTS, ETC.

For walkways, ladders, solar panel mounting brackets and other roof-specific accessories, always follow the manufacturer's installation guidelines. Special attention must be paid to the waterproofing of all fastenings that penetrate the roofing to ensure complete watertightness under all conditions.

SNOW GUARDS

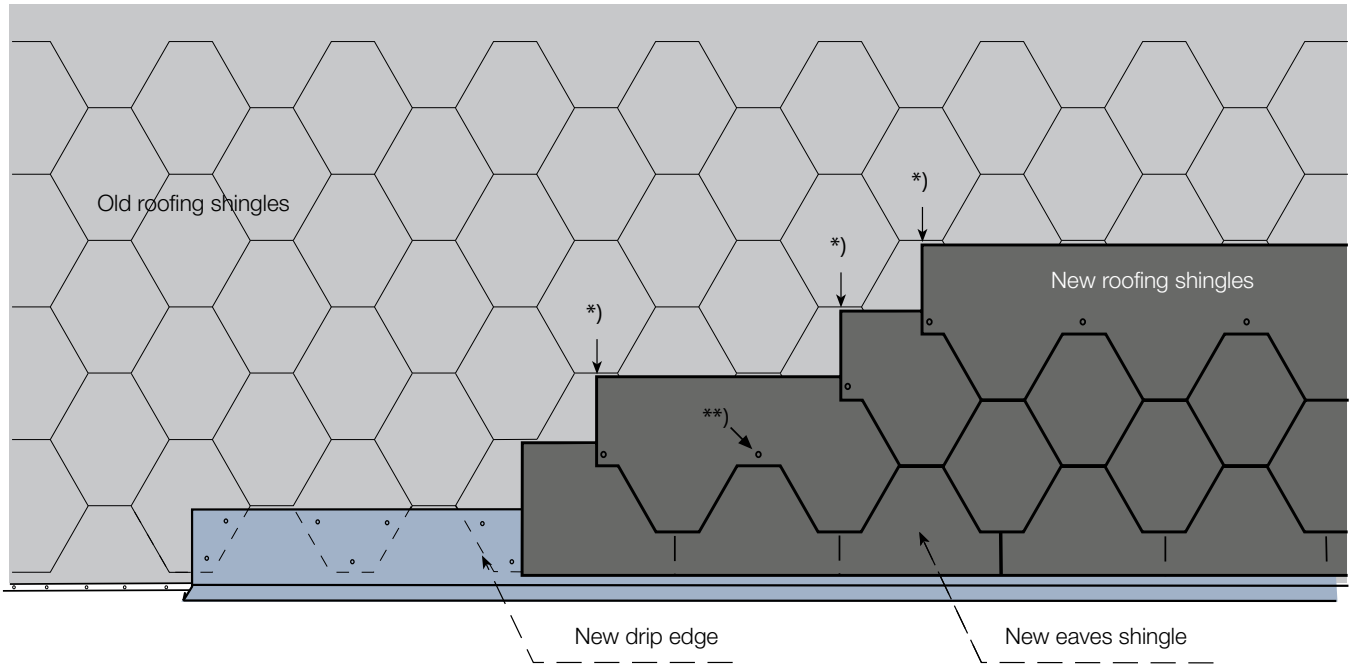
Bitumen roofing shingles with a mineral granule surface typically do not require snow guards, as snow masses do not easily slide off—even on steep roofs. However, if snow guards are installed, it is critical to ensure that all fastening points are carefully sealed to maintain water tightness.

RENOVATION OF AN OLD BITUMEN SHINGLE ROOF

Renovating an old roof made with bitumen shingles can be done in two ways. The faster and more cost-effective method is to install new shingles directly over the old ones. The more thorough option involves removing the old shingles and underlay membranes entirely, after which the decking is replaced or fixed if necessary, followed by the installation of a new underlay and new shingles.

When installing new shingles over an existing shingle roof, it is important to follow the correct overlapping instructions. New shingles of the same type (Jazzy, Katrilli or Classic KL by Katepal) can be installed over old shingles if the following conditions are met:

- The underlying roof decking must be in good condition, and ventilation of the roof must be functioning effectively.
- The exposure (visible portion) of the new shingles must closely match that of the old ones; a maximum deviation of 10 mm is allowed.
- For roofs with a slope less than 1:3, there must be an underlay membrane beneath the old shingle layer.
- For roofs with a slope of 1:3 or steeper, no underlay membrane is required under the existing shingle layer.
- The new shingles must be fastened with roofing nails that penetrate through the decking; a minimum nail length of 35 mm is recommended.
- The installation must follow the accompanying overlap guide to ensure proper staggering of the shingle joints and correct alignment of nail positions. Nails in the new shingles must not align with the cutouts of the old shingle pattern.
- Before installing the new shingle layer, all old ridge shingles must be removed from the ridge and hip areas of the roof.



**) 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 positioned in the middle of the tip of the old roofing shingles.*

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

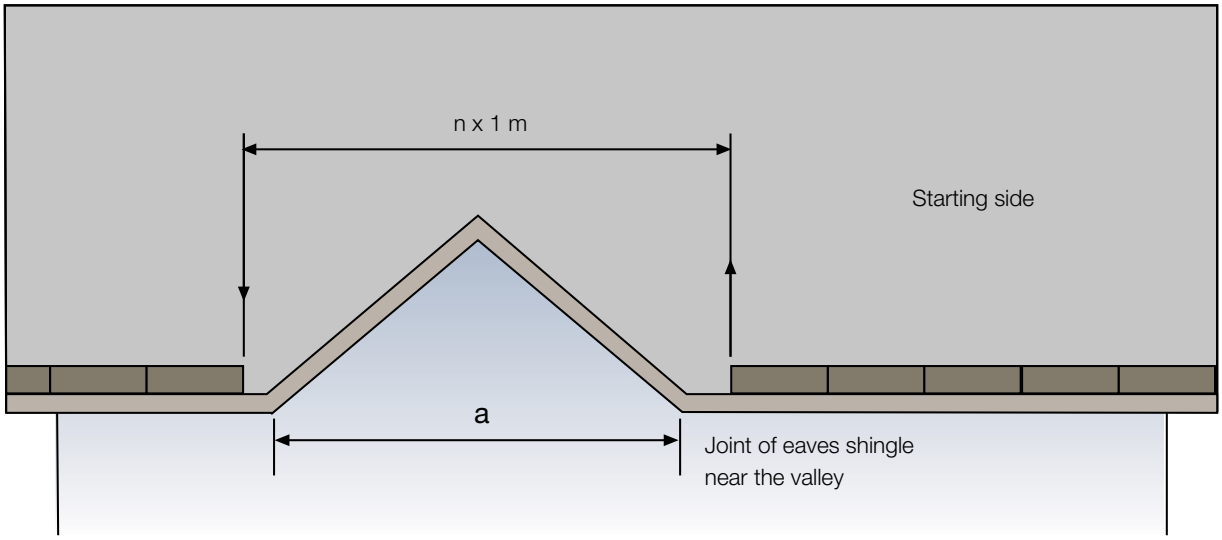
If the roof being renovated includes a valley, the renovation begins by covering the valley area. First, a strip of Katepal Pintari membrane should be applied into the valley and adhered at its edges on top of the existing shingle layer, as described on page 13. Special attention must be paid to ensure that the valley membrane sits tightly and smoothly along the bottom of the valley.

New shingles are installed over the valley membrane as described on page 16 so that they overlap the new valley membrane by at least 150 mm. However, it must be noted that at the edges of the valley, the roofing structure will become thicker, as the new shingle and membrane layers will overlap with the existing ones.

SPECIAL INSTRUCTIONS

ROOFING AROUND A PORCH OR SIMILAR STRUCTURE

If a porch, balcony or similar structure is located on the roof slope in such a way that the roofing, installed from the lower eaves, continues above the structure, the alignment of the roofing shingles and eaves strips must be carefully planned. On both sides of the structure—measured 'across' the top of the structure—the distance between the vertical seams of the eaves strips must match the repeat pattern of the shingles. For the Classic KL, Jazzy, Katrilli and 3T products, this distance must be divisible by 1/3 metre, and for the Rocky, Ambient and Mansion products, the distance must be exactly 1000 mm.

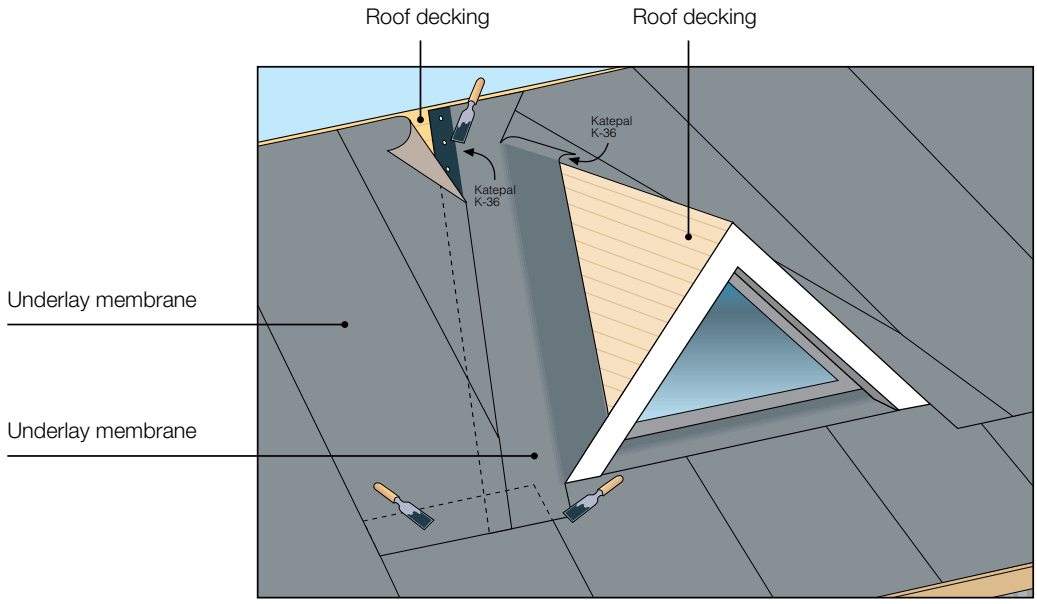


In the illustration, n = (a + 1), rounded up to the next whole number in metres.
For example, if a = 3.5 m, then n = 5.

MID-SLOPE INTERNAL VALLEY (e.g., roof lantern)

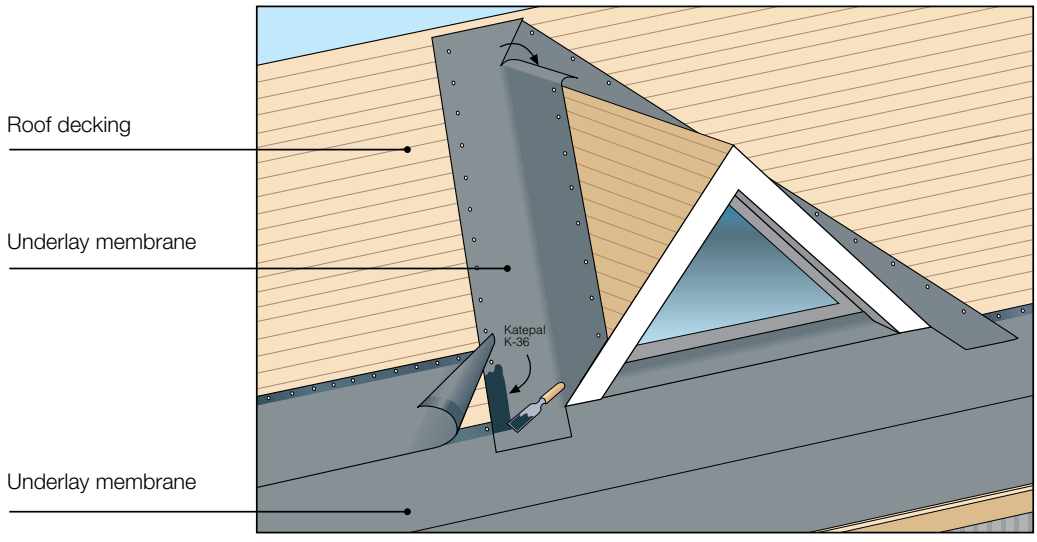
Vertical installation

If the lower end of the internal valley is not located at the eaves but instead on the roof slope—such as in connection with a roof lantern—the underlay membrane should first be installed on both sides of the roof lantern and below it. After this, an underlay membrane strip is installed along the valley line, with its lower edge overlapping the previously installed underlay membranes. The underlay membranes above the roof lantern must overlap the valley membrane by at least 150 mm. All overlaps of underlay membranes in the valley area must be carefully bonded using Katepal K-36 sealing compound.



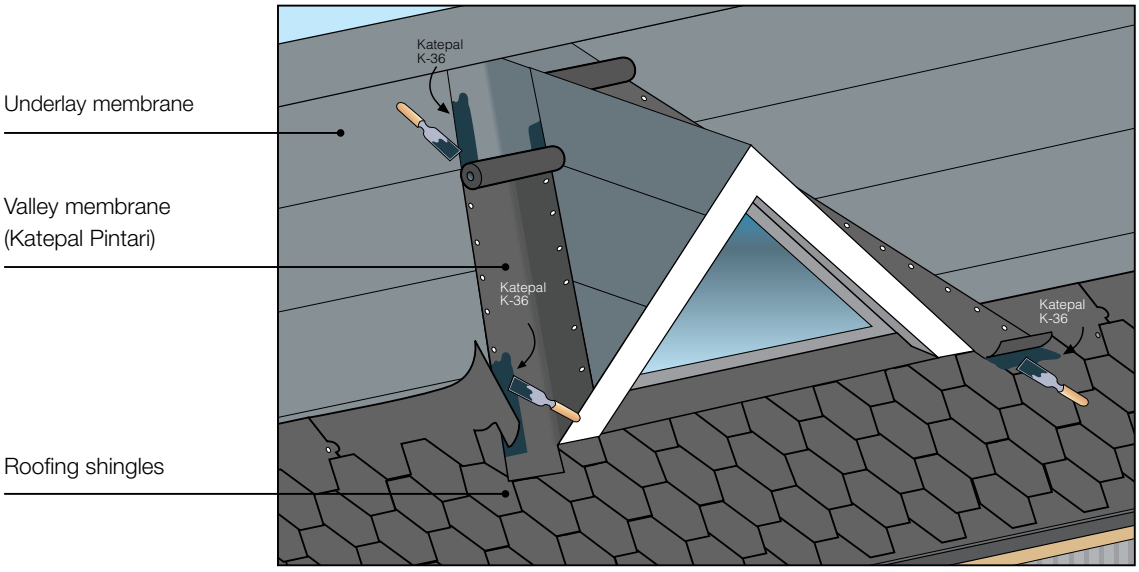
Horizontal installation

If the lower end of the internal valley is not located at the eaves but on the roof slope, the underlay membrane should be installed in the internal valley only when the underlay installation has reached the level of the valley's lower end. The lower edge of the underlay membrane at the bottom of the internal valley should be overlapped onto the underlying underlay membranes by at least 150 mm. After this, the installation of the underlay membranes on the main roof slope can continue; these membranes must overlap the internal valley underlay membrane by at least 150 mm. All overlaps of the underlay membranes in the internal valley area must be carefully sealed with Katepal K-36 sealing compound.



Installing roofing shingles

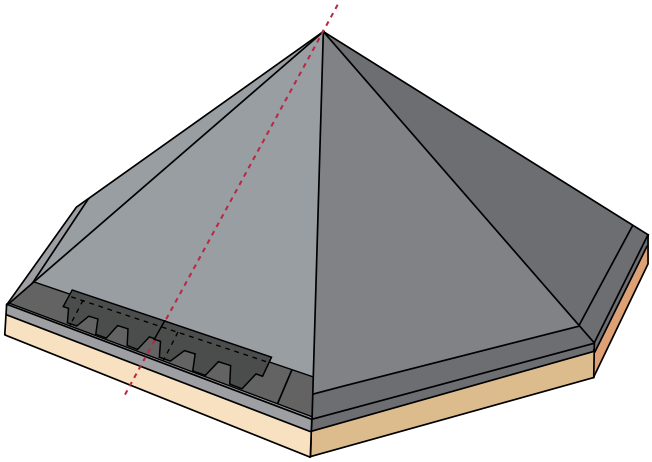
Roofing shingles should be installed starting from the lower eaves up to the level of the lower edge of the internal valley. After this, the internal valley membrane (Katepal Pintari) is installed so that its lower edge overlaps the shingles by 150 mm. The lower edge of the internal valley membrane should be carefully glued onto the shingles with Katepal K-36 sealing compound. The installation of the roofing shingles should then continue so that they overlap the internal valley membrane as usual, are cut along the valley line and glued onto the internal valley membrane with Katepal K-36 sealing compound.

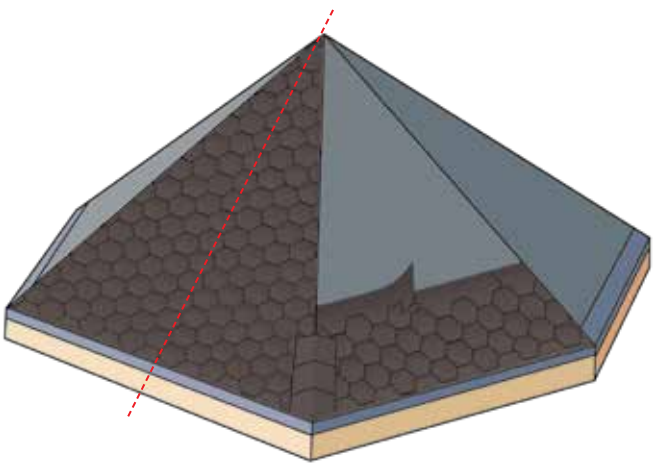


CONSTRUCTION OF A POLYGONAL CANOPY (e.g., grill shelters, lean-tos, and similar structures)

For the installation of Katepal 3T, Classic KL, Jazzy and Katrilli roofing shingles, it is recommended to draw an alignment line from the centre of the lower eaves directly to the ridge point. The joint between the shingles in the first row should be aligned horizontally with this line. As the installation continues upward, every second row joint should fall on the same line, ensuring a symmetrical roof pattern on all slopes.

The pattern of Katepal Ambient, Mansion and Rocky roofing shingles is not symmetrical, so precise alignment is not required for these products. Each triangular roof slope should be covered separately in the same manner as the gable end slope of a hip roof. The external ridge should be covered with ridge shingles, and on smaller structures, ridge shingles can be cut if necessary or alternatively Katepal Self-Adhesive Strip can be used.

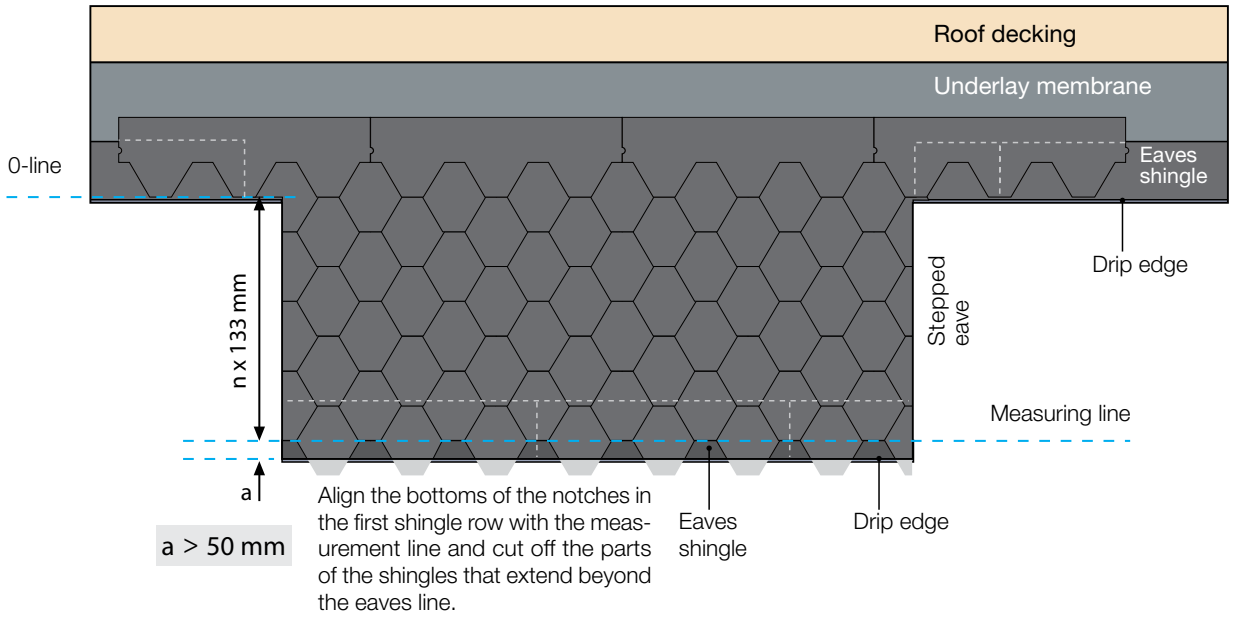




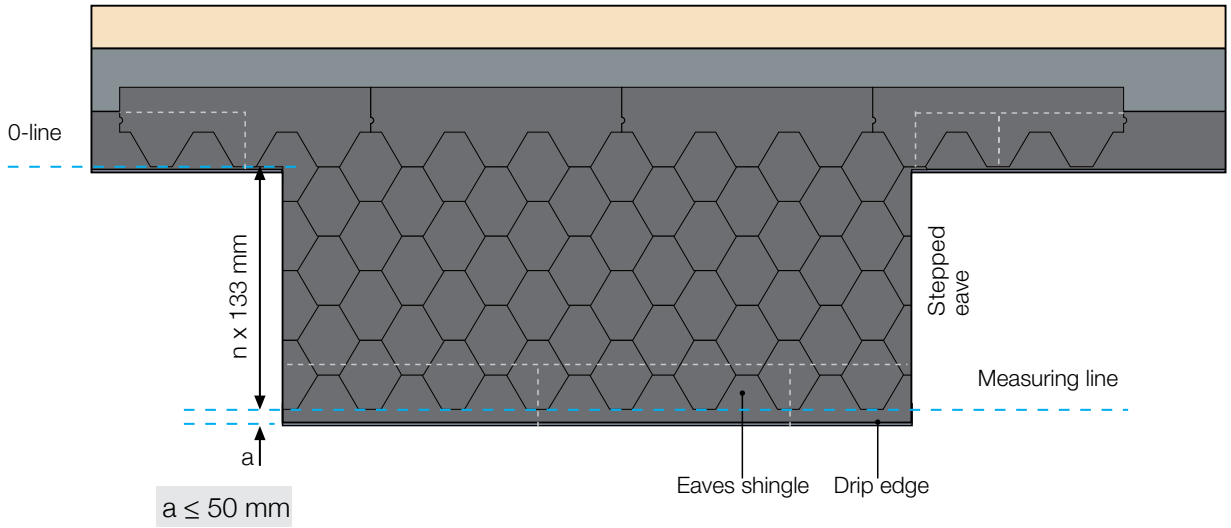
STARTING THE LOWER EAVES AT A BAY WINDOW OR STEPPED EAVE

The lower edge of a bay window or a projection located in the middle or at one edge of the roof slope should be dimensioned for roofing shingles so that the main roof eaves line is taken as the zero line. From this zero line, the shingle rows are counted downwards, n rows (133 mm/row), and the required sized pieces cut off from the tips of the shingles in the lowest shingle row. For Ambient shingles, the row height is 128 mm, and for Mansion shingles, it is 162 mm per row.

If the measurement from the zero line to the bay window or projection is divisible by 133 mm, the installation of the roofing shingles can start at the lower edge of the projection. When the work reaches the zero line, the eaves shingles are installed according to the roofing shingle layout.



If the measurement ‘a’ is less than 50 mm, the first shingle row can be started upward from the measurement line (see image below).



Laterally, it must be ensured that the eaves shingles do not align at the bay window tip or at the corresponding points on the lower eaves of the roof slope. This is important as it ensures that the perforation points remain hidden beneath the tips of the roofing shingles. For Classic KL, Jazzy, Katrilli, and 3T shingles, the lateral offset is 166 mm per row; for Rocky, 83 mm per row; and for Ambient, 345 mm per row.

ROOF MAINTENANCE

Bitumen is a low-maintenance and durable roofing material. It does not require painting or coating; regular inspection and cleaning are usually sufficient as maintenance measures.

The roof should be inspected regularly, at least twice a year – in spring and autumn. Debris such as leaves, moss and lichen should be removed by gently brushing, taking care not to damage the roofing surface. Branches and other objects that may have fallen onto the roof should be removed by hand.

If necessary, Katepal K-10 roof wash can be used to remove moss and lichen. Gently brush off any loosely attached growth before spraying Katepal K-10 roof wash onto the remaining growth and allow it to take effect according to the instructions. When the growth changes colour, it can be carefully brushed off. Some growth will also naturally wash away with rain and snow. Care must always be taken during brushing not to damage the granule surface of the roofing shingles. Follow the product instructions carefully.

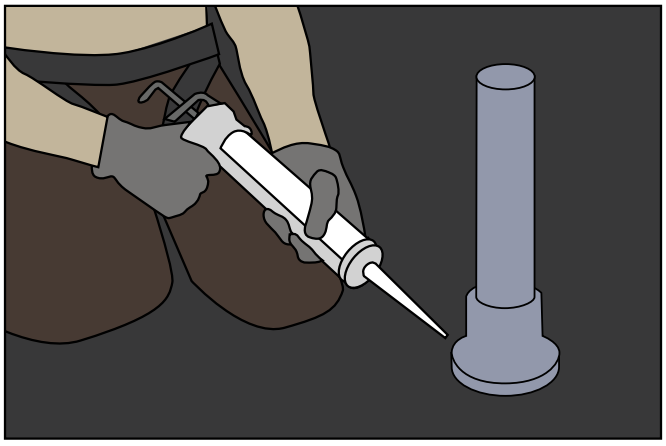
Pressure washers must not be used for roof cleaning as they can damage the adhesive surfaces of the shingles and cause leaks.

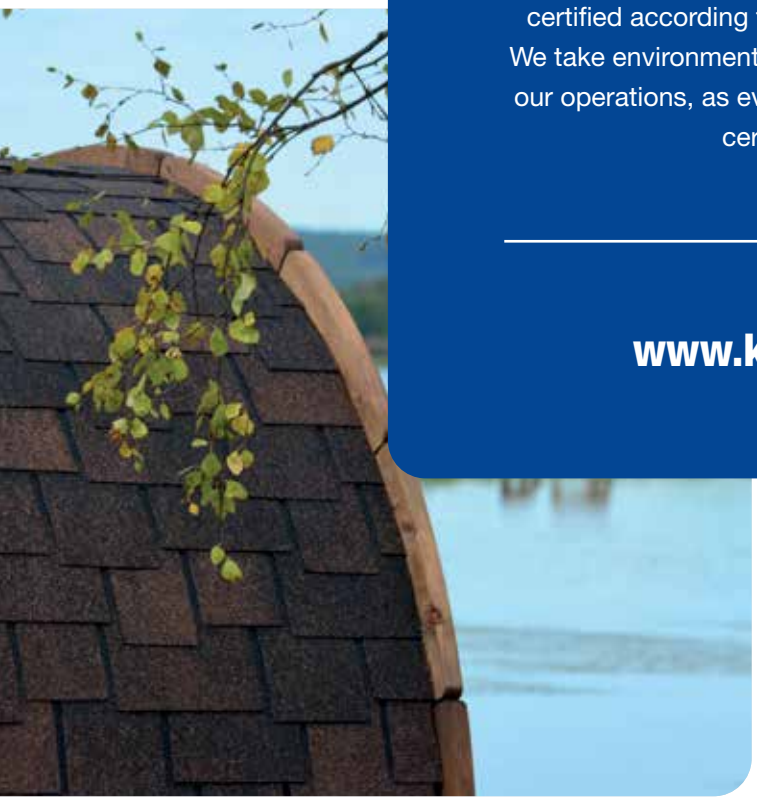
It is important to ensure that water can drain freely from the roof. Rain gutters should be cleaned when necessary. Snow removal should only be done if absolutely necessary. A snow layer of 10–20 cm should be left on the roof, and the roofing surface must not be damaged by shovels or other tools. Ice must not be removed mechanically.

When working on the roof, ensure that the roof surface is always properly protected. If repairs are needed, they should be carried out promptly to prevent further damage. Seams and penetrations can be sealed with Katepal K-36 sealing compound as needed. For visible seals it is recommended to use Katepal Seal adhesive and sealing compound.

Unnecessary movement on the roof should be avoided. If you are unsure about how to proceed, consult Katepal's technical support team.

Ensure safe access on the roof with Katepal roof safety products.





Founded in 1949, Katepal Oy is one of Finland's leading manufacturers of bituminous roofing materials and bitumen products.

Our products are CE marked, which means they meet EU safety, health and environmental protection requirements including the requirements of the EU Construction Products Regulation. Our quality management system is certified according to the ISO 9001 standard. We take environmental values into account in all our operations, as evidenced by our ISO 14001 certification.

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