



# INSTALLATION GUIDELINES

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## ROOF SYSTEMS



## COVER PHOTO

**Product:** PREFA roof shingle

**Colour:** P.10 stone grey

**Photo:** PREFA | Croce & Wir

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This installation manual contains a set of guidelines for preparing and installing PREFA small-format products and is aimed solely at commercial users such as craftsmen, architects or installers. The included sketches provide assistance and information for the usual usage. We would like to point out that each construction project must be considered individually and checked for its specific requirements. In particular, the circumstances of individual cases in terms of legal or factual requirements must be taken into account: for example, issues related to the approvability of the project or fire safety regulations to be observed or the checking of external influences that may affect the property (e.g. in exposed locations with strong winds).

Neither this installation manual nor a statement from PREFA should be used to replace or modify the advice or design of an architect/designer responsible for a specific construction project or of the company implementing it: Only the service providers commissioned to supervise the construction project are in a position to decide how PREFA products are to be installed and used, while taking the specific local conditions of the individual case into account.

When drafting this installation manual, we have taken into account the current state of the art technology and product development. The use of the documents provided by PREFA, particularly this installation manual, does not constitute a contractual or quasi-contractual service on our part; liability for damages and further claims of any kind shall be expressly excluded. This shall not affect any liability arising from intent or gross negligence as well as liability in the event of injury to life, limb or health of a person. Claims under the Product Liability Act shall also remain unaffected.

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## NOTE

If you have any questions or for support, please contact PREFA's Product Technology department.

On our website [www.prefa.com](http://www.prefa.com), you can find all the information on our products, as well as a detailed description of our comprehensive range of services for certified specialists.

If you are interested in our installation videos or would like to sign up for the PREFA Academy, please ask your PREFA Advisor for a username and password to access our Login Area.



# TABLE OF CONTENTS

INTRODUCTION .....	1
TABLE OF CONTENTS .....	5
<b>GENERAL INFORMATION</b>	
Building physics .....	15
Ventilated roof build ups .....	15
Non-ventilated roof build up .....	28
Substructure .....	29
Separation layer .....	32
Layout .....	34
Checking the roof build up .....	35
Contact with other materials .....	36
Storage and transport .....	37
General information .....	38
Cleaning .....	39
Calculations .....	40
PREFA Academy .....	41
Installation videos .....	42
On-site training/support .....	42
Hand tools .....	43



# TABLE OF CONTENTS

## ROOF TILE

---

Roof tile .....	45
Layout .....	46
Division dimensions (lacing dimensions) .....	49
Installation and covering direction .....	50
Fastening .....	52
Replacing a roof tile .....	54
Installation area .....	56

## R.16 ROOF TILE

---

R.16 roof tile .....	59
Layout .....	60
Installation and covering direction .....	61
Fastening .....	62
Replacing an R.16 roof tile .....	63
Installation area .....	65

## ROOF SHINGLE

---

Roof shingle .....	67
Layout .....	68
Covering direction and fastening .....	69
Installation .....	70
Replacing a roof shingle .....	72
Installation area .....	73



# TABLE OF CONTENTS

## DS.19 SHINGLE

DS.19 shingle .....	75
Layout .....	76
Covering direction and fastening .....	77
Installation .....	78
Replacing a DS.19 shingle .....	80
Installation area .....	81

## RHOMBOID ROOF TILE 29×29

Rhomboid roof tile 29×29 .....	83
Layout .....	84
Division dimensions (lacing dimensions) .....	86
Covering direction and fastening .....	87
Installation .....	88
Replacing a 29×29 rhomboid roof tile .....	89
Installation area .....	90

## RHOMBOID ROOF TILE 44×44

Rhomboid roof tile 44×44 .....	93
Layout .....	94
Division dimensions (lacing dimensions) .....	96
Installation direction and fastening .....	97
Installation .....	98
Replacing a 44×44 rhomboid roof tile .....	99
Installation area .....	100



## FX.12 ROOF PANEL

---

FX.12 roof panel .....	103
Layout .....	104
Preparing the installation .....	104
Quantity calculation of FX.12 roof panel .....	106
Installation example .....	108
Installation and covering direction .....	111
Fastening .....	112
Replacing an FX.12 roof panel .....	113
Installation area .....	115



# TABLE OF CONTENTS

## ACCESSORY PRODUCTS

Starter strip and details .....	116
Starter strip for roof tile .....	116
Starter strip .....	118
Gable formation and lateral connection to roof penetrations .....	124
Valley detail .....	134
Hip and ridge detail .....	141
Construction of roof offset .....	152
Connection to an edge gutter (on-roof gutter) .....	160
Snow guard system .....	162
Snow guard .....	162
Pipe-style snow guard system .....	179
Mountain snow guard .....	190
Roof safety .....	198
Safety tread .....	198
Walkway support on one mount .....	204
Walkway support on two mounts .....	211
Roof anchor hook .....	218
Roof anchor hook with mounts .....	225
Penetrations and vents/edging .....	229
Chimney surroundings .....	229
Roof window edging .....	246
Roof hatch .....	255
Vent pipe cover and vent pipe .....	265
Frog mouth hatch and solar hatch .....	272
Base plate .....	277
PREFA groove beading machine and bending bench .....	285



## BUILDING PHYSICS

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### 1 VENTILATED ROOF BUILD UPS

Ventilated roof structures have been used for many decades and have proven themselves in all climatic conditions. We recommend designing PREFACE aluminium roofs with a ventilated substructure.

The roof covering and thermal insulation layers are separated by a ventilated gap. This has the advantage that accumulated moisture (condensation) is transported away again. In principle, the roof covering is ventilated (see figure 1).

Particularly suitable for converted attics because the circulating air has a positive effect on the room climate both in summer and in winter. However, the entire attic can be ventilated too (see figure 2).

In the case of ventilated roof structures, the ventilation height must be adapted to the applicable standards. A ventilation mesh from perforated aluminium installed at the eaves prevents insects and birds from entering.

When using ventilation mesh, the reduction of incoming air has to be considered. For the unobstructed function of the vented build up it is essential to have suitable openings on the bottom as well as on the top, e.g. vented ridge capping.

#### NOTE

roof build ups must be executed in accordance with structural-physical norms as well as with national regulations and requirements.



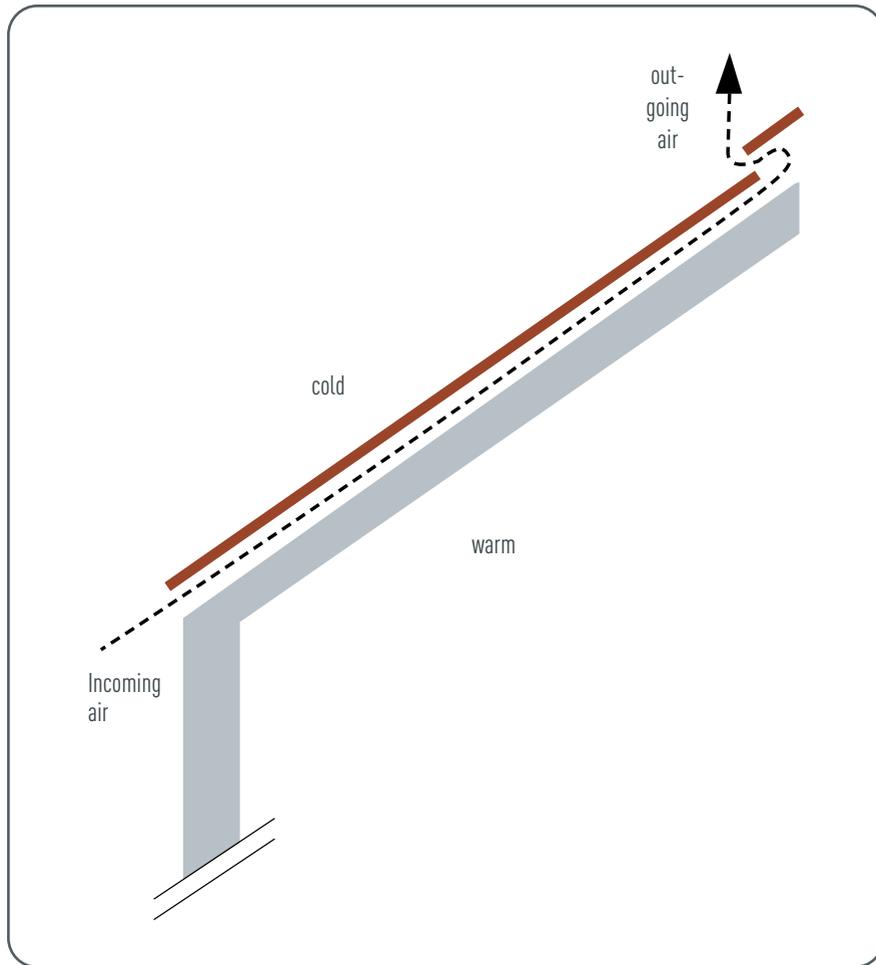


Figure 1 • Double skin roof build up

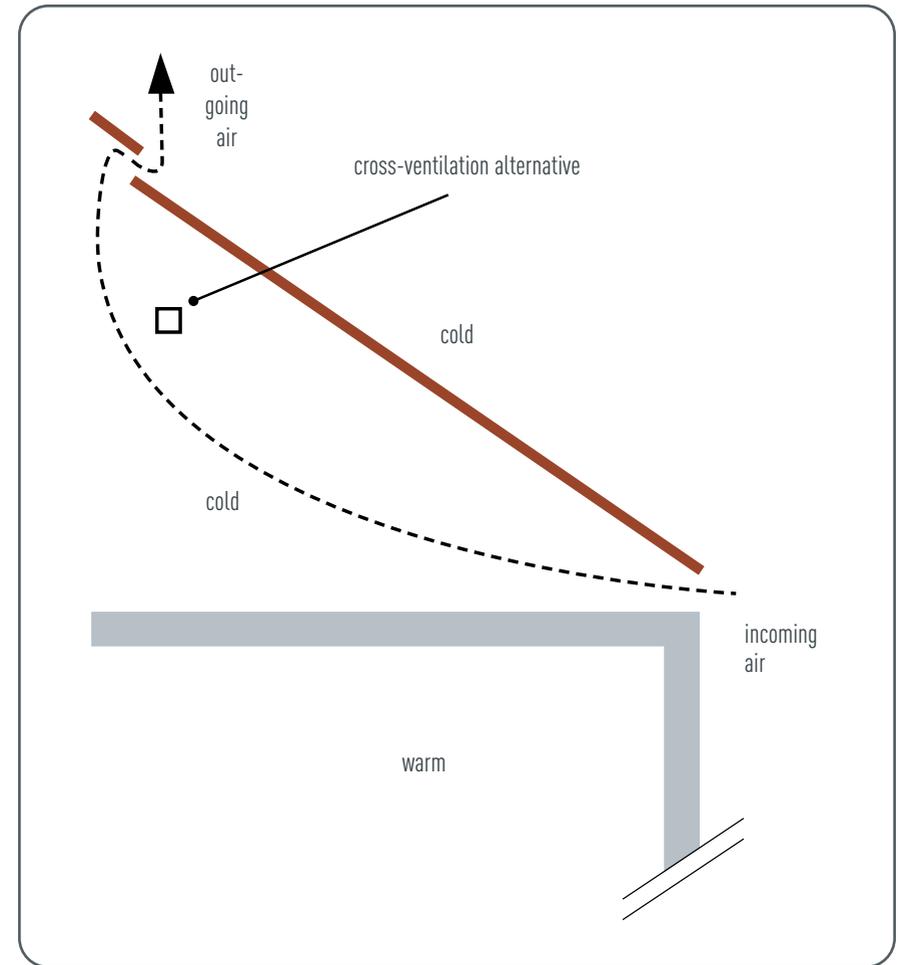


Figure 2 • Single-skin roof build up

## 1.1 ATTIC SPACE CAN ALSO BE USED AS LIVING SPACE (FIG. 1)

Compared to a single-skin roof build up, a ventilated gap is added to the double-skin roof build up (counter battens). This measure can also be used to thermally insulate between the rafters. A double-skin roof build up is preferable to a single-shell roofbuild up.

### NOTE

Physical building conditions must be checked and the relevant standards observed.

### THE ATTIC CAN ALSO BE USED AS LIVING SPACE

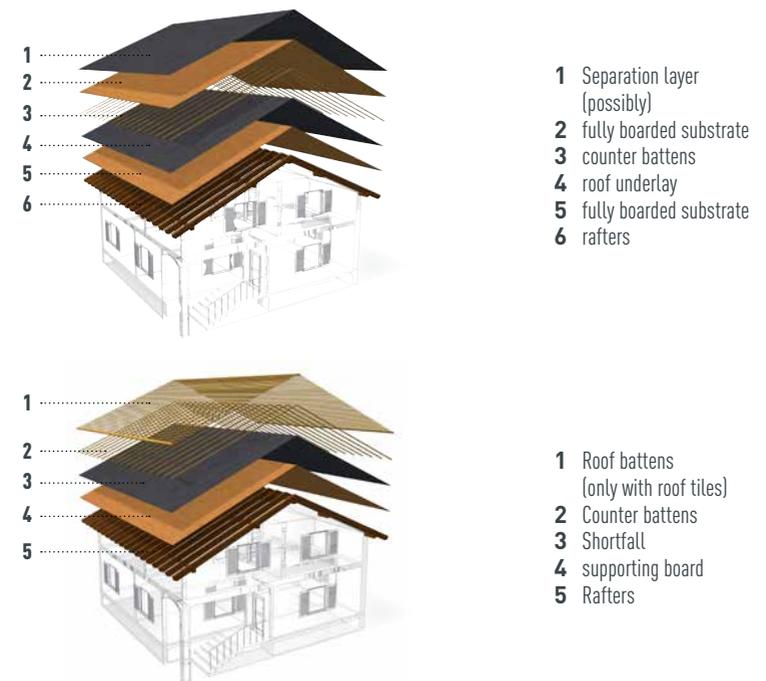
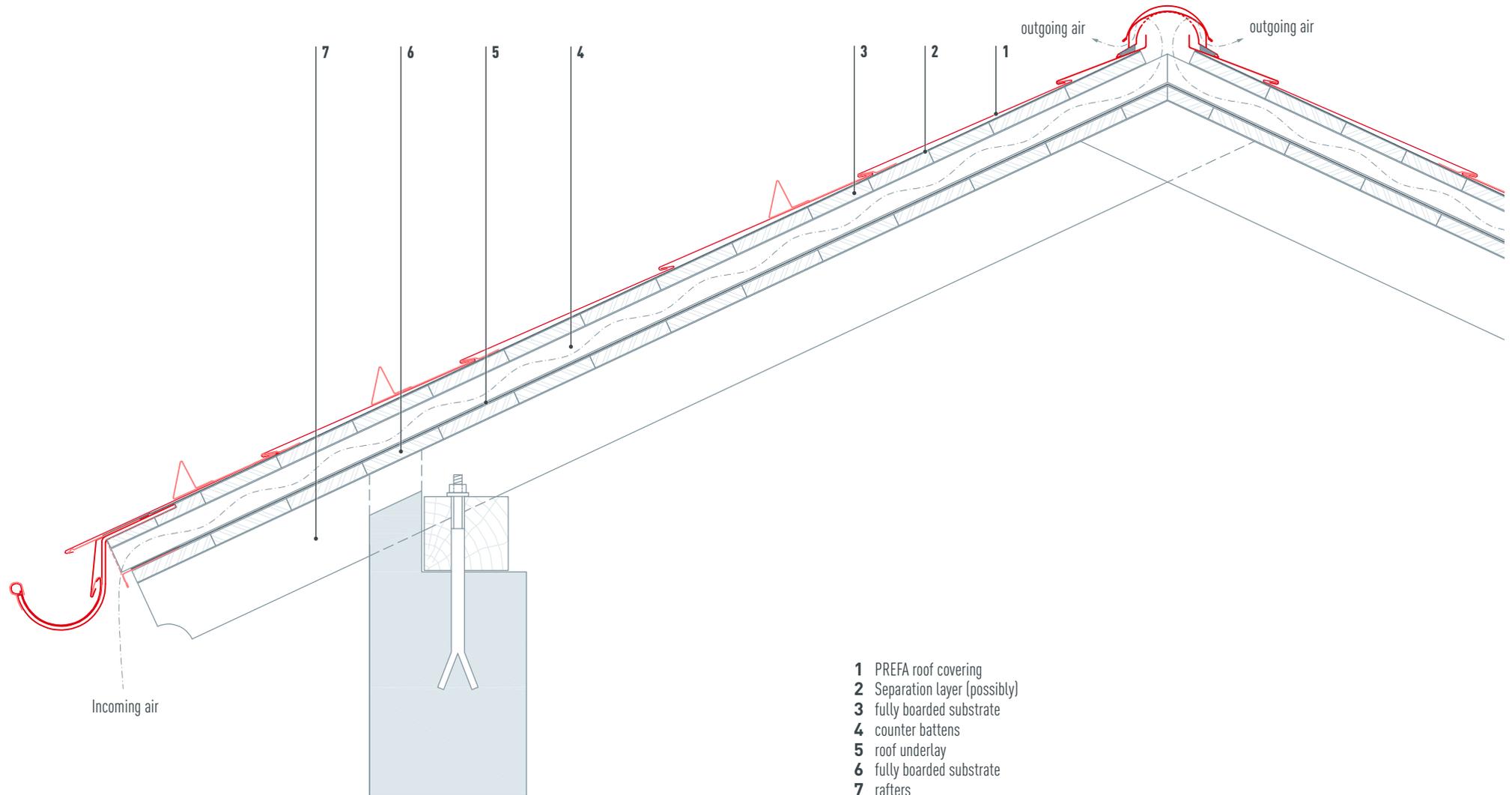
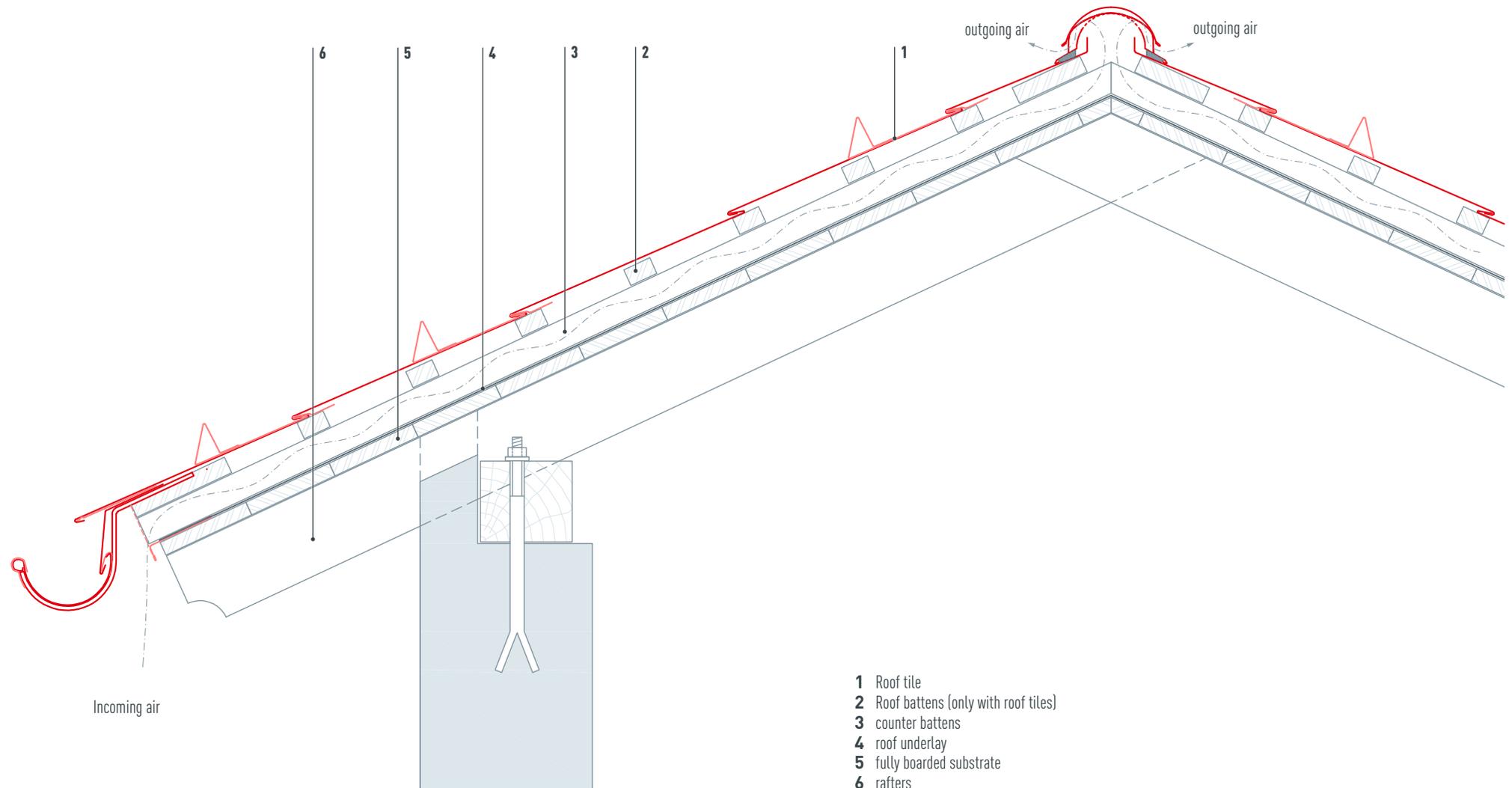


Figure 3 • Double skin roof build up

## 1.1.1 Double-kin build up on fully supported substrate



## 1.1.2 Double-skin build up with PREFA roof tiles on battens



## 1.2 ATTIC SPACE IS NOT USED FOR LIVING PURPOSES (FIG. 2)

In the case of a single-skin roof structure, the entire attic is ventilated. With this type of roof structure, the attic ceiling must be thermally insulated (complicated creation of an attic extension at a later stage).

### NOTE

In the case of single-skin, non-insulated roof constructions, a sub-roof must comply with the requirements of national regulations (sub-roof standards), and a bitumen separation layer is required as a minimum.

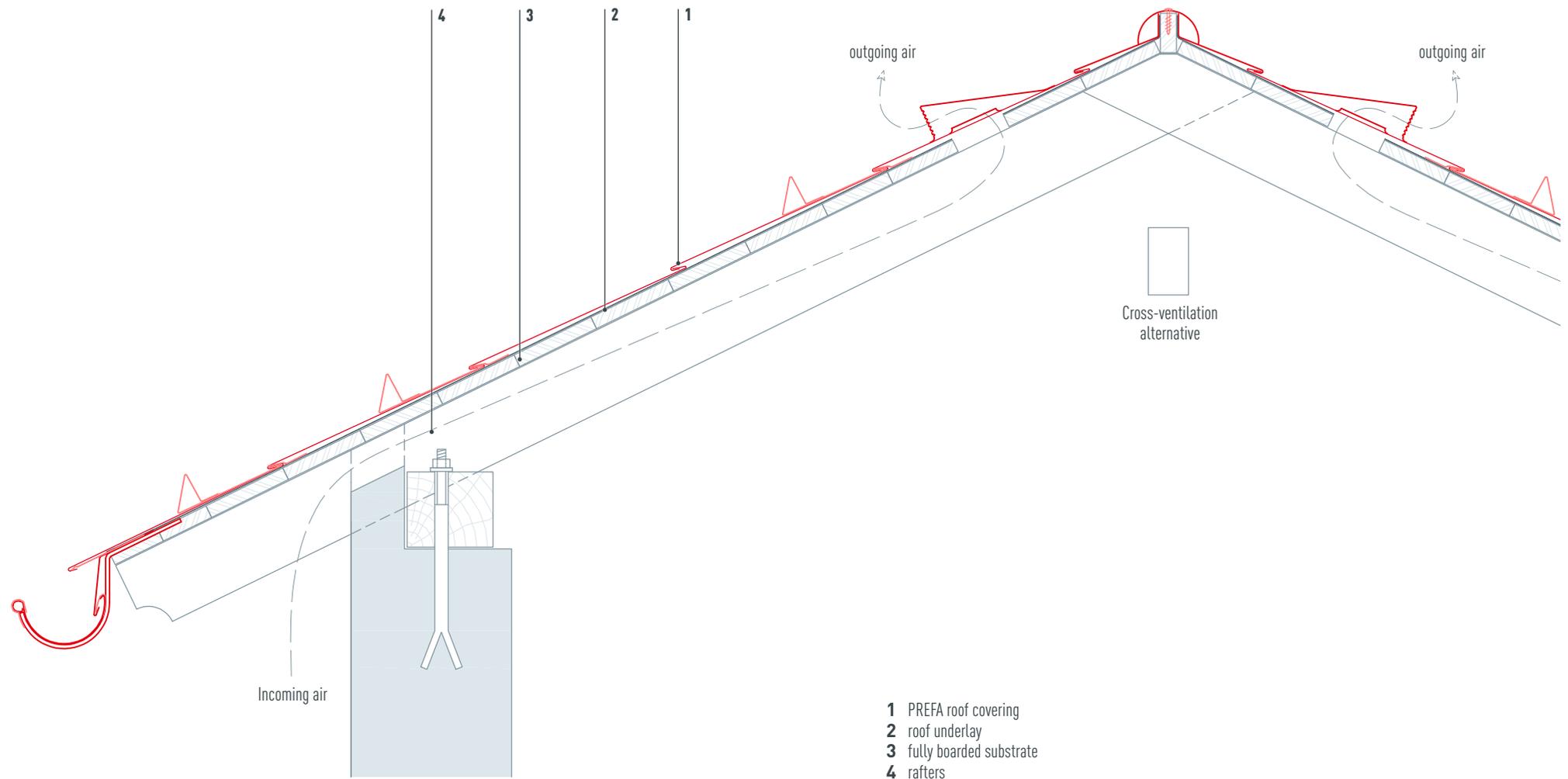
When arranging openings on the ridge side in single-shell roof structures, the penetration of drifting snow cannot be completely ruled out.

### THE ATTIC IS NOT USED AS LIVING SPACE



Figure 4 • Single-skin roof build up

## 1.2.1 Single-skin build up on



## 2 NON-VENTILATED ROOF BUILD UP

Non-ventilated insulated roof build ups have also been used on metal roofs for a number of years. In this case, the guidelines (particularly the building physics requirements) for insulated roofs must be observed.

### NOTE

roof build ups must be executed in accordance with structural-physical norms as well as with national regulations and requirements.

## SUBSTRUCTURE

**The substructure is to be planned and executed according to structural requirements (object and site-related).**

Inform the carpentry company that will be doing the work of the batten dimensions and design requests, such as ridge and ridge formation, before they start work and check the correctness.

### FULLY BOARDED SUBSTRATE

R.16 roof tiles, shingles, DS.19 shingles, 29 × 29 rhomboid roof tiles, 44 × 44 rhomboid roof tiles, FX.12 roof panels and Prefalz must be installed on a fully supported substrate. Roof tiles can be installed on fully supported substrate.

the solid sheeting must be executed in accordance with national standards and regulations.

- ↪ Board width: 80–160 mm
- ↪ Board thickness: min. 24 mm
- ↪ Wood humidity: max. 20 %

### ROOF BATTENS

Roof tiles can be installed on battens, with a supporting batten, as well. It is absolutely necessary to ensure the exact batten spacing of 419 mm. The intermediate battens must not be omitted under any circumstances, they serve an additional support batten.

**From a snow load of 3.25 kN/m<sup>2</sup> (Switzerland: reference altitude 925 m) or in the terrain categories 0, I or II, all small format PREFA products require installation on solid sheeting with a bituminous separation layer.**



Terrain category 0 - lakes and coastal areas exposed to the open sea.



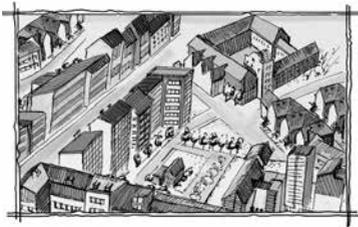
Terrain category I - lakes and areas with low vegetation and without obstacles.



Terrain category II - areas with low vegetation such as grass and individual obstacles (trees, buildings) with a distance of at least 20 times obstacle height.



Terrain category III - areas with uniform vegetation and buildings or with individual objects with distances of less than 20 times obstacle height (e.g. villages, suburban developments, forest areas).



Terrain category IV - areas where at least 15% of the surface is covered with buildings with an average height of 15 metres.

Figure 5 • Terrain categories

## PANELS MADE OF WOOD-BASED MATERIALS

When using wood-based panels as an installation substrate for PREFA roof coverings, the choice of thickness, the mounting to the wood-based material and the intended use as a metal roof substrate must be agreed with the manufacturer or dealer of the wood-based panels.

When using wood-based panels, a separation layer is required.

OSB sheets as a substrate are special purpose solutions and should be planned as such.

### NOTE

PREFA does not recommend the use of OSB sheets as a substructure for metal roofing with or without a separation layer.

## SEPARATION LAYER

The arrangement of separation layers is not regulated by standards. Bitumen separation layers on the upper formwork level can, under certain conditions, represent a sub-roof in accordance with ÖNORM B 4119, but this is not always the case. The requirements or conditions under which a bitumen waterproofing sheet, arranged directly under the metal covering, can replace a normatively required sub-roof, are regulated in ÖNORM B 4119.

Separation layers arranged directly under the roof covering can fulfil a variety of tasks. Whether a separation layer is used or which separation layer is to be used should thus be already taken into account in the planning phase.

Separation layers can:

- protect the wooden formwork or wood-based panels from moisture during the construction phase.
- improve sound insulation (= acoustic decoupling).
- compensate for minor unevenness in the roof structure
- protect the metal on the underside against damaging alkaline influences and possible harmful chemicals in substrate
- support the roof covering and the sub-roof with regard to the rainproof function.

Depending on the function that a separation layer is to assume, a suitable product must be agreed with the manufacturer of the separation layers. If the separation layer is to be applied, for example, as additional soundproofing, then we recommend using stronger, heavier bitumen separation layers (e.g. BauderTOP UDS 3 NK or equivalent). If the separation layer “only” serves to protect the substructure during the construction phase, a thinner bitumen separation layer can be used (e.g. BauderTOP TS 40 NSK or equivalent).

In addition to the framework conditions specified above, the manufacturer’s information on the arrangement of separation layers is defined by PREFA as follows:

- From a standard snow load of 3.25 kN/m<sup>2</sup> or in the terrain categories 0, I or II, installation of bitumen separation layers on full formwork is required for roof tiles, R.16 roof tiles, shingles, DS.19 shingles, 29 × 29 rhomboid roof tiles, 44 × 44 rhomboid roof tiles and FX.12 roof panels.
- With a roof pitch up to 25°, a separation layer is required for R.16 roof tiles, DS.19 shingles and FX.12 roof panels.
- In the case of single-skin, non-insulated roof constructions, a sub-roof must comply with the requirements of national regulations (sub-roof standards), and a bitumen separation layer is required as a minimum.

Structured separation layers are not required due to the corrosion resistance of aluminium. PREFA advises against using structured separation layers in combination with PREFA roof products.

In general, we recommend the use of suitable bitumen separation layers.

When using thicker separation layers, use longer nails if necessary.

## LAYOUT

### NOTE

Correct and precise layout is the best prerequisite for quick and neat installation.

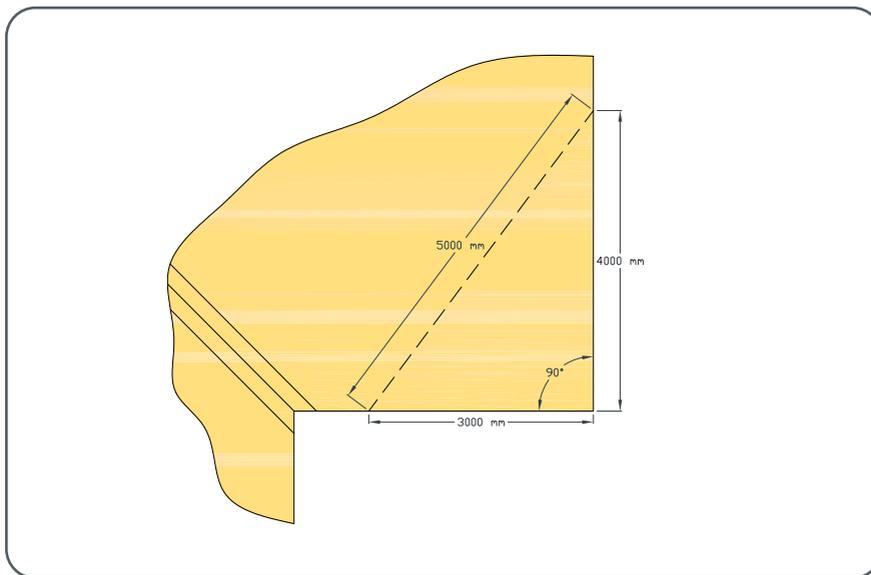


Figure 6 · Layout

In order to determine a right angle, use an aspect ratio of 3:4:5.

Mark the desired corner point and then mark out a length of 3 m on the edge to which you want to determine the right angle. Then mark 4 m from the corner point in the approximate direction of the right angle. Now hold the zero point of the tape measures at the previously marked 3 m mark and measure 5 m from this point. The right angle from the corner point can be found at the intersection. This not only works with the dimensions 3, 4 and 5 m, but with any multiple or fraction of these dimensions. Only the ratio 3:4:5 must be kept.

## CHECKING THE ROOF BUILD UP

For both new builds and refurbishments, check the build up for inaccuracies. Pay attention to the minimum required roof pitch of the particular product and check the substructure for any inaccuracies.

		12°	14°	16°	17°	22°	25°
Roof tile		rafter length: < 7 m					
		rafter length: 7–12 m					
		rafter length: > 12 m					
R.16 roof tile						Up to 25°: only with a bituminous separation layer	
Roof shingle						From 25°	
DS.19 shingle						Up to 25°: only with a bituminous separation layer	
Rhomboid roof tile 29×29						From 22°	
Rhomboid roof tile 44×44		rafter length: < 7 m					
		rafter length: 7–12 m					
		rafter length: > 12 m					
FX.12 roof panel						Up to 25°: only with a bituminous separation layer	

\*Further information can be found alongside the respective products.

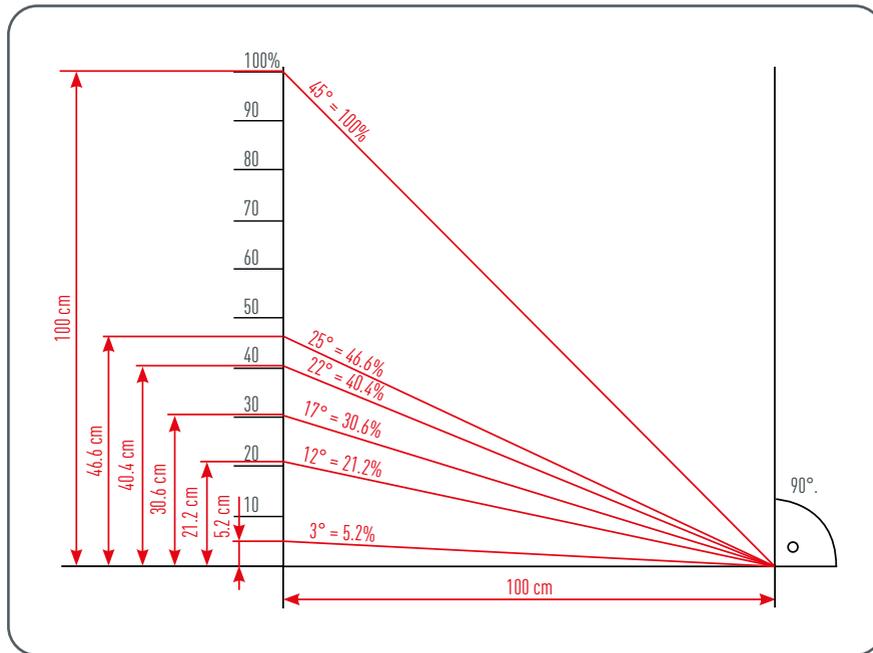


Figure 7 - Roof pitch with details in angle degrees, percent and centimetres

Material matching	Country atmosphere	City/Industry atmosphere	Lake/near the sea
Zinc	+	+	+
Stainless steel	+	+	+
Lead	+	+	-
Unprotected steel	-	-	-
Copper	-	-	-
Dry concrete	+	+	-
Concrete not set	-	-	-

No water may get from copper parts (e.g. gutters, edging, chimney caps, sheet metal coverings) onto PREFA aluminium products (observe the electrochemical series). If this is already the case, these parts must be replaced, otherwise the materials will corrode.

Impurities such as drilling dust, mortar residues or effluent from concrete on coated or bare aluminium parts must be removed immediately.

PREFA aluminium products must be protected from damaging influences by other building parts (e.g. concrete) or the environment (e.g. corrosive environment).

## STORAGE AND TRANSPORT

When transporting the PREFA material, handle the packaging units carefully. Do not drop or tilt the boxes, otherwise the folds will be pressed together and this will make installation more difficult.

Secure open units or sheet metal parts against falling in strong winds.

Protect cardboard packaging stored on the roof against the rain with a tarpaulin.

## CONTACT WITH OTHER MATERIALS

Different metals must not touch if this could cause contact corrosion or corrosion damage. Direct metallic contact is to be prevented through the use of suitable coatings or separation layers. It is also important to pay attention to the order of the materials in the watercourse.

The table is intended to give an overview of how aluminium may be connected to other metals and which building materials should be used with caution.

## GENERAL INFORMATION

- roof area must be properly cleaned off debris and saw dust before installation of the metal roof. Otherwise, there is a risk of capillary action
- In order for the PREFA roof covering to fulfill its function, PREFA roof coverings may only be walked on by competent persons. In order to prevent technical or visual damage to the roof covering (e.g. crushing of the seams or pressure points) by third parties, additional measures must be taken, such as catwalk walkways.
- Do not damage folds.
- The length of the trimmed flashings should not exceed 3,000 mm. Do not make a firm connection at the joints, otherwise there is no possibility of expansion.
- For roof tiles, R.16 roof tiles, shingles, DS.19 shingles, 29 × 29 rhomboid roof tiles, 44 × 44 rhomboid roof tiles and FX.12 roof panels, only process the edging or end strips made from PREFA supplementary tape (P.10). This is the only way to ensure colour consistency in the long term.
- In order to avoid colour differences in the long term, batches should not be mixed within the same project.
- You will need longer ring shank nails (e.g. 2.8/40) for PREFA coverings over thicker layers of bitumen or thicker separation layers. Please state this separately when ordering.
- PREFA hydro paints are only suitable for adapting existing roof parts (e.g. gutter hooks). Painting over or repairing scratches on roof tiles, R.16 roof tiles, shingles, DS.19 shingles, 29 × 29 rhomboid roof tiles, 44 × 44 rhomboid roof tiles, FX.12 roof panels and PREFALZ supplementary hinges is not required due to the corrosion resistance of aluminium. When touching up scratches, there may be colour differences due to different paint qualities of the touch-up paints/pens.
- Be sure to observe and control all safety measures before starting your work.
- Use a deck aid and take all other safety measures into account, such as roof safety hooks that may be required.
- In the case of powder-coated products, cracks and damage to the coating must be expected during forming (e.g. expansion of pipes).

## CLEANING

The roof and the façade are parts of the building that are particularly stressed by the weather. Sun and wind, rain and snow, as well as permanent moisture (in the forest or in the shade) have an effect on the building cover. Dirt deposits (e.g. dust, leaves, needles, etc.) can impair the function and appearance of the roof covering, façade or the roof drainage (e.g. blockage). Therefore, it is advisable to check roof and wall coverings, as well as roof drainage systems at certain intervals or after extreme weather events (strong rain, storms, ...) in order to be able to identify and eliminate any changes in good time.

**Tips for cleaning and maintenance of PREFA coloured aluminium :** In the case of light soiling, such as a layer of dust or similar: clear, lukewarm water, detergent or care products for car paintwork (no scouring agents!). In the case of heavy contamination, such as adhesive residues, oils or fats: conventional car polish or suitable universal cleaners. The manufacturer's instructions for cleaning agents must be observed.

Use water and a cleaning sponge for cleaning.

### CAUTION:

After each cleaning process, rinse sufficiently with clear water. Do not clean in direct sunlight. Never use acetone, nitro thinner or similar solvent or products with an abrasive effect for cleaning.

## CALCULATIONS

The arrangement of snow protection systems must be planned and designed for the snow loads in accordance with EN 1991-1-3 and the national annex. The snow protection measures for solar and photovoltaic systems on PREFEA roofs must also be agreed with the owner.

The fastenings specified represent the base fastening of the respective products. In the case of increased wind loads, it may be necessary to increase or decrease the number of fastenings depending on the object or to use screwed fastenings instead of nailed ones.

### NOTE

For assistance with calculations for projects in exposed locations, please contact PREFEA's Product Technology department at [office.uk@prefa.com](mailto:office.uk@prefa.com).

## PREFEA ACADEMY

The PREFEA training courses are an important prerequisite for a satisfactory and efficient installation.

PREFEA continuously provides training courses on PREFEA roof systems with practice on suitable roof mock ups. For these training courses, timely registration is required.

Further information on courses and registration can be found at:

[uk.prefa.com/academy](http://uk.prefa.com/academy)



Figure 8 · PREFEA Academy

## HAND TOOLS

“A good hand needs good tools.” This proverb also applies to the tools required for the installation of PREFEA roof systems.

### IMPORTANT

Sharp corners and edges on all tools must be avoided and ideally should be rounded off to avoid markings or damage to the coating. The same applies to the fin of the iron hammer (250-300 g).

## INSTALLATION VIDEOS

PREFEA installation videos can be found on our website in the login area. Access data can be obtained from your PREFEA consultant on request.

[uk.prefa.com](http://uk.prefa.com)

## ON-SITE TRAINING/SUPPORT

are you currently carry out your first PREFEA project and require our technical support? No worries - our PREFEA technicians will be happy to support you and give you important and expert tips so that you are perfectly equipped for your next project with PREFEA.

[uk.prefa.com](http://uk.prefa.com)



Figure 9 • Tools



## ROOF TILE

Roof tile	
material	coil-coated aluminium, 0,7 mm thick
Size	600×420 mm in installed area
weight	1 m <sup>2</sup> = approx. 2.3 kg = 4 panels
Roof pitch	From 12° = approx. 21 % (with a rafter length of up to 7 m), From 14° = approx. 25 % (with a rafter length of 7–12 m), From 16° = approx. 29 % (with a rafter length of more than 12 m)
Substructure and separation layer	See chapter General information
standard fastening	2 pcs. Aluminium patent clips per roof tile = 8 clips per m <sup>2</sup>

PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKT/LILIENFELD 05	PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKT/LILIENFELD 05
2013 - DP2 - A - 3182 EN 14783 Vollflächig unterstützte Dachdeckungs- und Wandbekleidungs-elemente aus Aluminium <b>PREFA DACHPLATTE</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss® <b>BRANDVERHALTEN:</b> Klasse A1 <b>VERHALTEN BEI BEANSPRUCHUNG DURCH                  FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend <b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet	2013 - DP1 - A - 3182 EN 14782 Selbsttragende Dachdeckungs- und Wandbekleidungs-elemente aus Aluminium <b>PREFA DACHPLATTE</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss® <b>BRANDVERHALTEN:</b> Klasse A1 <b>VERHALTEN BEI BEANSPRUCHUNG DURCH                  FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend <b>WIDERSTAND GEGEN PUNKTLASTEN:</b> ohne weitere Prüfung entsprechend <b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet

Figure 10 · Roof tile



## LAYOUT



Figure 11 • Roof tile – lacing

The initial lacing takes place in the middle of the roof or on the verge (Fig. 12.1). The starter strip approach results from the marked disk partitioning. The vertical bevel is either grooved (Fig. 12.1, variant B) or in the middle between two grooves (Fig. 12.1, variant A), with the horizontal line always laid 419 mm towards the upper edge of the panel (Fig. 12.3). The line drop to be carried out vertically must be divisible by 301 mm (Fig. 12.2). In practice, after 5 panels (1,505 mm) or after 10 panels (3,010 mm), a colored line deduction is made vertically. Make sure that the lacing runs in a straight line over the entire length.

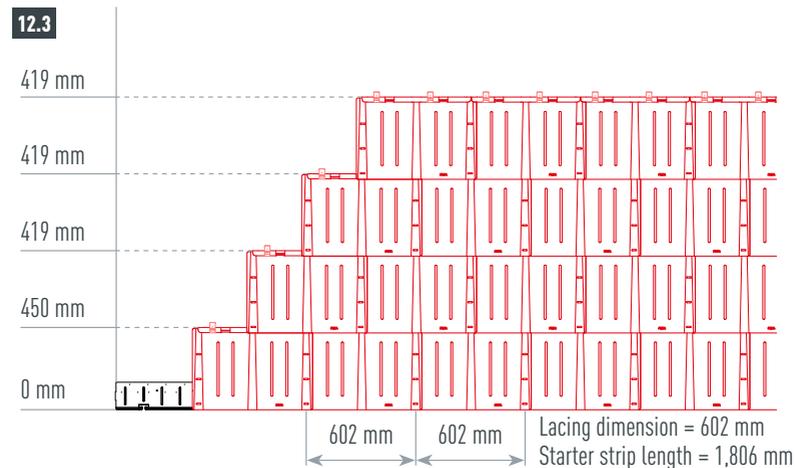
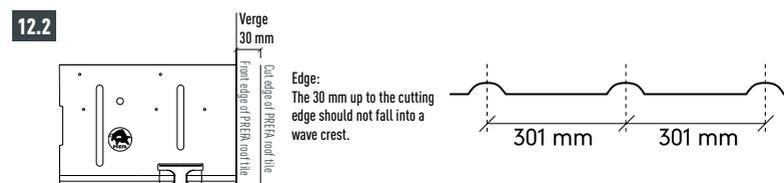
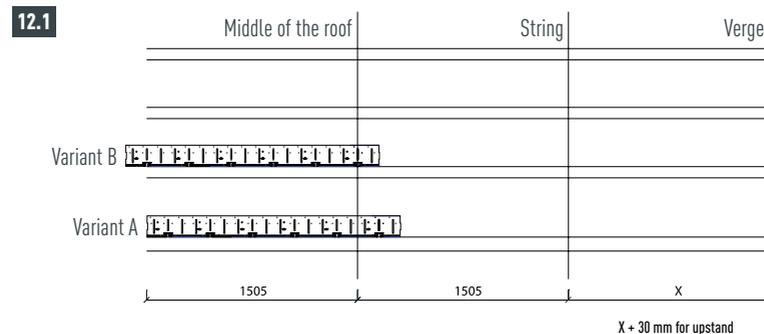


Figure 12 • Roof tile – lacing dimension

## DIVISION DIMENSIONS (LACING DIMENSIONS)

	PREFA ROOF TILE			
	Corrugated dimensions	Main batten	Corrugated dimensions	Main batten
1	301	450	21	6,321
2	602	869	22	6,622
3	903	1,288	23	6,923
4	1,204	1,707	24	7,224
5	1,505	2,126	25	7,527
6	1,806	2,545	26	7,862
7	2,107	2,964	27	8,127
8	2,408	3,383	28	8,428
9	2,709	3,802	29	8,729
10	3,010	4,221	30	9,030
11	3,311	4,640	31	9,331
12	3,612	5,059	32	9,632
13	3,913	5,478	33	9,933
14	4,214	5,897	34	10,234
15	4,515	6,316	35	10,535
16	4,816	6,735	36	10,836
17	5,117	7,154	37	11,137
18	5,418	7,573	38	11,438
19	5,719	7,992	39	11,739
20	6,020	8,411	40	12,040

Measurements in mm

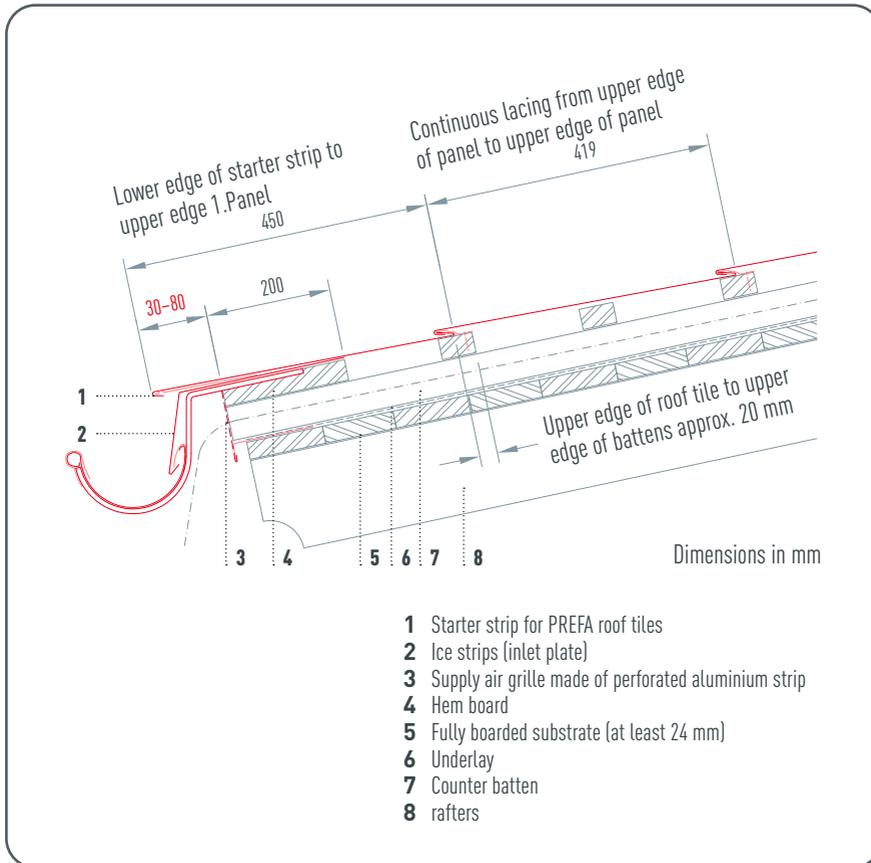


Figure 13 · Roof tile – lacing

## INSTALLATION AND COVERING DIRECTION

The roof tiles make laying in both directions possible. If the circumstances allow it (e.g. with pitched roofs and pent roofs), coverage towards the weather side is preferred.

In the ridge and valley area, the covering direction is binding due to the necessary overlap.

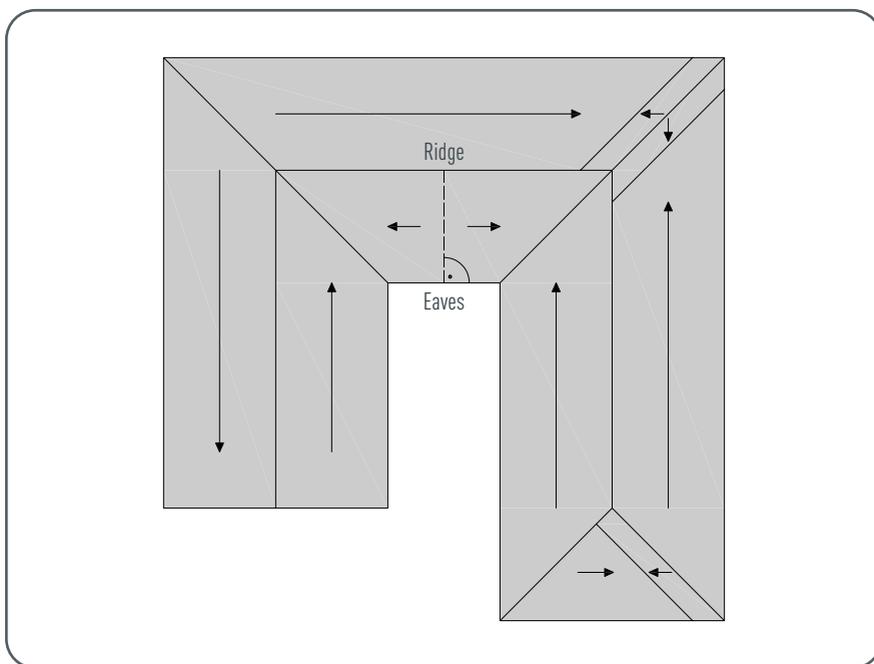


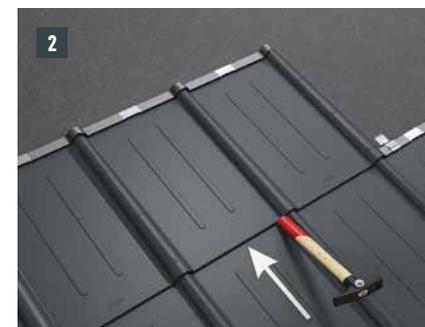
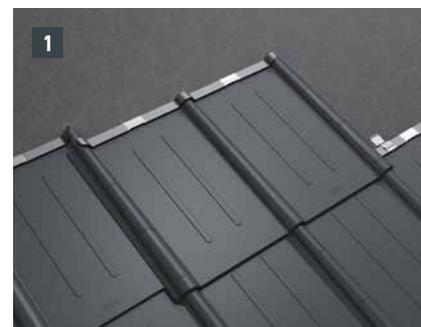
Figure 14 • Roof tile – installation and covering direction

Roof tiles are always bonded, i.e. covered with offset joints. Half panels and frog mouth hatches can also be covered end to end.

Cover roof tiles in horizontal rows.

Press the panel into the hook fold. Strike the bottom edge of the panel lightly with the handle of the hammer.

A general bracing of the overlapping grooves is not normally necessary. In the case of uneven roof surfaces (overlapping grooves are not in place), manual bracing may be necessary.



## FASTENING

Fasten each panel with two patent fasteners (standard fastening). Panels are fastened with a 2.8/30 grooved nail for 30 × 50 mm battens; 2.8/25 grooved nails are to be used for full formwork. Use longer nails if necessary when using thicker separation layers.



Figure 15 • PREFA patent clips

The clips must be approx. 3 cm next to the record groove. In areas particularly prone to storms, a wind load calculation is required and fastenings must be increased or decreased according to the calculation or screwed fastenings used instead of nailed ones. If the fastenings with an increased number of clips are not sufficient according to the calculation, an additional fastening can be attached to the side of the shaft outlet (underlying shaft) with 2 SPAX screws per panel. The clip arrangement depends on the covering direction. The patent clips for roof tiles and roof shingles are provided with an additional grain. This grain makes it easier to nail through if this is not possible with the given hole (e.g. because of a knothole, gap in the formwork).

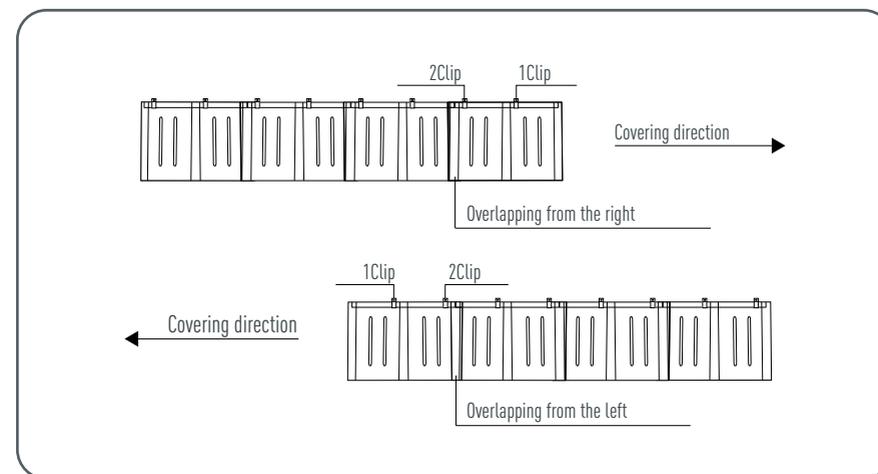


Figure 16 • Roof tile – patent clips

## REPLACING A ROOF TILE

A professionally replaced roof tile should be recognisable as a repair. You will achieve a perfect result with the following work steps:



- Lift up the upper transverse fold of the damaged roof tile with the shuttering iron (Image 1).
- Manually remove the panel from the fold by giving it a sharp tug (Image 2).
- Use the seaming pliers to open the two clamps on the seam and pull them down and out. Do not remove clips (Image 3).
- Slightly open the top fold of the new panel so that the clip can be clipped on or the new panel can be folded in (Image 4).



- Before pushing in the new roof tile, tension both outer grooves and open the upper fold slightly. The new panel can be covered with both lateral grooves over the others (Image 5) – exception: in the collar or self area.
- Lift the fold and clamp both fasteners again. Bend the fold of the top panel downwards at an angle of approx. 90° (Image 6).
- Gently press both folds together with the curved seaming pliers. Work on the top seam of the panel with a hammer and pliers (Image 7).
- Carefully bring the fold between the grooves into the original one (Image 8).

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the roof tiles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.

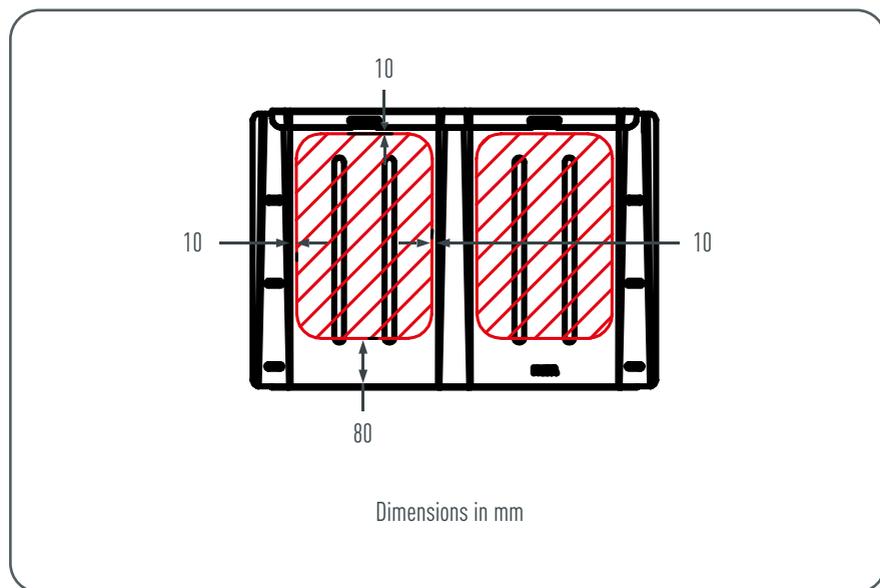
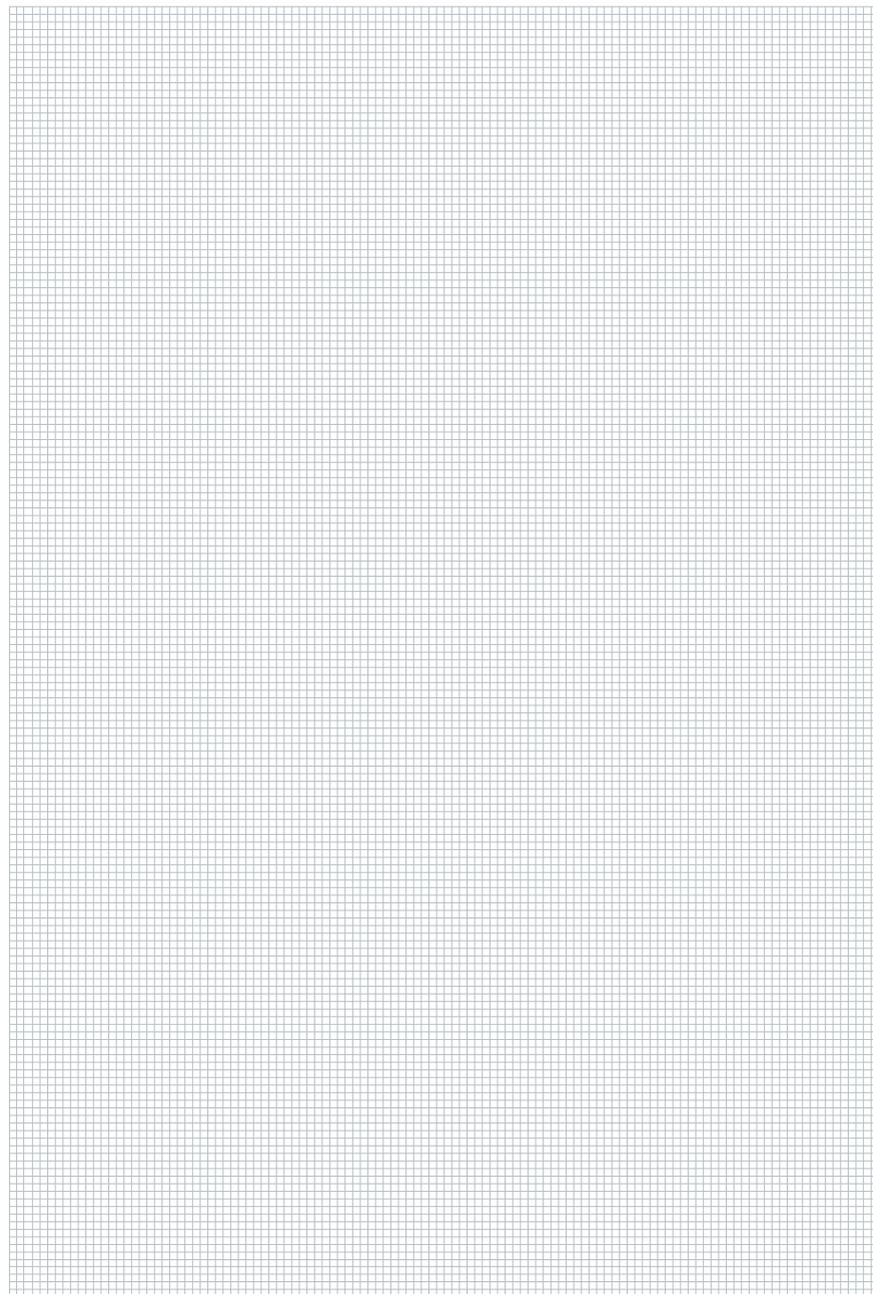


Figure 17 · Roof tile – Installation area





## R.16 ROOF TILE

R.16 roof tile	
Material	coil-coated aluminium, 0.7 mm thick
Size	700×420 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2.5 kg = 3.4 pcs.
Roof pitch	from 17° = approx. 31%
Substructure and separation layer	See chapter General information, a bitumen separation layer is required up to a roof pitch of 25°
Standard fastening	direct, 3 2.8/25 grooved nails per R.16 roof tile

<p style="font-size: 8px; margin: 0;">                 PREFA ALUMINIUMPRODUKTE GMBH                  WERKSTRASSE 1, A-3182 MARKTLILIENTELD                  16             </p> <p style="font-size: 8px; margin: 0;">                 2015 - R.16 - 2 - A - 3182                  EN 14783                  Vollflächig unterstützte Dachdeckungs- und                  Wandbekleidungs-elemente aus Aluminium  <b>PREFA DACHPLATTE R.16</b>                  Dicke: 0,7 mm,                  Beschichtung: P10, Duragloss®  <b>BRANDVERHALTEN:</b> Klasse A1  <b>VERHALTEN BEI BEANSPRUCHUNG DURCH                  FEUER VON AUSSEN:</b>                  ohne weitere Prüfung entsprechend  <b>DAUERHAFTIGKEIT:</b>                  25µm - 62µm                  im Coil-Coating-Verfahren beschichtet             </p>	<p style="font-size: 8px; margin: 0;">                 PREFA ALUMINIUMPRODUKTE GMBH                  WERKSTRASSE 1, A-3182 MARKTLILIENTELD                  16             </p> <p style="font-size: 8px; margin: 0;">                 2015 - R.16 - 1 - A - 3182                  EN 14782                  Selbsttragende                  Wandbekleidungs-elemente aus Aluminium  <b>PREFA DACHPLATTE R.16</b>                  Dicke: 0,7 mm,                  Beschichtung: P10, Duragloss®  <b>BRANDVERHALTEN:</b> Klasse A1  <b>VERHALTEN BEI BEANSPRUCHUNG DURCH                  FEUER VON AUSSEN:</b>                  ohne weitere Prüfung entsprechend  <b>DAUERHAFTIGKEIT:</b>                  25µm - 62µm                  im Coil-Coating-Verfahren beschichtet             </p>
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Figure 18 · R.16 roof tile



## LAYOUT

**Horizontal lacing:** 420 mm (measured at the fold of the adhesive strip) **Vertical lacing:** 700 mm (every second row offset by 350 mm)

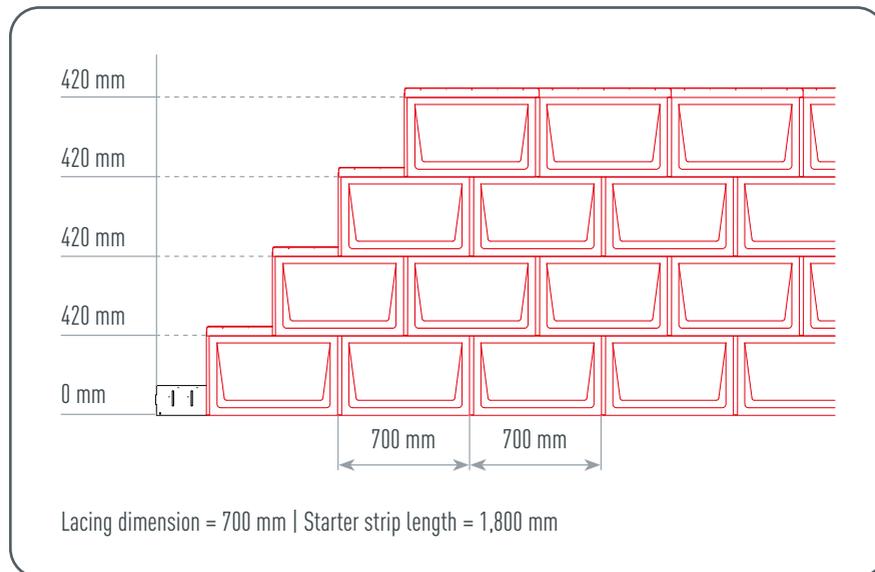


Figure 19 • R.16 roof tile – lacing dimension

## INSTALLATION AND COVERING DIRECTION

R.16 roof tiles are always bonded, i.e. butt-staggered. In order to facilitate laying with half joint offset, a mark is to be made on the upper fold of the R.16 roof tile.

The R.16 roof tiles are laid from right to left and should be laid in rows (in horizontal rows).



Figure 20 • R.16 roof tile - laying

- Adjust R.16 roof tile and push into the rebates. Strike the bottom edge of the panel lightly with the handle of the hammer.
- Align the R.16 roof tile on the lacing or the marking on the starter strip or the previous row.

## FASTENING

Fasten the R.16 roof tiles with the supplied PREFA 2.8/25 grooved nails (base attachment of 3 pcs. per R.16 roof tile). For PREFA coverings over multiple layers of bitumen (e.g. bitumen shingles), you will need longer grooved nails, such as 2.8/40. Please state separately when ordering.

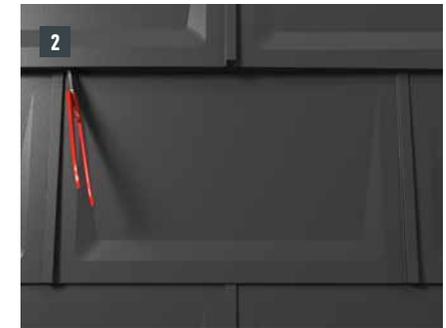
In areas particularly prone to storms, a wind load calculation is required and fastenings must be increased or decreased according to the calculation.



### NOTE

In the case of additional fastenings, the prepared grains can be used.

## REPLACING AN R.16 ROOF TILE



- Lift up the upper transverse fold of the damaged R.16 roof tile.
- Remove the fastening and cut into the upper patent fold (Image 2). Then pull the R.16 roof tile down and out.



- Prepare new R.16 roof tiles according to Image 3.
- Push in new R.16 roof tile and fasten. Bend the fold of the upper R.16 roof tile downwards at an angle of approx. 90°.  
**CAUTION:** Do not use the pre-punched holes.

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the R.16 roof tiles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.



- Carefully bring the fold into the original shape.
- A professionally replaced R.16 roof tile should not be recognisable as such.

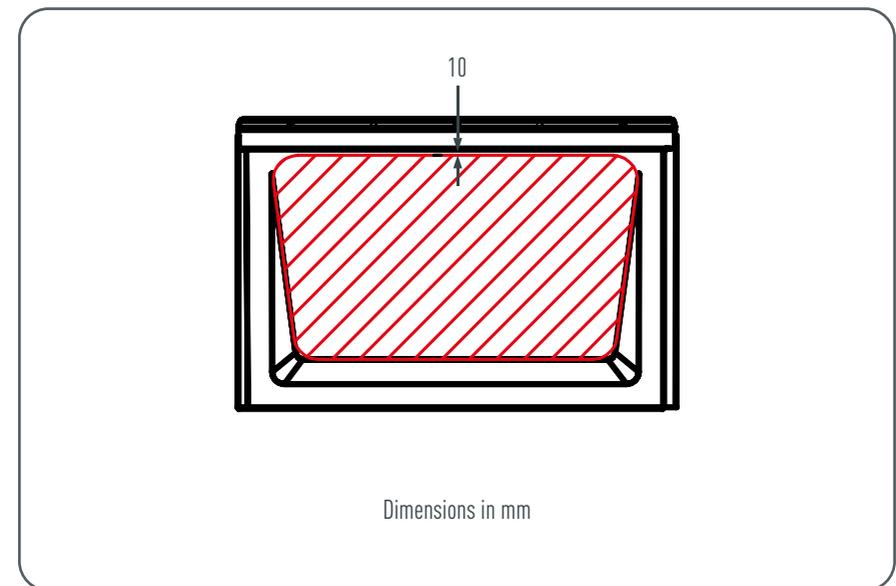


Figure 21 • R.16 roof tile – installation area



## ROOF SHINGLE

Roof shingle	
Material	coil-coated aluminium, 0.7 mm thick
Size	420×240 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2.5 kg = 10 shingles
Roof pitch	from 25° = approx. 47%
Substructure and separation layer	See chapter General information
Standard fastening	1 pc. Aluminium patent clip per shingle = 10 clips per m <sup>2</sup>

<b>CE</b>	<b>CE</b>	<b>CE</b>
PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06	PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06	PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06
2013 - DS2 - A - 3182 EN 14783 Vollflächig unterstützte Dachdeckungselemente aus Aluminium PREFA DACHSCHINDEL Dicke: 0,7 mm, Beschichtung: F:10, Duragloss® BRANDVERHALTEN: Klasse A1	2013 - WS2 - A - 3182 EN 14783 Vollflächig unterstützte Wandbekleidungselemente aus Aluminium PREFA WANDSCHINDEL Dicke: 0,7 mm, Beschichtung: F:10, Duragloss® BRANDVERHALTEN: Klasse A1	2013 - WS1 - A - 3182 EN 14782 Selbsttragende Wandbekleidungselemente aus Aluminium PREFA WANDSCHINDEL Dicke: 0,7 mm, Beschichtung: F:10, Duragloss® BRANDVERHALTEN: Klasse A1
VERHALTEN BEI BEANSPRUCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend DAUERHAFTIGKEIT: 25µm - 62µm im Coil-Coating-Verfahren beschichtet	VERHALTEN BEI BEANSPRUCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend DAUERHAFTIGKEIT: 25µm - 62µm im Coil-Coating-Verfahren beschichtet	VERHALTEN BEI BEANSPRUCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend DAUERHAFTIGKEIT: 25µm - 62µm im Coil-Coating-Verfahren beschichtet

Figure 22 · Roof shingle



## LAYOUT

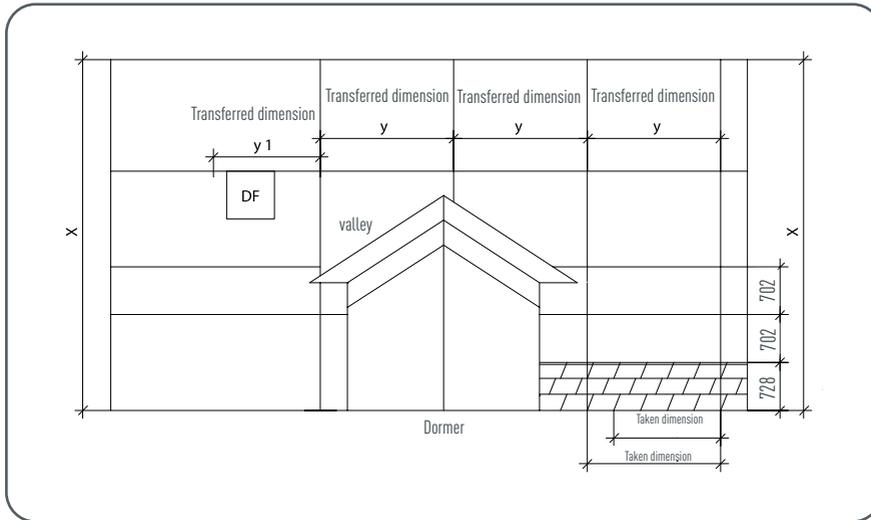


Figure 23 • Roof shingle - lacing

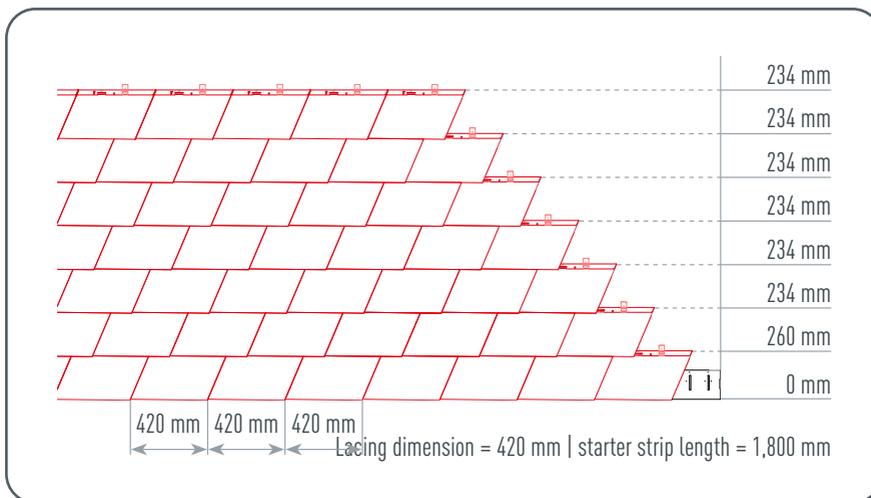


Figure 24 • Roof shingle - horizontal lacing dimensions

## COVERING DIRECTION AND FASTENING

The roof shingles are laid from right to left and should be laid in rows (in horizontal rows). The offset from row to row is 1/3 - see "V" marking on the upper fold of the shingles.

Each shingle is fastened with a clip and a supplied 2.8/25 grooved nail (= base attachment).

In areas particularly prone to storms, a wind load calculation is required and fastenings must be adjusted according to the calculation.

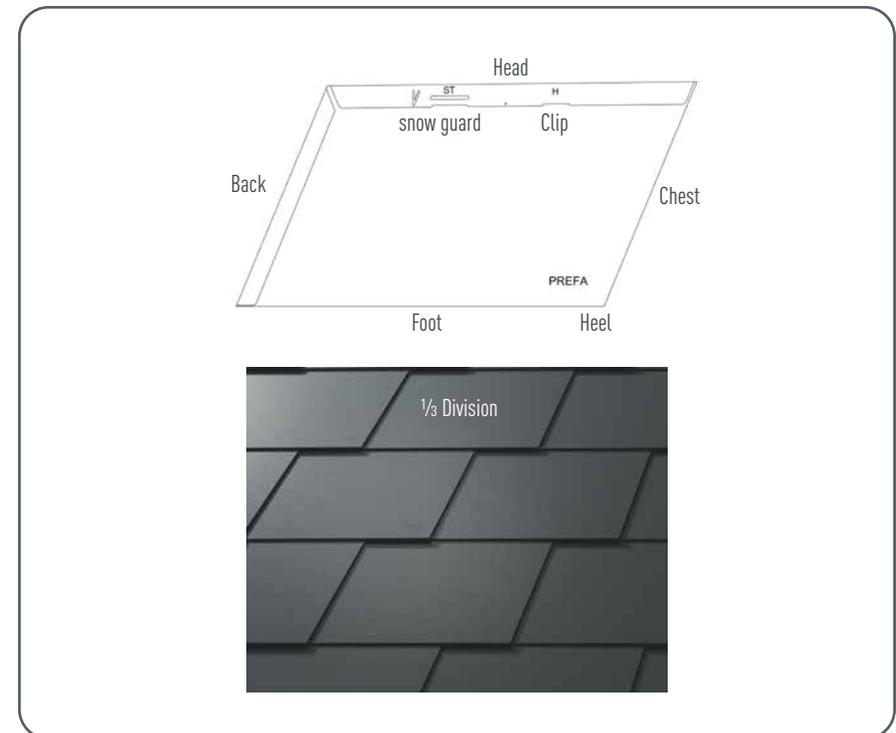


Figure 25 • Roof shingle - Covering direction and fastening

## INSTALLATION

- Adjust roof shingle and push into the folds.
- Fasten the roof shingle to the punched-out notch marked with an “H” using a clip and a 2.8/25 grooved nail.
- No fasteners may be placed on the rebates that run diagonally downwards (danger of capillary action).
- Keep the exact 1/3 division using the “V” marks on the roof shingles. (The exact design is clearly visible on the aligned snow guards.)

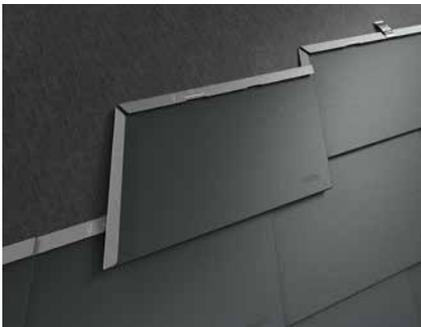
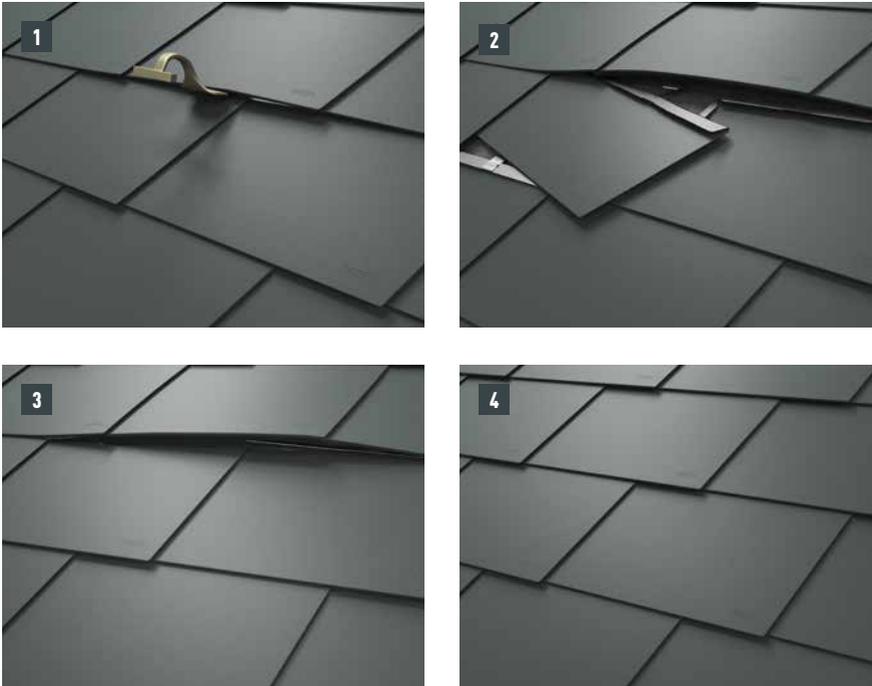


Figure 26 • Roof shingle - laying

### NOTE

Due to the shape of the roof shingle, there is a lowering at the heel of the roof shingle. Keep to this lowering when laying the first roof shingle in each row by not pushing the first roof shingle all the way to the top in the starter strip or fold. Leave the heel of the first roof shingle until the upper panel fold runs straight through over the entire length. Avoid covering the first roof shingle. Make sure that when connecting to the collar, the upper plate cover runs straight through over the entire length.

## REPLACING A ROOF SHINGLE



- Open the fold with the shuttering iron (Image 1).
- Open the clip and remove the shingle to be replaced (Image 2).
- Work in new shingle and carefully adjust folds (Image 3).
- A professionally replaced shingle should not be recognisable as such (Image 4).

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the roof shingles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.

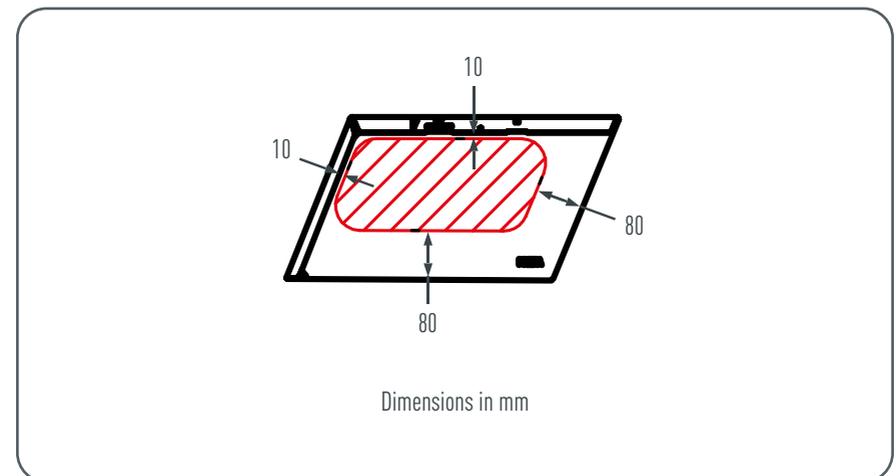
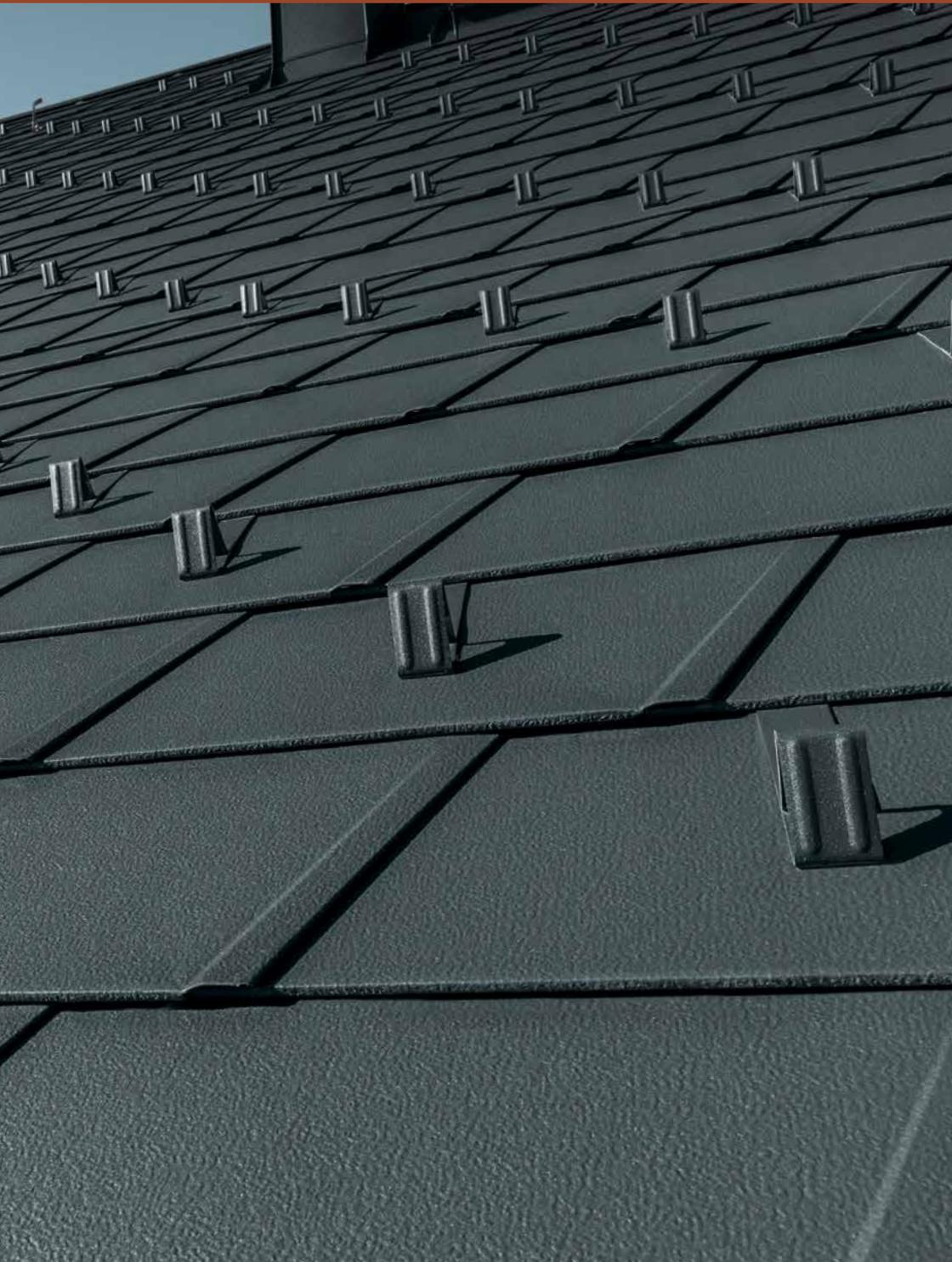


Figure 27 · Roof shingle - Installation area



## DS.19 SHINGLE

DS.19 shingle	
Material	coil-coated aluminium, 0,7 mm thick
Size	480×265 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2,75 kg = 8 shingles
Roof pitch	from 17° = approx. 31%
Substructure and separation layer	See chapter General information, a bitumen separation layer is required up to a roof pitch of 25°
Standard fastening	indirect, 1 pc. Patent clip and grooved nail/DS.19 shingle = 8 patent clips and grooved nails/m <sup>2</sup>

<p><b>PREFA GMBH ALU-DÄCHER UND FASSADEN</b> ALUMINIUMSTRASSE 2, D-98634 WASUNGEN 19</p> <p><b>2019 - DS.19 - 2 - D - 98634</b> EN 14783 Vollflächig unterstützte Dacheindeckungs- und Wandbekleidungs-elemente aus Aluminium</p> <p><b>PREFA DACHSCHINDEL DS. 19</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss®</p> <p><b>BRANDVERHALTEN:</b> Klasse A1</p> <p><b>VERHALTEN BEI BEANSPRUCHUNG DURCH FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend</p> <p><b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet</p>	<p><b>PREFA GMBH ALU-DÄCHER UND FASSADEN</b> ALUMINIUMSTRASSE 2, D-98634 WASUNGEN 19</p> <p><b>2019 - DS.19 - 1 - D - 98634</b> EN 14782 Vollflächig unterstützte Wandbekleidungs-elemente aus Aluminium</p> <p><b>PREFA DACHSCHINDEL DS. 19</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss®</p> <p><b>BRANDVERHALTEN:</b> Klasse A1</p> <p><b>VERHALTEN BEI BEANSPRUCHUNG DURCH FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend</p> <p><b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet</p>
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Figure 28 · DS.19 shingle



# LAYOUT

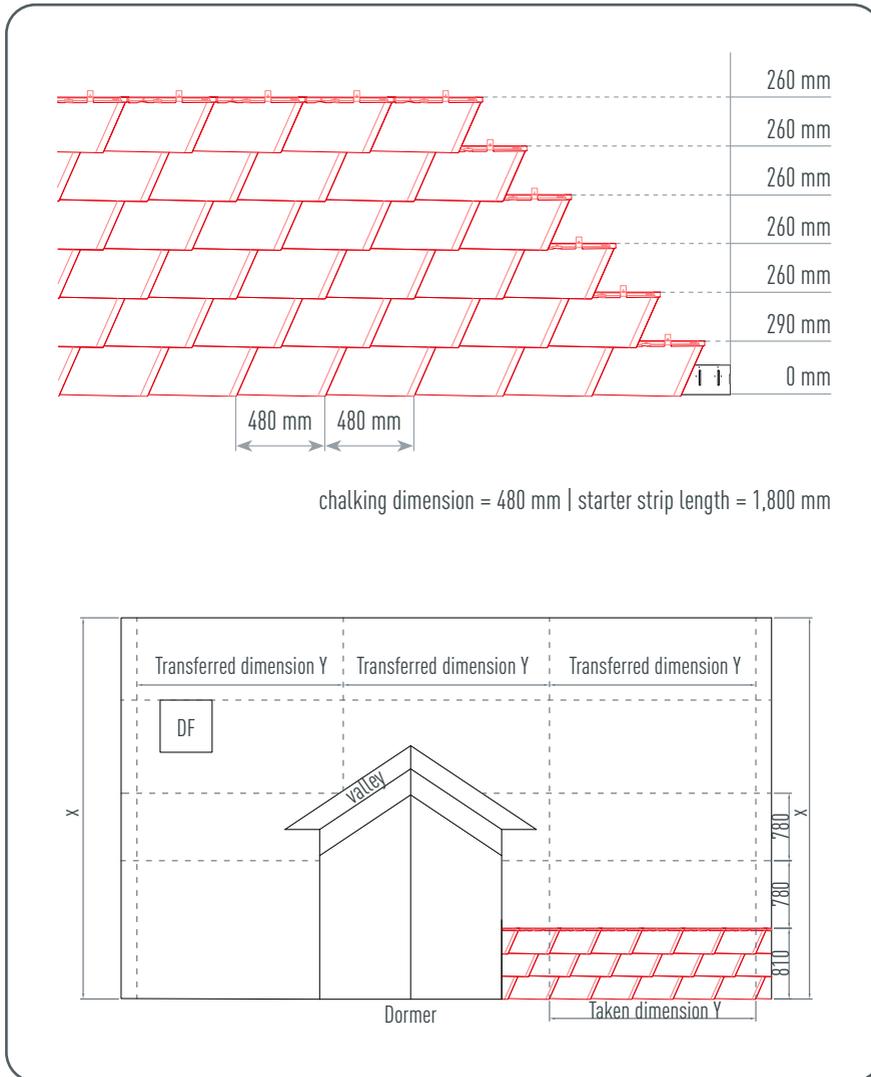


Figure 29 • DS.19 shingle – lacing dimension

# COVERING DIRECTION AND FASTENING

The DS.19 shingles are laid from right to left and should be laid in rows (in horizontal rows).

Each DS.19 shingle is fastened with a clip and a supplied 2.8/25 grooved nail (= standard fastening for built-up areas).

In areas particularly prone to storms, a wind load calculation is required and fastenings must be adjusted according to the calculation.

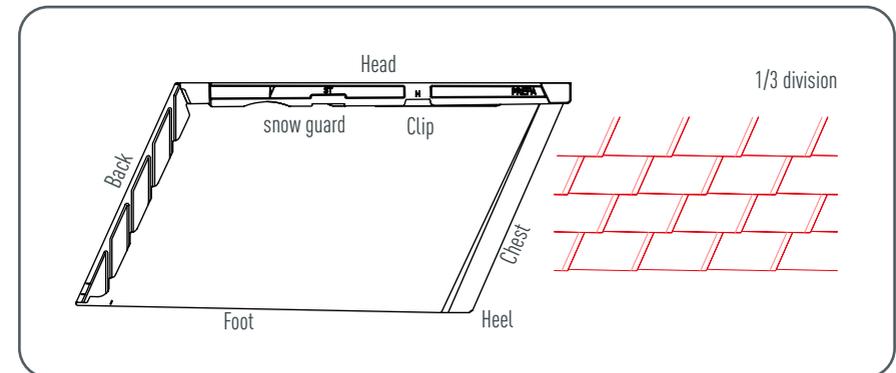
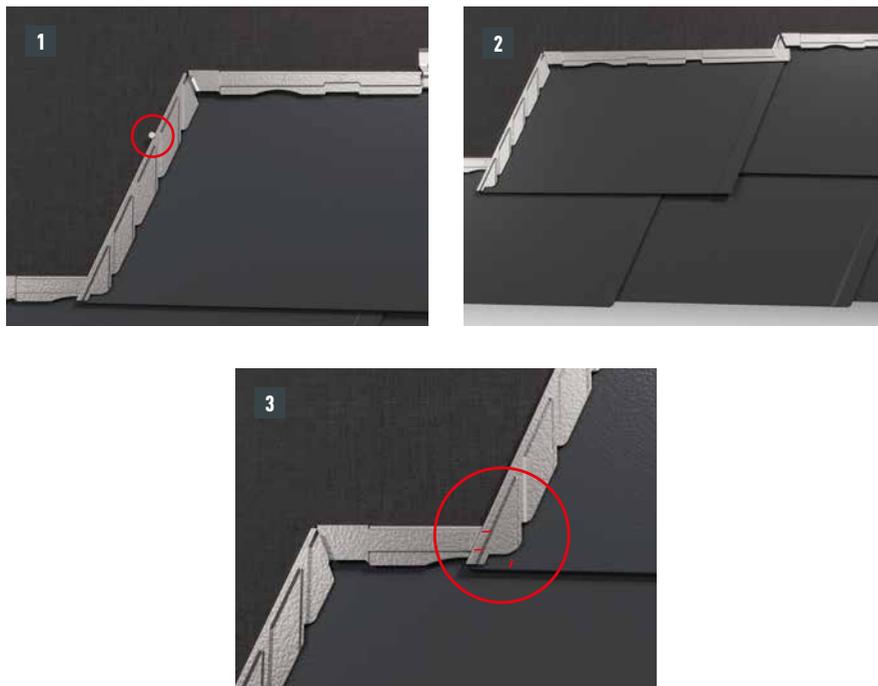


Figure 30 • DS.19 shingle - Covering direction and fastening

## INSTALLATION



- The first DS.19 shingle is to be fixed with a nail to the left of the sloping fold in each row in order to prevent it from being shifted sideways (Image 1).
- Adjust DS.19 shingle and push into the folds.
- Fasten the DS.19 shingle to the punched-out notch marked with an “H” using a patent clip and a supplied 2.8/25 grooved nail (Fig. 30).
- No fasteners may be placed on the rebates that run diagonally downwards (danger of capillary action).
- The notch on the lower shingle cover indicates the position of the fold of the following DS.19 shingle that runs diagonally downwards (Image 3).
- The two notches on the sloping fold of the DS.19 shingle mark the lower or upper end of the bead at the top of the shingle cover of the DS.19 shingle underneath (Image 3).

- Carefully follow all indentations.
- The exact design is clearly visible on the aligned snow guards.

### NOTE

Due to the shape of the DS.19 shingle, there is a lowering at the heel of the DS.19 shingle. Keep to this lowering when laying the first DS.19 shingle in each row by not pushing the first shingle all the way to the top in the starter strip or fold. Leave the heel of the first DS.19 shingle until the upper shingle fold runs straight through over the entire length.

Avoid covering the first DS.19 shingle. Make sure that when connecting to the collar, the upper shingle cover runs straight through over the entire length.

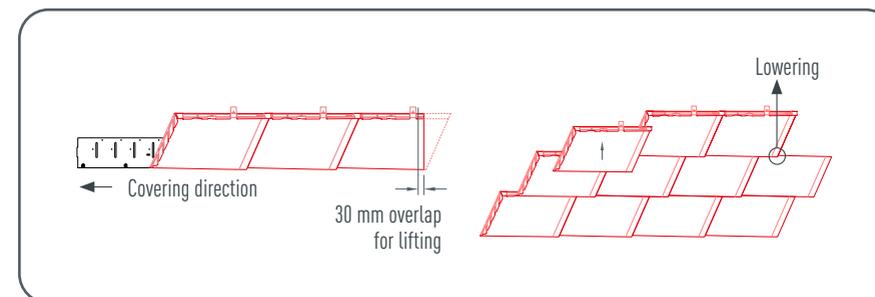
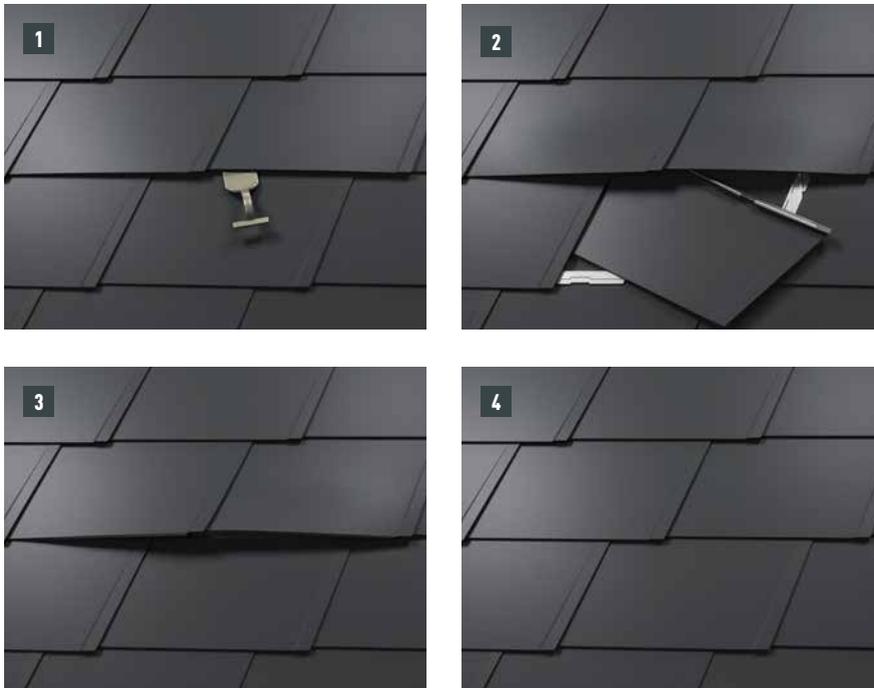


Figure 31 - DS.19 shingle - laying

## REPLACING A DS.19 SHINGLE



- Open the fold with the seaming iron (Image 1).
- Open the clip and remove the DS.19 shingle to be replaced (Image 2).
- Work in new DS.19 shingle and carefully adjust folds (Image 3).
- A professionally replaced DS.19 shingle should not be recognisable as such (Image 4).

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the DS.19 shingles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.

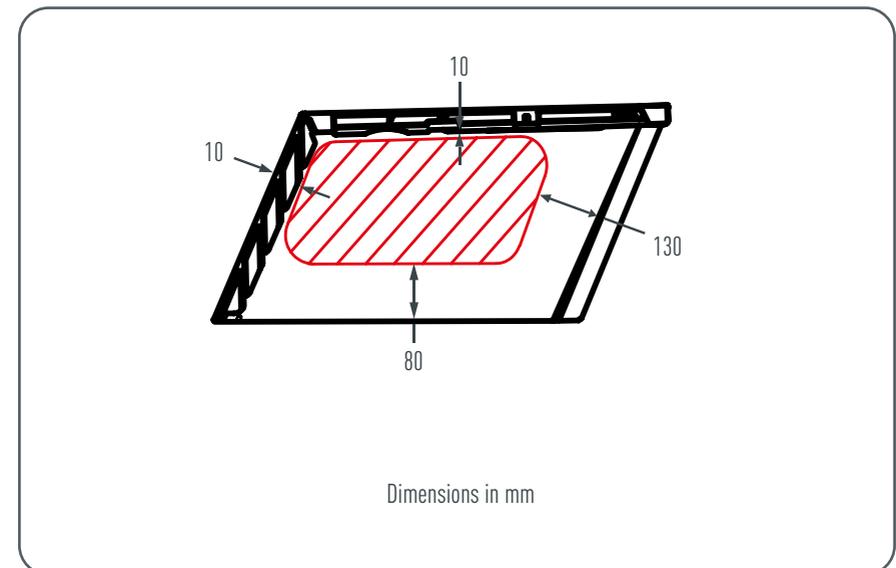


Figure 32 - DS.19 shingle - Installation area



## RHOMB ROOF TILE 29x29

Rhomboid roof tile 29x29	
Material	coil-coated aluminium, 0.7 mm thick
Size	290x290 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2.6 kg = 12 29x29 roof tiles
Roof pitch	from 22° = approx. 40%
Substructure and separation layer	See chapter General information
Standard fastening	1 pc. Rhomboid roof tile clip per 29x29 rhomboid roof tile = 12 clips/m <sup>2</sup> ; when using snow guards, these replace the rhomboid roof tile clips.

PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06	PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06	PREFA ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILIENTFELD 06
2013 - DR2 - A - 3182 EN 14783 Vollflächig unterstützte Dachdeckungselemente aus Aluminium  PREFA DACHRAUTE 29x29 Dicke: 0,7 mm, Beschichtung: P.10, Duragloss® BRANDVERHALTEN: Klasse A1	2013 - WR2 - A - 3182 EN 14783 Vollflächig unterstützte Wandbekleidungs-elemente aus Aluminium  PREFA WANDRAUTE 29x29 Dicke: 0,7 mm, Beschichtung: P.10, Duragloss® BRANDVERHALTEN: Klasse A1	2013 - WR1 - A - 3182 EN 14782 Selbsttragende Wandbekleidungs-elemente aus Aluminium  PREFA WANDRAUTE 29x29 Dicke: 0,7 mm, Beschichtung: P.10, Duragloss® BRANDVERHALTEN: Klasse A1
VERHALTEN BEI BEANSPRÜCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend  DAUERHAFTIGKEIT: 25µm + 62µm im Coil-Coating-Verfahren beschichtet	VERHALTEN BEI BEANSPRÜCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend  DAUERHAFTIGKEIT: 25µm + 62µm im Coil-Coating-Verfahren beschichtet	VERHALTEN BEI BEANSPRÜCHUNG DURCH FEUER VON AUSSEN: ohne weitere Prüfung entsprechend  DAUERHAFTIGKEIT: 25µm + 62µm im Coil-Coating-Verfahren beschichtet

Figure 33 · Rhomboid roof tile 29x29



## LAYOUT

### NOTE

Correct and precise layout is the best prerequisite for quick and neat installation.

To help with the installation of the PREFA 29 × 29 rhomboid roof tiles, it is advisable to create a grid of vertical cords at a distance of 450 mm. In order to keep the dimension exact in each row, half of the layout dimension can also be marked and checked at regular intervals if necessary. Align the starting plates with the notches in the starter strip (Fig. 35). It should be noted that the area for the lateral upstand (e.g. verge formation) is not in the centre of the 29 × 29 rhomboid roof tiles (observe symmetry/middle of the roof).

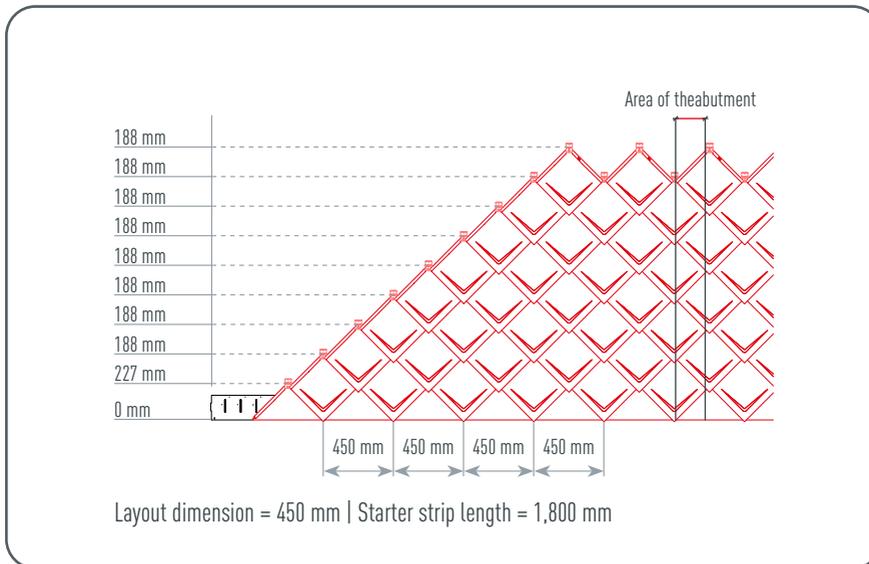


Figure 34 • 29×29 rhomboid roof tile – layout dimension

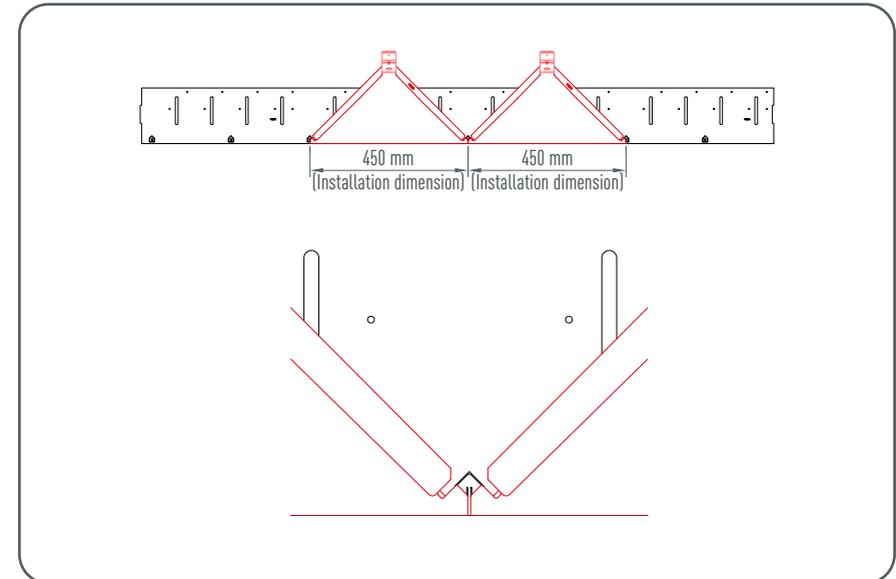


Figure 35 • 29×29 rhomboid roof tile - starter strip marking

## DIVISION DIMENSIONS (LACING DIMENSIONS)

PREFA 29×29 RHOMBOID ROOF TILE					
	Vertical spacing	Horizontal spacing		Vertical spacing	Horizontal spacing
1	450	227	21	9,450	3,987
2	900	415	22	9,900	4,175
3	1,350	603	23	10,350	4,363
4	1,800	791	24	10,800	4,551
5	2,250	979	25	11,250	4,739
6	2,700	1,167	26	11,700	4,927
7	3,150	1,355	27	12,150	5,115
8	3,600	1,543	28	12,600	5,303
9	4,050	1,731	29	13,050	5,491
10	4,500	1,919	30	13,500	5,679
11	4,950	2,107	31	13,950	5,867
12	5,400	2,295	32	14,400	6,055
13	5,850	2,483	33	14,850	6,243
14	6,300	2,671	34	15,300	6,431
15	6,750	2,859	35	15,750	6,619
16	7,200	3,047	36	16,200	6,807
17	7,650	3,235	37	16,650	6,995
18	8,100	3,423	38	17,100	7,183
19	8,550	3,611	39	17,550	7,371
20	9,000	3,799	40	18,000	7,559

Measurements in mm

## COVERING DIRECTION AND FASTENING

Covering is possible from left to right as well as from right to left. Adhere to the covering direction once started. Never cover to the middle (**Exception:** penetrations). Each 29 × 29 rhomboid roof tile is fastened with a clip and a supplied PREFA 2.8/25 grooved nail. If snow guards are also laid, there is no rhomboid roof tile clip (**only for 29 × 29 rhomboid roof tiles!**). For PREFA coverings over multiple layers of bitumen (e.g. bitumen shingles), you will need longer grooved nails, such as 2.8/40. Please state separately when ordering.

In areas particularly prone to storms, a wind load calculation is required and fastenings must be adjusted according to the calculation.

For bottom and top details, start and end plates are required (2.22 pcs./lfm).



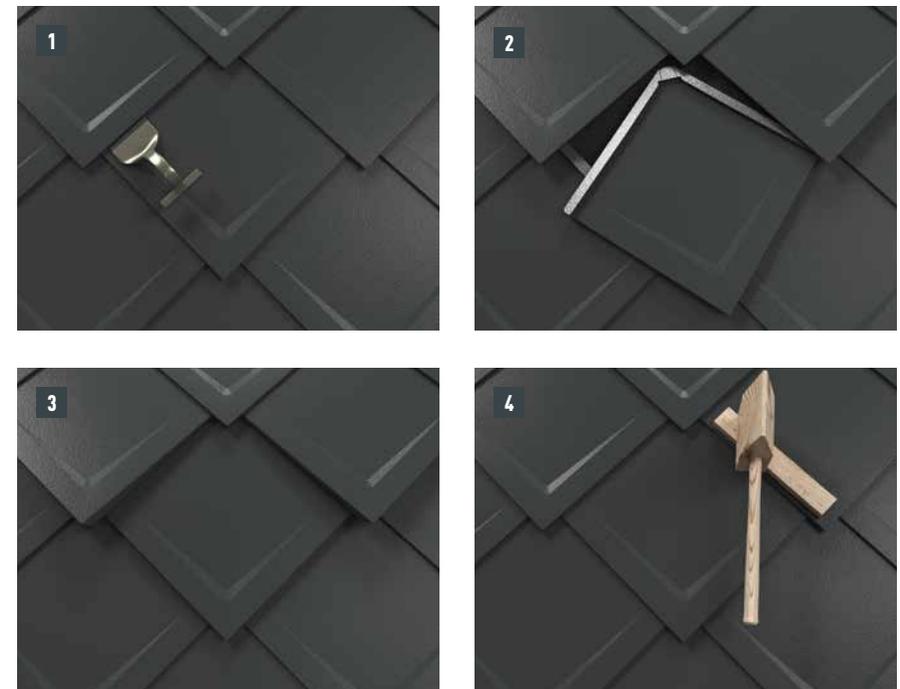
Figure 36 · PREFA 29×29 rhomboid roof tile – Assembly direction and fastening

## INSTALLATION



- Push the 29 × 29 rhomboid roof tiles into the folds and attach to the vertical lacing.
- Fasten the 29 × 29 rhomboid roof tile to the punched-out notch using a clip and a supplied 2.8/25 grooved nail (standard fastening). No clips may be placed on the lateral rebates that run diagonally downwards (danger of capillary action).

## REPLACING A 29×29 RHOMBOID ROOF TILE

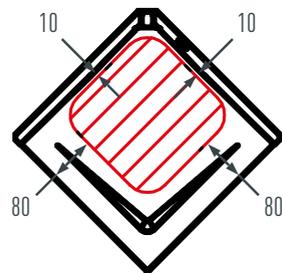


- Open the fold with the seaming iron (Image 1).
- Open the clip and remove the 29 × 29 rhomboid roof tile to be replaced (Image 2).
- Cover new 29 × 29 rhomboid roof tile and close clip again (Image 3).
- Carefully work in the rebates and restore them to their original shape (Image 4).

## INSTALLATION AREA

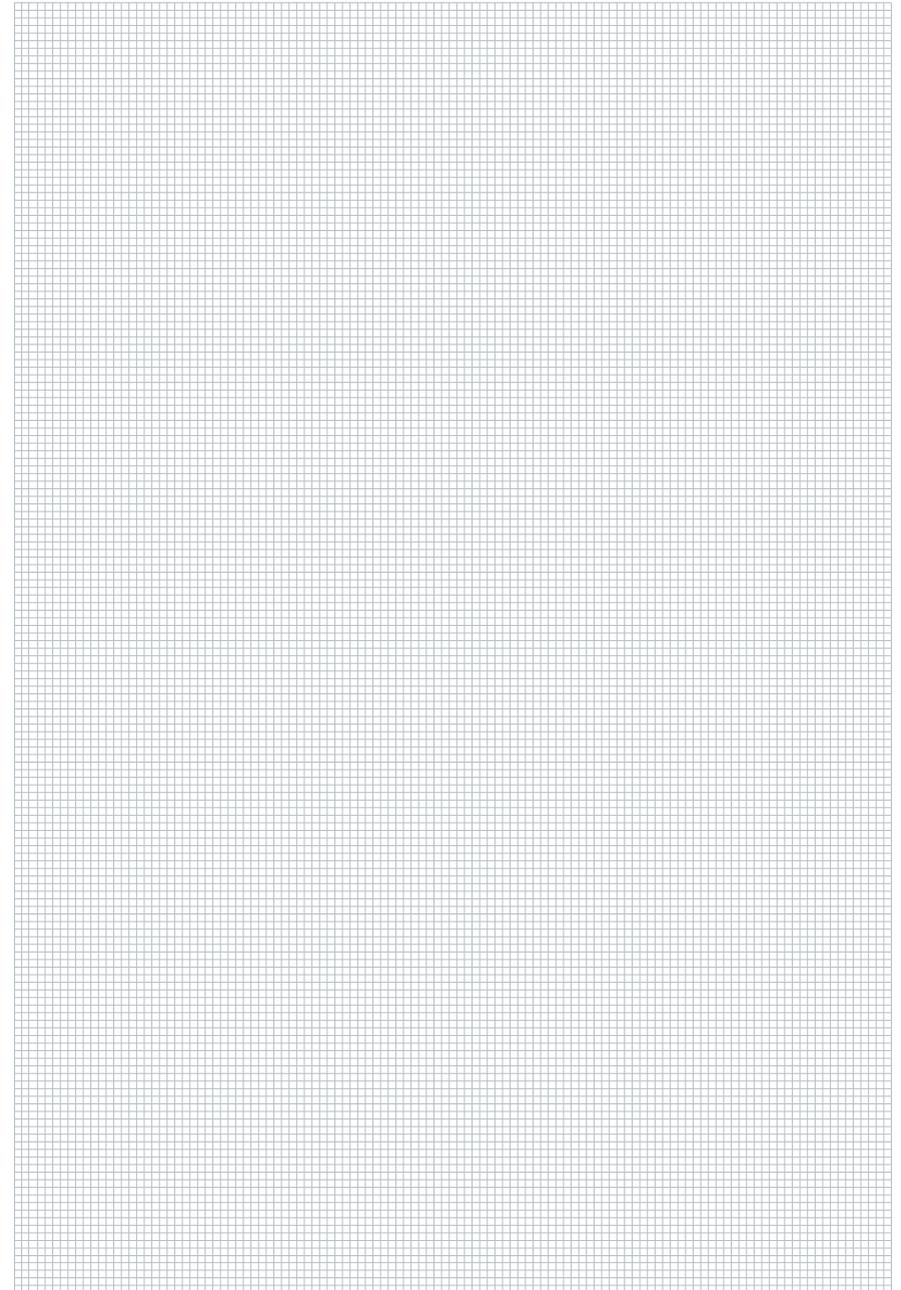
When installing roof accessory products, pay attention to the permissible installation area on the 29 × 29 rhomboid roof tiles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.



Dimensions in mm

Figure 37 · 29×29 rhomboid roof tile – Installation area





## RHOMB ROOF TILE 44x44

Rhomboid roof tile 44x44	
Material	coil-coated aluminium, 0.7 mm thick
Size	437x437 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2.6 kg = approx. 5 44x44 rhomboid roof tiles
Roof pitch	From 12° = approx. 21 % (with a rafter length of up to 7 m), From 14° = approx. 25 % (with a rafter length of 7–12 m), From 16° = approx. 29 % (with a rafter length of more than 12 m)
Substructure and separation layer	See chapter General information
Standard fastening	direct, 4 pcs. 2.8/25 grooved nails per 44x44 rhomboid roof tile

<b>PREFA</b> ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILILIENFELD 16	<b>PREFA</b> ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILILIENFELD 16	<b>PREFA</b> ALUMINIUMPRODUKTE GMBH WERKSTRASSE 1, A-3182 MARKTLILILIENFELD 16
2015 - DR44 - 2 - A - 3182 EN 14783 Vollflächig unterstützte Dachdeckungselemente aus Aluminium  <b>PREFA DACHRAUTE 44x44</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss®  <b>BRANDVERHALTEN:</b> Klasse A1  <b>VERHALTEN BEI                  BEANSPRÜCHUNG                  DURCH FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend  <b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet	2015 - WR44 - 2 - A - 3182 EN 14783 Vollflächig unterstützte Wandbekleidungs-elemente aus Aluminium  <b>PREFA WANDRAUTE 44x44</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss®  <b>BRANDVERHALTEN:</b> Klasse A1  <b>VERHALTEN BEI                  BEANSPRÜCHUNG                  DURCH FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend  <b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet	2015 - WR44 - 1 - A - 3182 EN 14782 Selbsttragende Wandbekleidungs-elemente aus Aluminium  <b>PREFA WANDRAUTE 44x44</b> Dicke: 0,7 mm, Beschichtung: P.10, Duragloss®  <b>BRANDVERHALTEN:</b> Klasse A1  <b>VERHALTEN BEI                  BEANSPRÜCHUNG                  DURCH FEUER VON AUSSEN:</b> ohne weitere Prüfung entsprechend  <b>DAUERHAFTIGKEIT:</b> 25µm - 62µm im Coil-Coating-Verfahren beschichtet

Figure 38 · Rhomboid roof tile 44x44



## LAYOUT

### NOTE

Correct and precise layout is the best prerequisite for quick and neat installation.

To help with the laying of the PREFA 44 × 44 rhomboid roof tiles, it is advisable to create a grid of vertical cords at a distance of 675 mm. In order to keep the dimension exact in each row, half of the layout dimension can also be marked and checked at regular intervals if necessary. Align the starting plates with the notches in the starter strip. It should be noted that the area for the lateral upstand (e.g. verge formation) is not in the centre of the 44 × 44 rhomboid roof tiles (observe symmetry/middle of the roof).

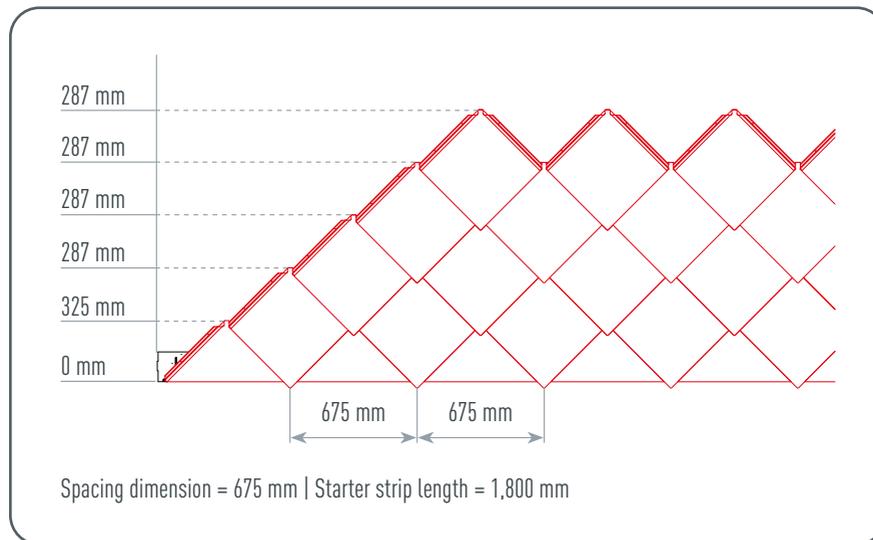


Figure 39 · 44×44 rhomboid roof tile – lacing dimension

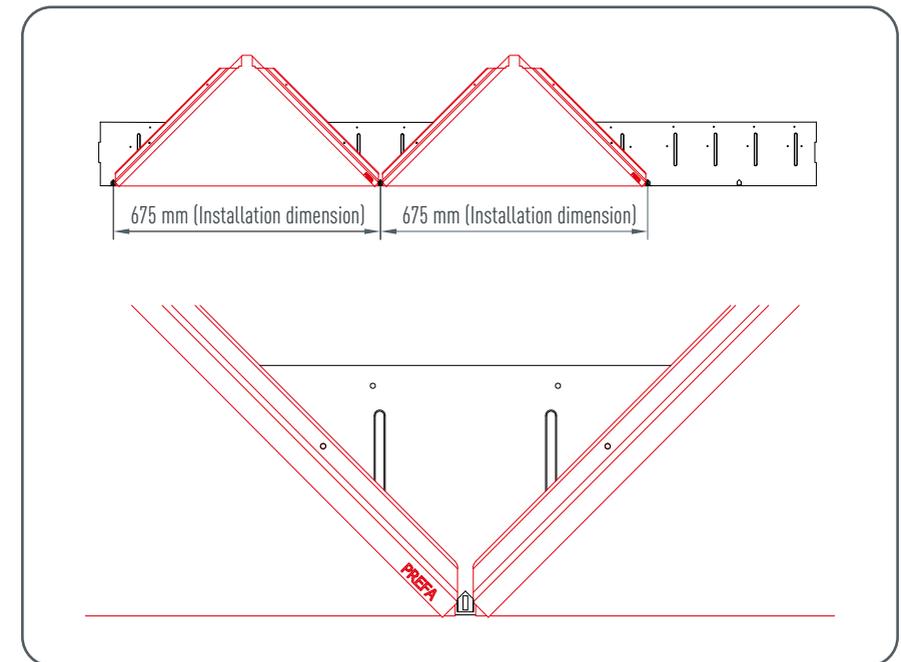


Figure 40 · 44×44 rhomboid roof tile – lacing

## DIVISION DIMENSIONS (LACING DIMENSIONS)

PREFA 44×44 RHOMBOID ROOF TILE					
	Vertical spacing	Horizontal spacing		Vertical spacing	Horizontal spacing
1	675	325	21	14,175	6,065
2	1,350	612	22	14,850	6,352
3	2,025	899	23	15,525	6,639
4	2,700	1,186	24	16,200	6,926
5	3,375	1,473	25	16,875	7,213
6	4,050	1,760	26	17,550	7,500
7	4,725	2,047	27	18,225	7,787
8	5,400	2,334	28	18,900	8,074
9	6,075	2,621	29	19,575	8,361
10	6,750	2,908	30	20,250	8,648
11	7,425	3,195	31	20,925	8,935
12	8,100	3,482	32	21,600	9,222
13	8,775	3,769	33	22,275	9,509
14	9,450	4,056	34	22,950	9,796
15	10,125	4,343	35	23,625	10,083
16	10,800	4,630	36	24,300	10,370
17	11,475	4,917	37	24,975	10,657
18	12,150	5,204	38	25,650	10,944
19	12,825	5,491	39	26,325	11,231
20	13,500	5,778	40	27,000	11,518

Measurements in mm

## INSTALLATION DIRECTION AND FASTENING

Installation is possible from left to right as well as from right to left. Adhere to the covering direction once started. Never cover to the middle (Exception: penetrations). For bottom and top connections, start and end plates are required (1.48 pcs./lfm).

## INSTALLATION



- Push 44 × 44 rhomboid roof tiles into the rebates, align to the vertical lacing and fasten to the pre-punched holes with the supplied PREFA 2.8/25 grooved nails (standard fastening 4 pcs. per 44 × 44 rhomboid roof tile).
- For PREFA coverings over multiple layers of bitumen (e.g. bitumen shingles), you will need longer grooved nails, such as 2.8/40. Please state separately when ordering.
- In areas particularly prone to storms, a wind load calculation is required and fastenings must be adjusted according to the calculation.

If a protrusion of the 44 × 44 rhomboid roof tile from the eaves is not desired (Image 2), an additional hanging strip can be installed before laying the start plates (Image 3).

**CAUTION:** Do not bend the lower tip of the 44 × 44 rhomboid roof tile downwards.

## REPLACING A 44×44 RHOMBOID ROOF TILE



- Open the fold with the seaming iron (Image 1).
- Loosen the nails and remove the 44 × 44 rhomboid roof tile to be replaced (Image 2).
- Slightly open the seam of the new 44 × 44 rhomboid roof tile, push up and fasten (Image 3).  
**CAUTION: Do not use the pre-punched holes.**
- Carefully work in the rebates and restore them to their original shape (Image 4).

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the 44 × 44 rhomboid roof tiles. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.

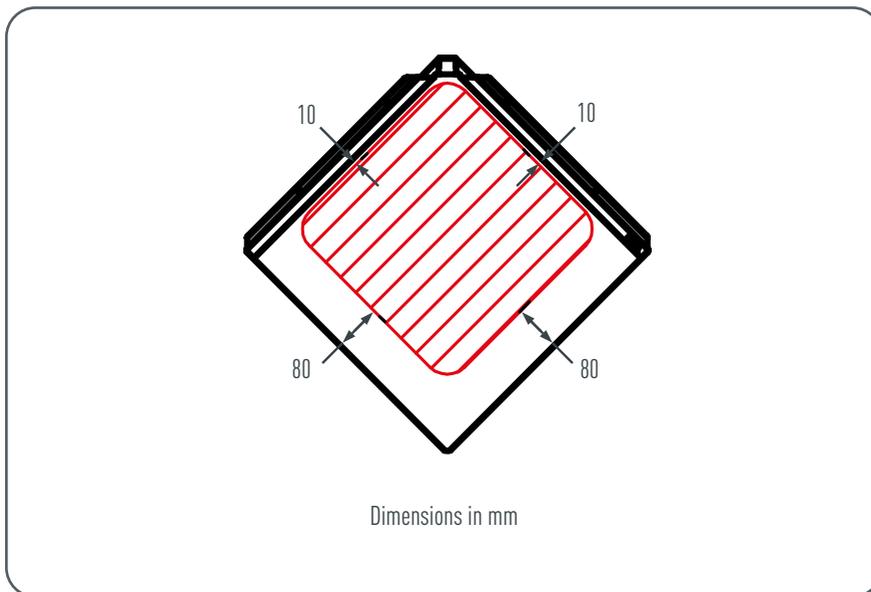
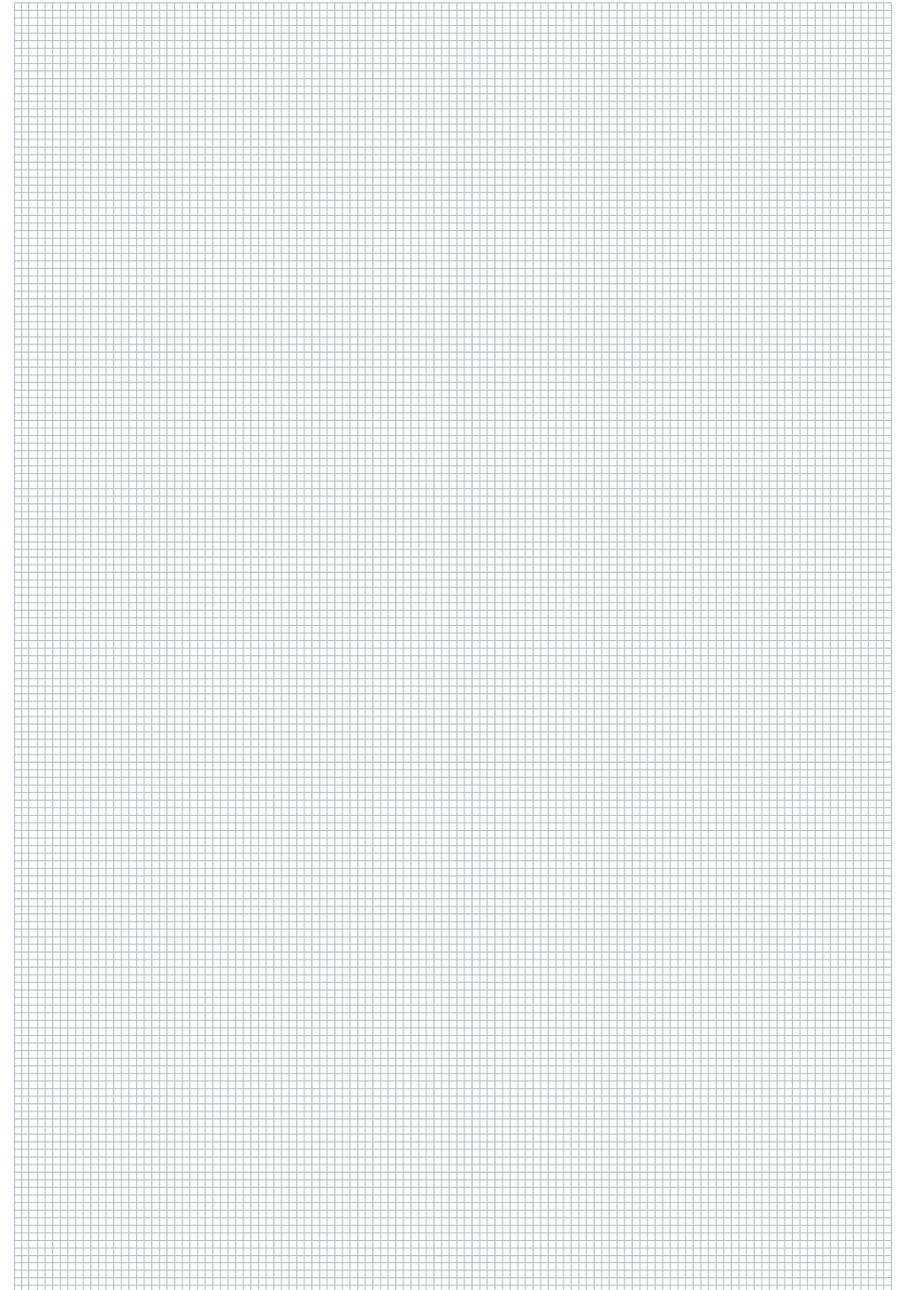


Figure 41 · 44×44 rhomboid roof tile – Installation area





## FX.12 ROOF PANEL

FX.12 roof panel	
Material	coil-coated aluminium, 0.7 mm thick
Size	700×420 mm and 1,400×420 mm in installed area
Weight	1 m <sup>2</sup> = approx. 2.4–2.5 kg = 3.4 pcs./m <sup>2</sup> (small panels) or 1.7 pcs./m <sup>2</sup> (large panels)
Roof pitch	from 17° = approx. 31%
Substructure and separation layer	See chapter General information, a bitumen separation layer is required up to a roof pitch of 25°
Standard fastening	direct, with 3 (small panel) or 5 (large panel) 2.8/25 grooved nails



Figure 42 · FX.12 roof panel



## LAYOUT

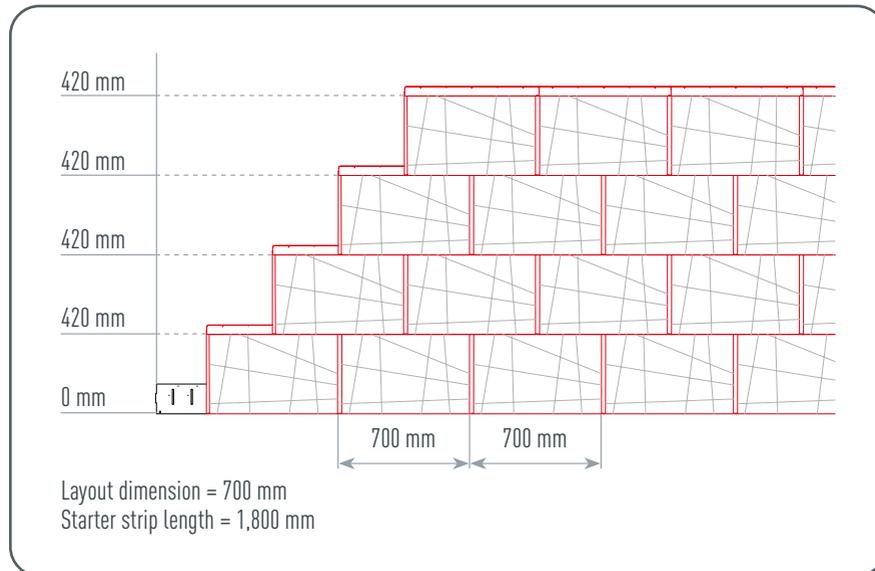


Figure 43 • FX.12 roof panel -Layout dimension

## PREPARING THE INSTALLATION

When installing the FX.12 roof panels, no angular fold may lie directly over another, a lateral offset of at least 220 mm must be observed. When combining large and small FX.12 panels, for each new row, the joint of the first panel must be started in area “X” (Fig. 44).

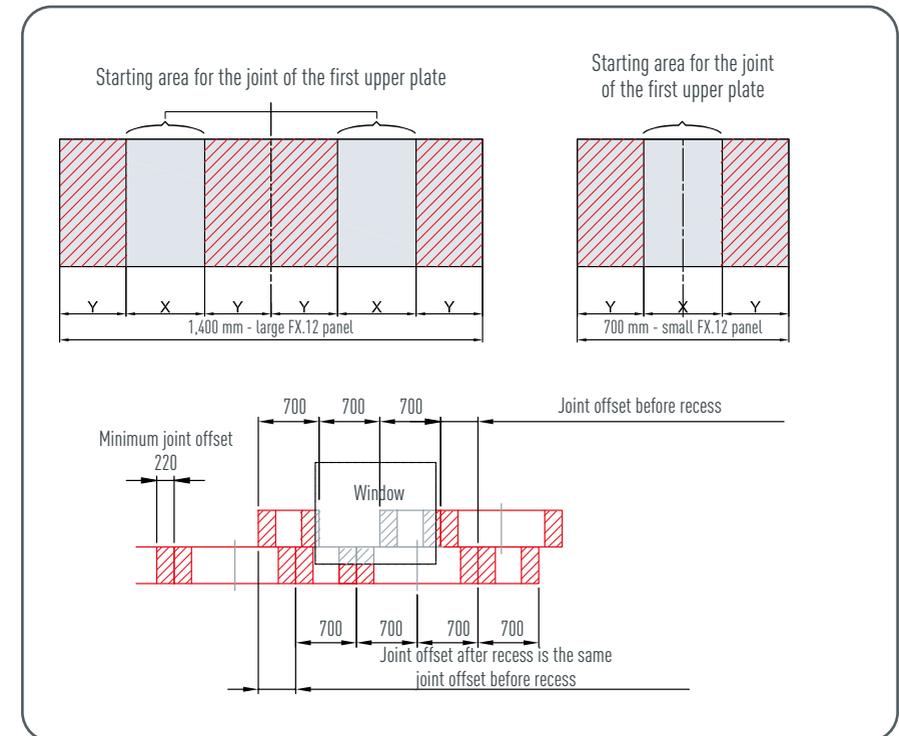


Figure 44 • FX.12 roof panel - Preparing the installation

After an opening (window, chimney, etc.), the joint of the first panel must be at a multiple of 700 mm from the joint of the last one placed before the opening.

Note: The panel spacing must be transferred for the starting row. For each additional row, it is sufficient to maintain the joint offset after opening.

## QUANTITY CALCULATION OF FX.12 ROOF PANEL

The calculation does not take into account offcuts or window and chimney openings. Normally (for openings up to approx. 3 m<sup>2</sup>), the waste is offset and is compensated by rounding up the packaging units.

In principle, it is possible to install FX.12 with large panels only. The desired effect of the irregularity due to panel length and offset is considerably reduced as a result. The piece ratio of 2 parts of large panels and 1 part of small panels taken into account in the calculation has turned out to be a good solution in terms of installation, as well as both technically and visually.

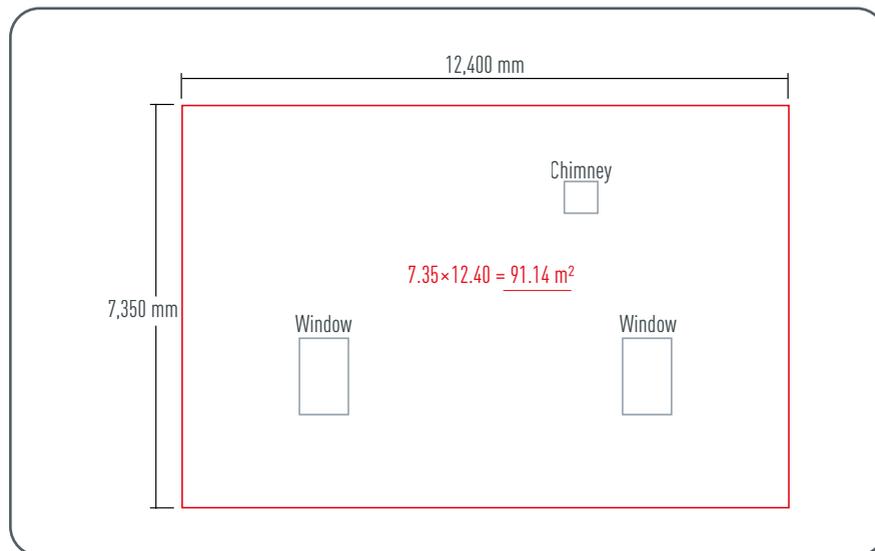


Figure 45 • FX.12 roof panel – example of quantity calculation

Examples for FX.12 quantity calculation	
Surface area of large FX.12 panel	0.588 m <sup>2</sup>
Surface area of small FX.12 panel	0.294 m <sup>2</sup>
Unit ratio	FX.12 large panel: FX.12 small panel = 2: 1
Surface ratio	FX.12 large panel: FX.12 small panel = 4: 1
Quantity calculation share of small panel (in m <sup>2</sup> )	$91.14 \text{ m}^2 / 5 = 18.228 \text{ m}^2$
Quantity calculation share of small panel (in pcs.)	$18.228 \text{ m}^2 / 0.294 \text{ m}^2 = 62 \text{ pcs.}$
Quantity calculation share of large panel (in pcs.)	$62 \text{ pcs.} \times 2 = 124 \text{ pcs.}$
QUANTITY DETERMINATION OF FX.12 PACKS	
Packaging unit:	20 pc. (11.76 m <sup>2</sup> ) oder 10 pcs. (5.88 m <sup>2</sup> ) for large panel, 28 pcs. (8.24 m <sup>2</sup> ) for small panel
Large panel	124 pcs. = 7 packs (11.76 m <sup>2</sup> each)
Small panel	62 pcs. = 3 packs (8.24 m <sup>2</sup> each)

### NOTE

With a piece ratio of 2:1 (large panels:small panels), the surface area of the small FX.12 panels is 20%.

## INSTALLATION EXAMPLE

### EXAMPLE OF INCORRECT INSTALLATION

Acutted FX.12 panel was reused on the other side of the opening (Detail A). Thus, a correct pattern is no longer guaranteed (Detail B) and in the worst case can lead to an overlapping of vertical joints (Detail C). For this reason, installation examples were created for an optimal joint offset.

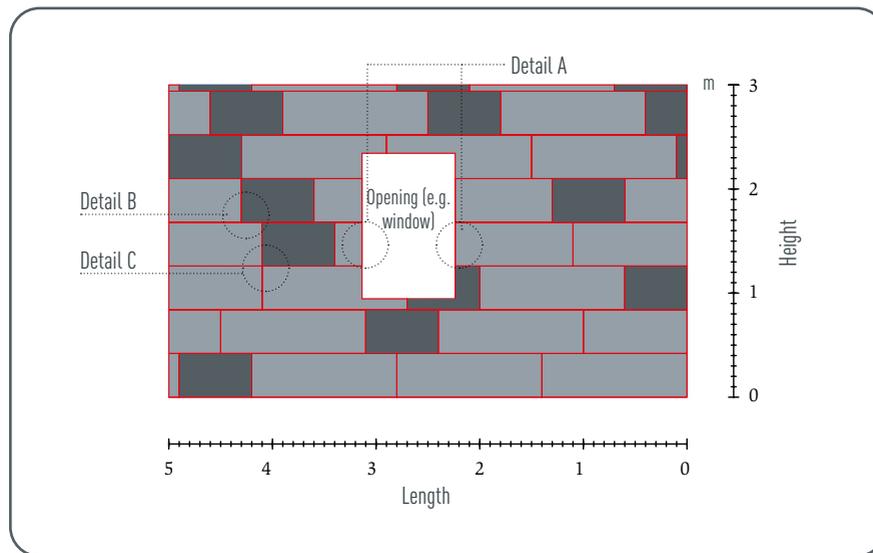


Figure 46 · FX.12 roof panel – example of incorrect laying

### NOTE

for your support you will find installation examples below with a piece ratio of 2:1 (large panels:small panels).

A digital version of this (.pdf and .dwg) is also available for download on our website.

[uk.prefa.com](http://uk.prefa.com)

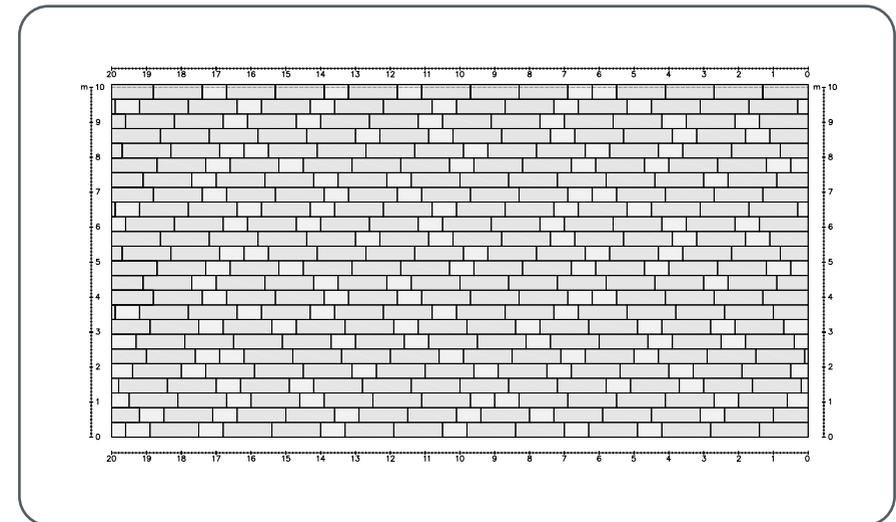


Figure 47 · FX.12 roof panel – installation example variant 1

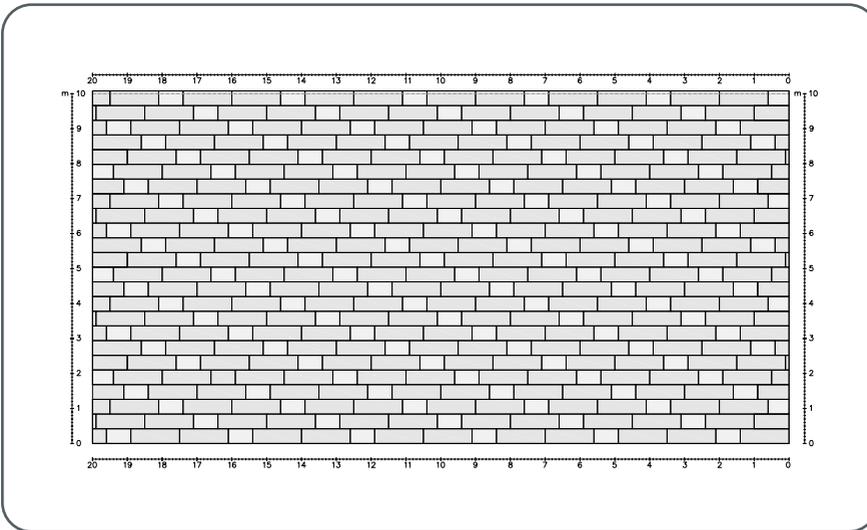


Figure 48 • FX.12 roof panel – installation example variant 2

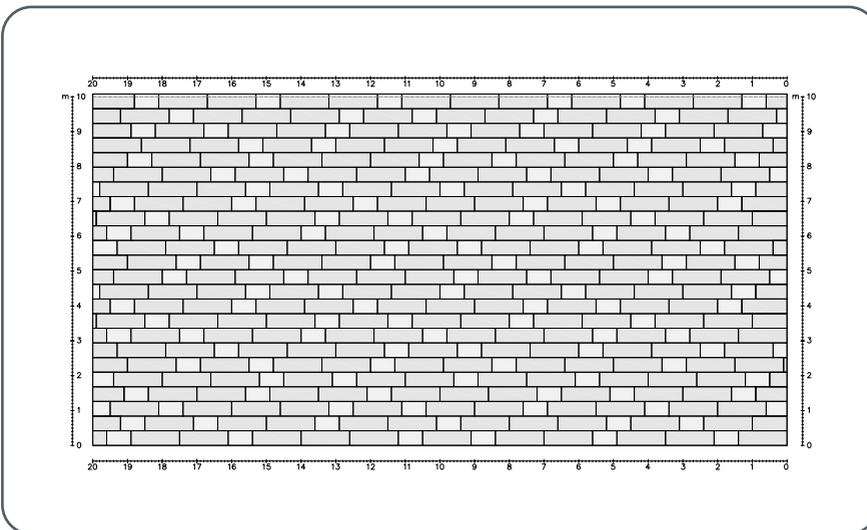
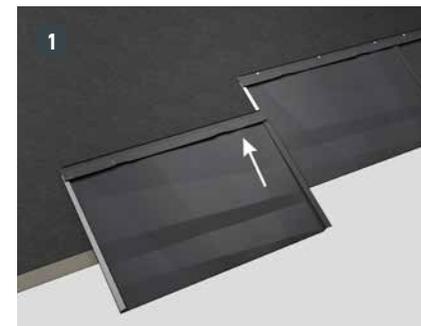


Figure 49 • FX.12 roof panel – installation example variant 3

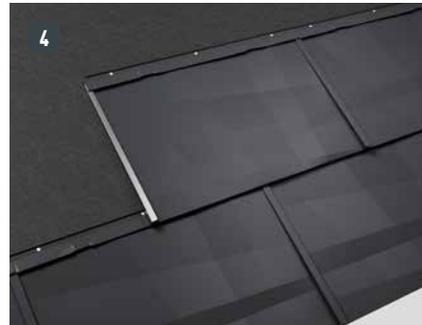
## INSTALLATION AND COVERING DIRECTION

- The FX.12 roof panels are to be installed from right to left in horizontal rows.
- Adjust FX.12 roof panel and push into the folds. Push the bottom edge of the panel lightly with the handle of the hammer.
- Press the panel slightly to the left (however, the angle fold should not be deformed) and align it with the horizontal chalk line or at the mark on the starter strip.
- Horizontal layout: 420 mm (beginning with upper edge of the first row of FX.12 roof panels).



## FASTENING

- Fasten each panel with the supplied PREFA 2.8/25 ring shank nails. For PREFA coverings over thicker layers of bitumen, you will need longer ring nails, such as 2.8/40. Please state this separately when ordering.
- In areas particularly prone to storms, a wind load calculation is required and fastenings must be adapted according to the calculation.



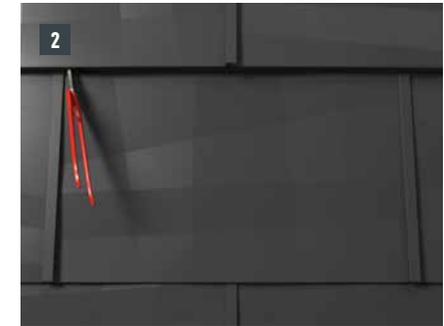
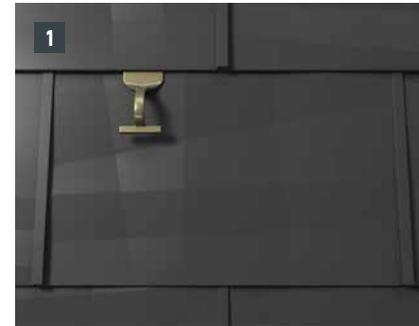
### Standard fastening

- FX.12 large panel: 5 pc. Ring shank nails
- FX.12 small panel: 3 pc. Ring shank nails

### NOTE

for additional fixings, prepared markings should be used.  
When installing FX.12, a minimum offset of 220 mm must be observed.

## REPLACING AN FX.12 ROOF PANEL



- Lift up the upper transverse fold of the damaged FX.12 roof panel.
- Remove the fastening and cut into the upper patent fold (Image 2). Then pull the FX.12 roof panel downwards.



- Prepare new FX.12 roof panel according to Image 3.
- Push the new FX.12 roof panel in position and fasten it. Bend the fold of the upper FX.12 roof panel downwards at an angle of approx. 90°.  
**CAUTION:** Do not use the pre-punched holes.



- Carefully adjust the fold into the original shape.
- A professionally replaced FX.12 roof panel should not be recognisable as such.

## INSTALLATION AREA

When installing roof accessory products, pay attention to the permissible installation area on the FX.12 roof panels. The figure below shows the installation area for accessory products on bases. Different installation areas may be defined for other accessory products.

If it is not possible to adhere to the installation area, a production board must be folded in.

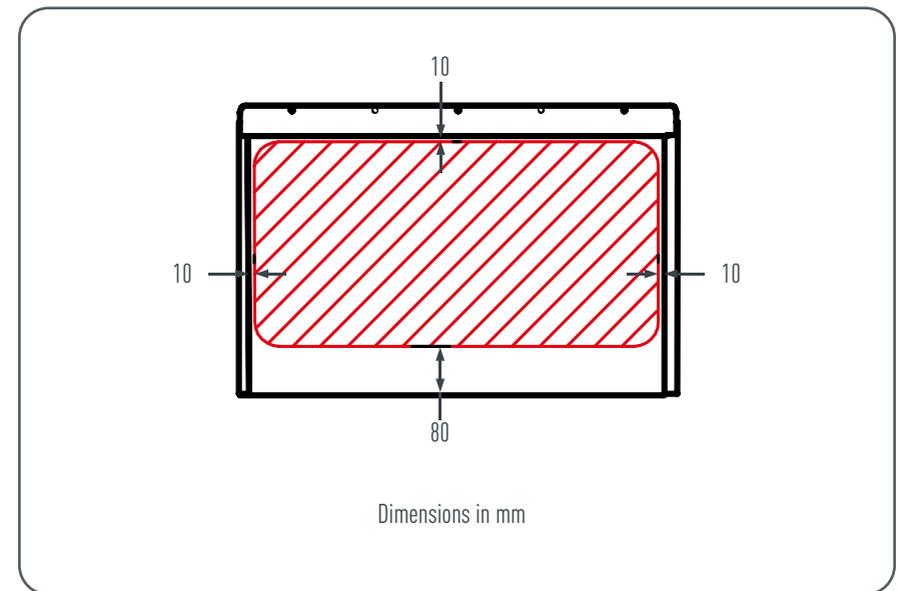


Figure 50 · FX.12 roof panel – Installation area

## STARTER STRIP AND DETAILS

### 1 STARTER STRIP FOR ROOF TILE



Figure 51 • Starter strip for roof tile

#### 1.1 INSTALLATION OF THE STARTER STRIP

The eaves overhang of the starter strip should be in the rear third of the gutter width and may not exceed 80 mm.

**WHEN INSTALLING ON BOARDED SUBSTRATE:** Measure from the top of the first roof tile 450 mm towards the eaves (ensure that the eaves overhang is between 30 and 80 mm). Make 150 mm (starter strip width) from below a mark (= starter strip width upper edge).

**WHEN INSTALLING ON BATTENS:** Measure from the upper edge of the first main batten 470 mm towards the eaves. Make 150 mm (starter strip width) from below a mark (= starter strip width upper edge, Image 13).

Repeat the respective process on the second side of the eaves and connect these marks with a horizontal chalk line.

Pin the starter strip through before nailing out any pre-punched holes with the supplied PREFA nails. Make sure that the projection of the starter strip to the eaves board is no more than 80 mm.

#### NOTE

The more precisely you install the starter strip, the easier it will be for you to professionally lay the PREFA roof system.

Make sure that the starter strip is installed under the separation layer.

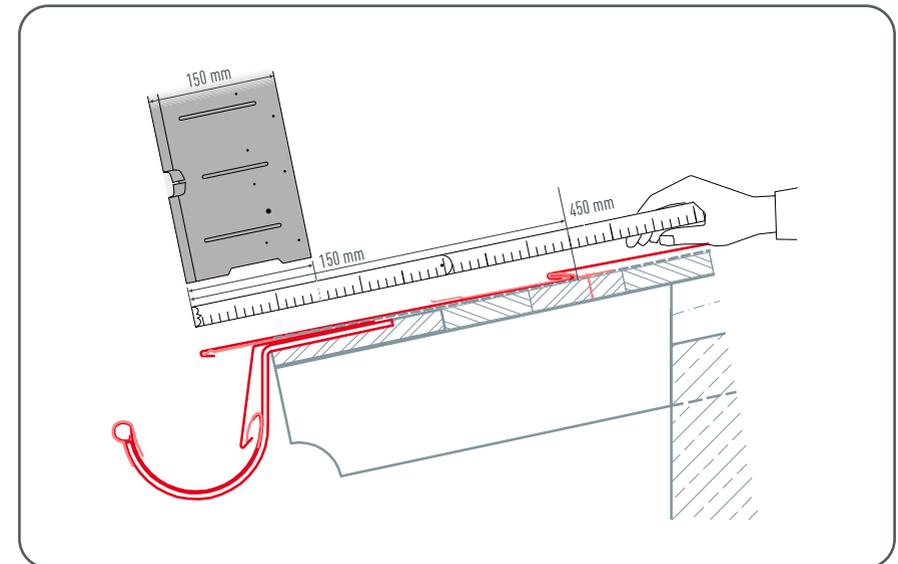


Figure 52 • Starter strip for roof tile

## 2 STARTER STRIP

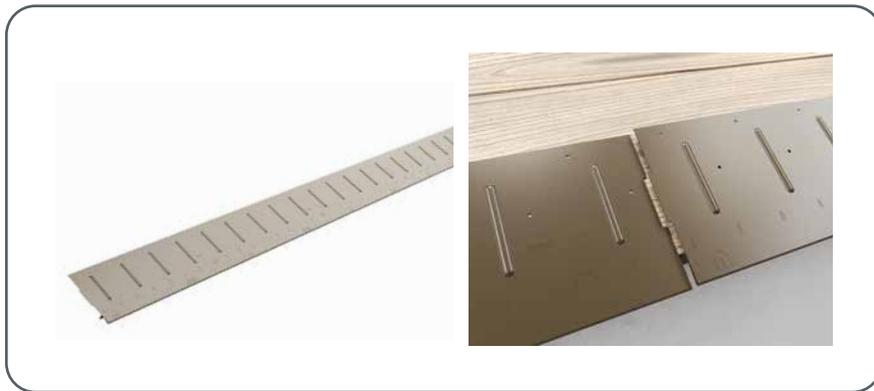


Figure 53 • Starter strip

### 2.1 INSTALLATION OF THE STARTER STRIP

The eaves overhang of the starter strip should be in the rear third of the gutter width and may not exceed 80 mm.

The starter strip is attached in a straight line over the entire length of the eaves with the help of a cord cut off beforehand.

The starter strip is to be nailed storm-proof (nail out all pre-punched holes). This is followed by the vertical angular impact.

Pin the starter strip through before nailing out any pre-punched holes with the supplied PREFA nails.



Figure 54 • Starter strip

#### NOTE

The more precisely you install the starter strip, the easier it will be for you to professionally lay the PREFA roof system.

**CAUTION: The markings for the respective PREFA roof covering must be taken into account.**

Make sure that the starter strip is laid under the separation layer (Fig. 54).

## 2.2 SPECIAL FEATURE OF R.16 ROOF TILE AND FX.12 ROOF PANEL

Align the starter strip with the embossed notch for R.16 roof tile or FX.12 roof panel to the middle of the roof.

Make sure that the vertical seam of R16/FX12 roof panel is not positioned at an abutment or verge upstand. If necessary, move the starter strip by a quarter of the dimension of an R.16 roof tile or an FX.12 roof panel.



Figure 55 • Starter strip marking for R.16 roof tile and FX.12 roof panel

## 2.3 SPECIAL FEATURE OF 29×29 RHOMBOID ROOF TILE AND 44×44 RHOMBOID ROOF TILE

Align the starter strip with the embossed notch to the middle of the roof.

It should be noted that the area for the lateral upstand (e.g. verge formation) is not in the centre of the 29 × 29 or 44 × 44 rhomboid roof tiles. If necessary, move the starter strip by a quarter of the dimension (1/4 of the vertical lacing dimension) of a 29 × 29 or 44 × 44 rhomboid roof tile.



Figure 56 • Starter strip markings for 29×29 rhomboid roof tile and 44×44 rhomboid roof tile

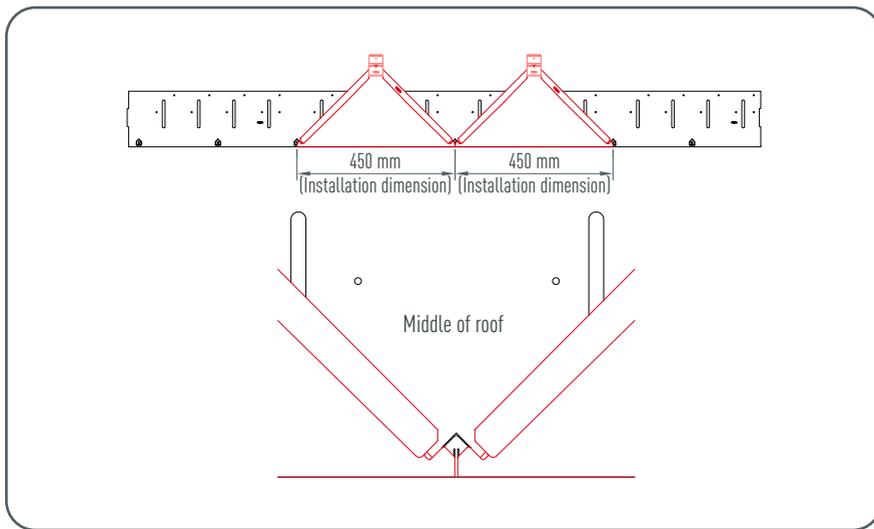


Figure 57 • Starter strip - Special feature of 29×29 rhomboid roof tile

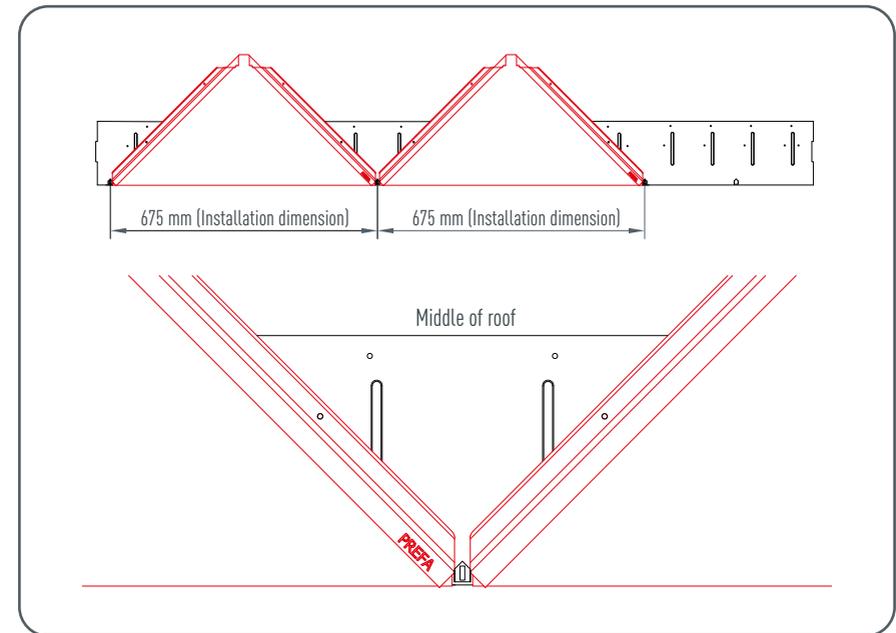
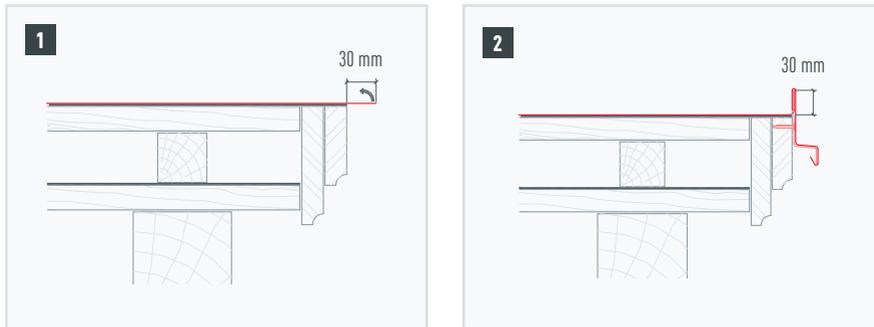
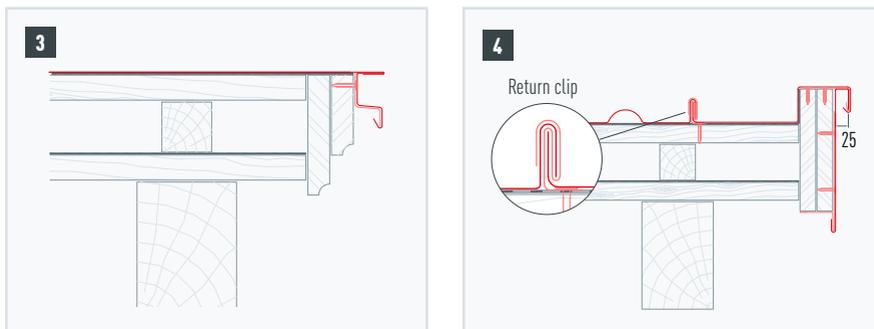


Figure 58 • Starter strip - Special feature of 44×44 rhomboid roof tile

## 3 GABLE FORMATION AND LATERAL CONNECTION TO ROOF PENETRATIONS



- Bend the PREFA roof covering upwards 30 mm at a right angle to the roof surface (Image 1).
- Crimp the upper part of the verge retainer to the board and fix it with nails/screws to be storm proof. (Image 2)



- In areas with snow loads, the gables should be designed as shown in Image 3.
- Use the variant shown in Image 4 for a verge design with a raised front board.



Figure 59 • Gable formation

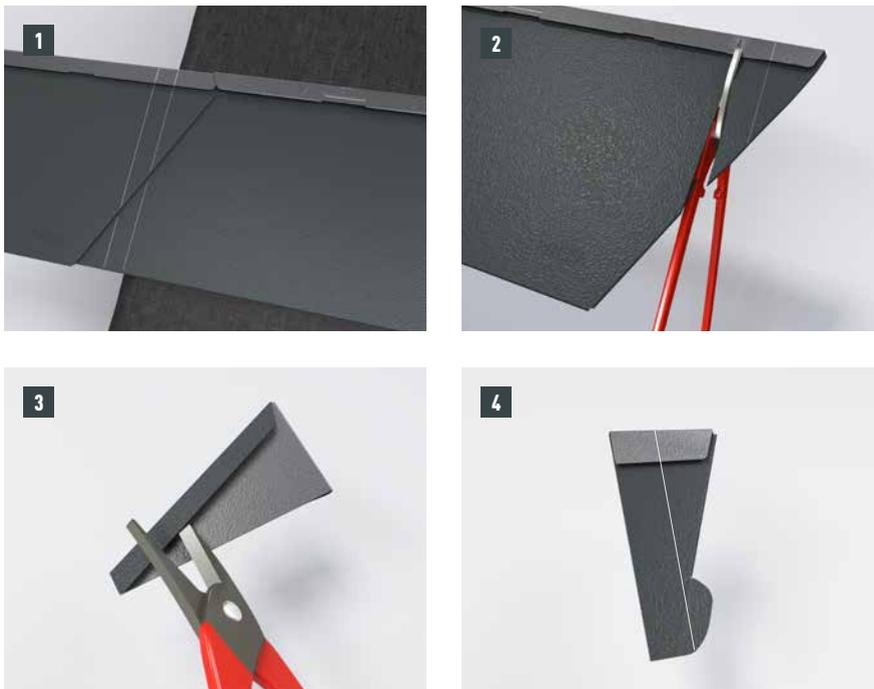
### 3.1 SPECIAL FEATURE OF R.16 ROOF TILE AND FX.12 ROOF PANEL



Notch the upper patent fold in the area of the raised edge so that a hook fold remains and bend the R.16 roof tile or the FX.12 roof panel upwards 30 mm at a right angle to the roof surface.

## 3.2 SPECIAL FEATURE OF ROOF SHINGLE

With each left-hand upstand of the roof shingle (gable strip and border), the folds running diagonally downwards are to be notched in order to avoid any capillary action.



- Mark the upstand area and 30 mm fold allowance (Image 1).
- Cut roof shingles with fold allowance (Image 2).
- Make the rebate notch (Image 3 + 4).



- Cover the notched roof shingle and edge it up (Image 5 + 6).

## 3.2.1 Variations with shortened shingles or fitted shingles.

Other variants are to place the sloping seams with a shortened roof shingle or with a fitting shingle outside of the upstand area.

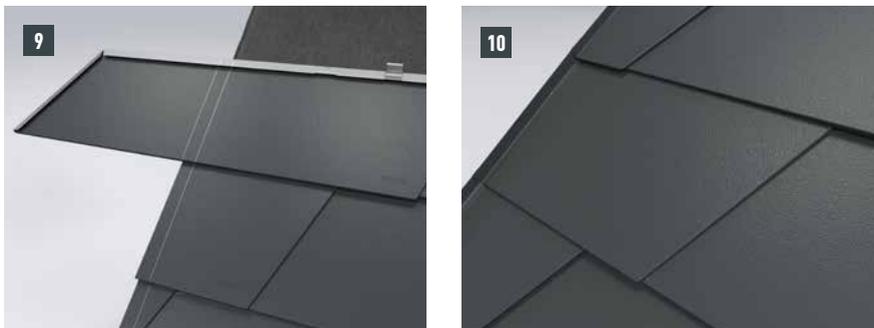
### VARIANT 1 SHORTENED SHINGLE

Trim back the last shingle before the upstand and install..



### VARIANT 2 FITTING SHINGLE

Attach fitting shingles, cut with a fold allowance of 30 mm and edge up.

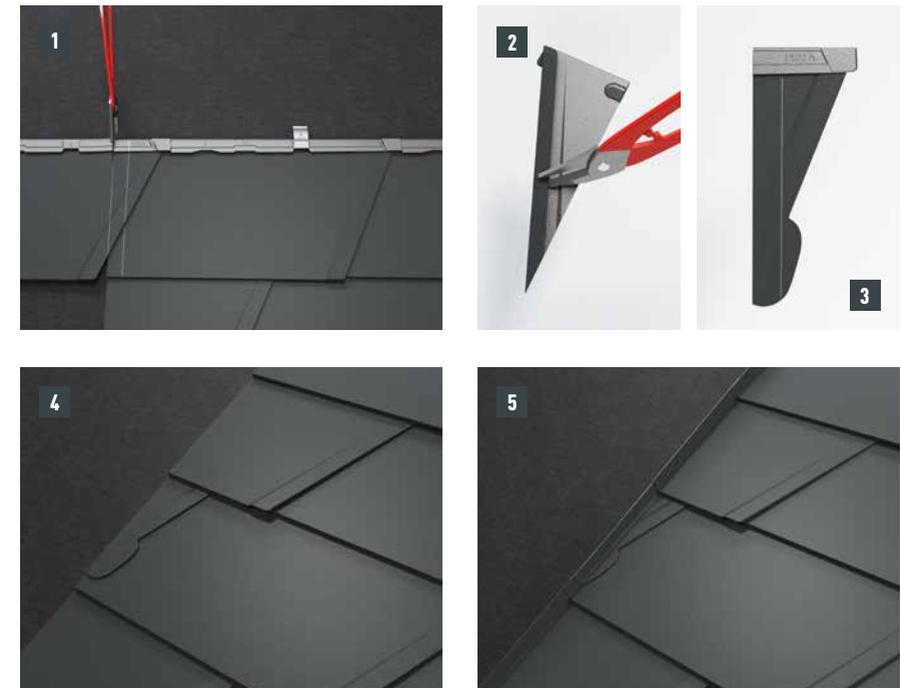


Only a professional installation guarantees a rainproof roof..

After preparing the roof shingle, the connection flashing (e.g. gable cladding or channel flashing) can be executed and worked into the roof covering.

## 3.3 SPECIAL FEATURE OF DS.19 SHINGLE

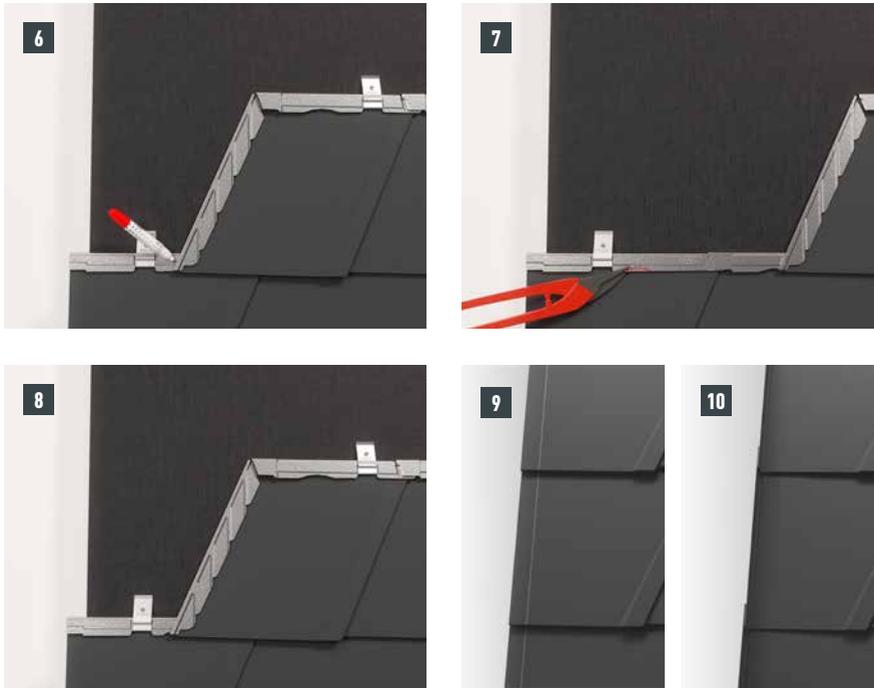
With each left-hand upstand of the DS.19 shingle (gable strip and border), the folds running diagonally downwards are to be notched in order to avoid any capillary action.



- Mark the upstand area and 30 mm fold allowance and cut at the fold allowance (Image 1).
- Make rebate notches (Image 2 + 3).
- Cover notched DS.19 shingle and edge up (Image 4 + 5).

## 3.3.1 Variant DS.19 fitting shingle

One variant is the sloping seams with a DS.19 fitting shingle outside of the upstand area.



- Cover DS.19 fitting shingle and mark the diagonally sloping fold at the top of the shingle cover (Image 6).
- Expose the shingle cover in the shape of a crescent around the marking (Image 7).
- Cover DS.19 fitting shingle and fasten (Image 8).
- Fold up roof covering. (Image 9 + 10).

### NOTE

The DS.19 fitting shingle is not suitable to cover a entire roof.

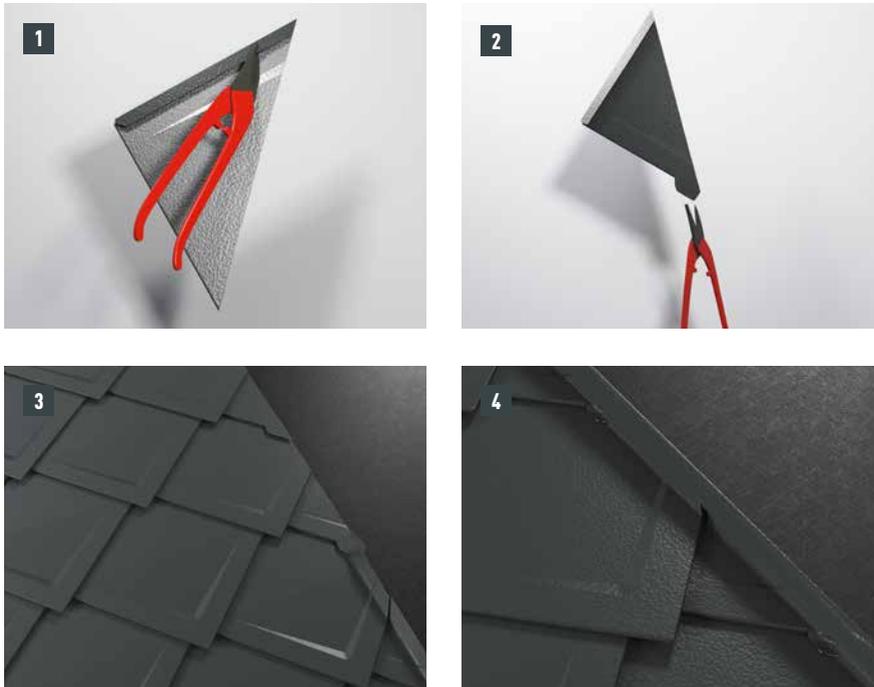
**CAUTION: Shortening of a DS.19 shingle is not possible due to the capillary beads.**

Only a professional installation guarantees a rainproof roof..

After preparing the DS.19 shingle, the joint flashing (e.g. gable cladding or channel flashing) can be executed and worked into the roofcovering.

## 3.4 SPECIAL FEATURE OF 29×29 RHOMBOID ROOF TILE

With each lateral upstand of the 29 × 29 rhomboid roof tile (abutment and trimmings), the folds running diagonally downwards are to be cut out and bent up on the underside.



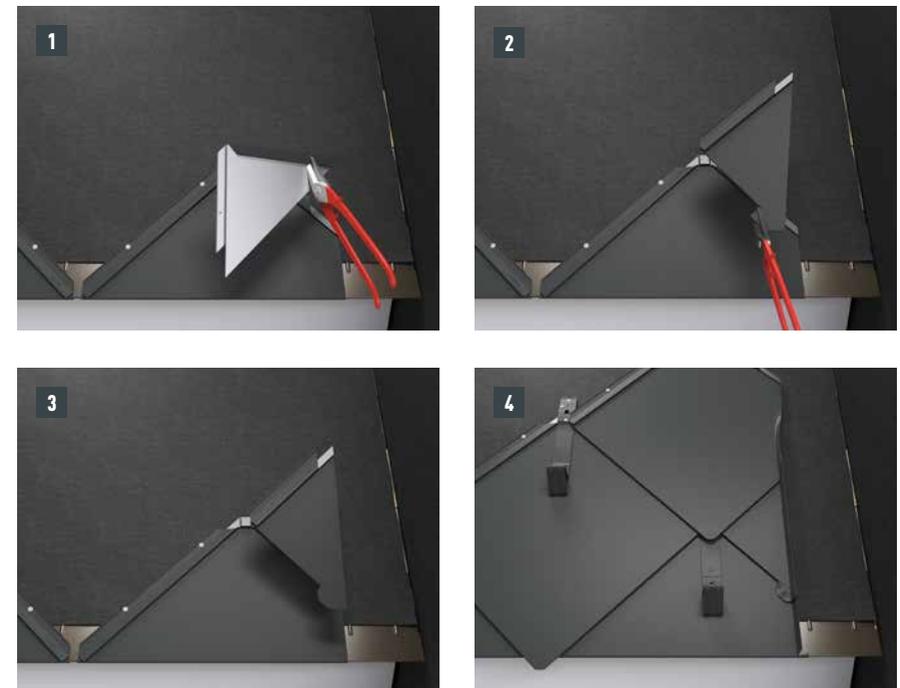
- Marking the upstand area and 30 mm fold allowance
- Cut 29 × 29 rhomboid roof tile at the fold allowance and make the rebate notch (Image 1).
- Bend open the fold and cut round (Image 2).
- Install prepared 29 × 29 roof tile and bend it upwards (Image 3 : 4) .

Only a professional installation guarantees a rainproof roof..

After preparing the 29 × 29 rhomboid roof tile, the joint flashing (e.g. gable cladding or channel flashing) can be executed and worked into the roof covering.

## 3.5 SPECIAL FEATURE OF 44×44 RHOMBOID ROOF TILE

With each lateral upstand of the 44 × 44 rhomboid roof tile (vergeor weatherings), the folds running diagonally downwards are to be cut out and bent up on the underside.



- Marking the upstand area and 30 mm fold allowance
- Cut 44 × 44 rhomboid roof tile at the fold allowance and make the rebate notch (Image 1).
- Bend open the fold and cut round (Image 2).
- The sloping patent fold is to be notched at the top in the area of the raised edge (Image 3).
- Cover and raise the notched 44 × 44 rhomboid roof tile (Image 4).

Only a professional installation guarantees a rainproof roof..

After preparing the 44 × 44 rhomboid roof tile, the joint flashing (e.g. gable cladding or channel flashing) can be executed and worked into the roof covering.

# 4 VALLEY DETAIL

## 4.1 VARIATION WITH SAFETYVALLEY

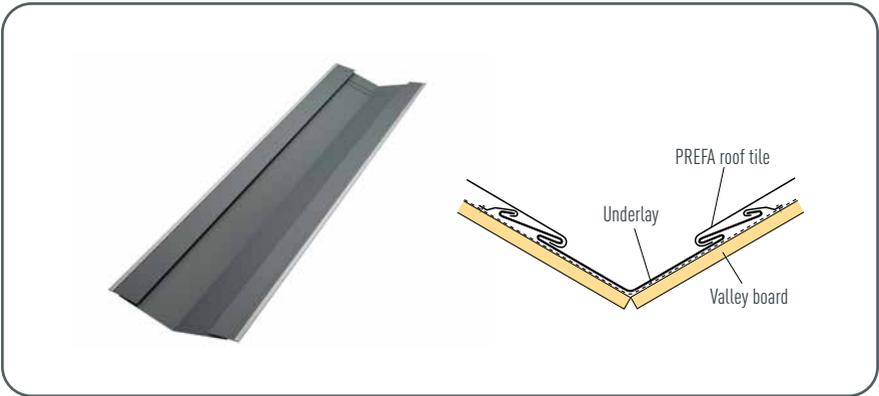


Figure 60 • Safety valley

The safety valley is a recommendation of the PREFA company. In general the installer decides the use of a safety valley based upon his skills and experience. Compared to common valley flashings, the safetyvalley offers increased safety with regard to backwater in the sensitivevalley area.

**Advantages of the safety valley:**

- Backflow-proof due to the additional fold
- Prefabricated PREFA product
- Additional folds in the overlapping area
- Capillary beads in the overlapping area
- Better accessibility, increased stability

## 4.2 VARIANT WITH HANDCRAFTED FLASHING

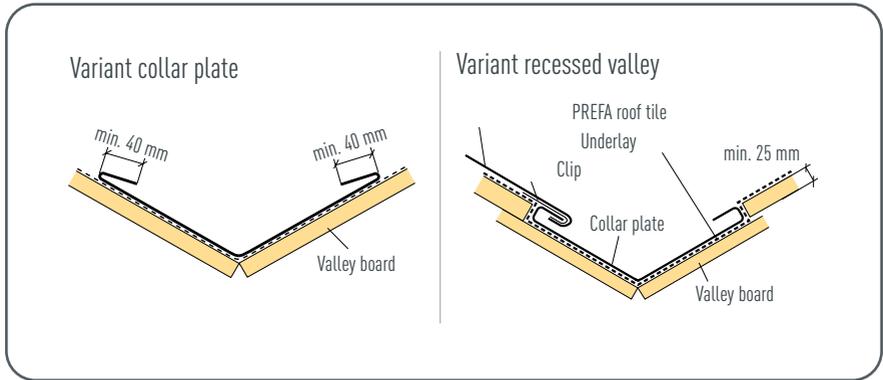


Figure 61 • Alternative valley flashings and recessed valley

- Fabricate the valley up to a maximum length of 3,000 mm.
- The lateral water fold is to be bent 40 mm wide on both sides.
- The cutting width depends on the shape of the roof, the roof pitch and the circumstances and must not be less than 500 mm.
- In cases of very different roof pitches or if the amount of water varies greatly, the valley has to be recessed or has to be joint with a doble lock standing seam in the middle.

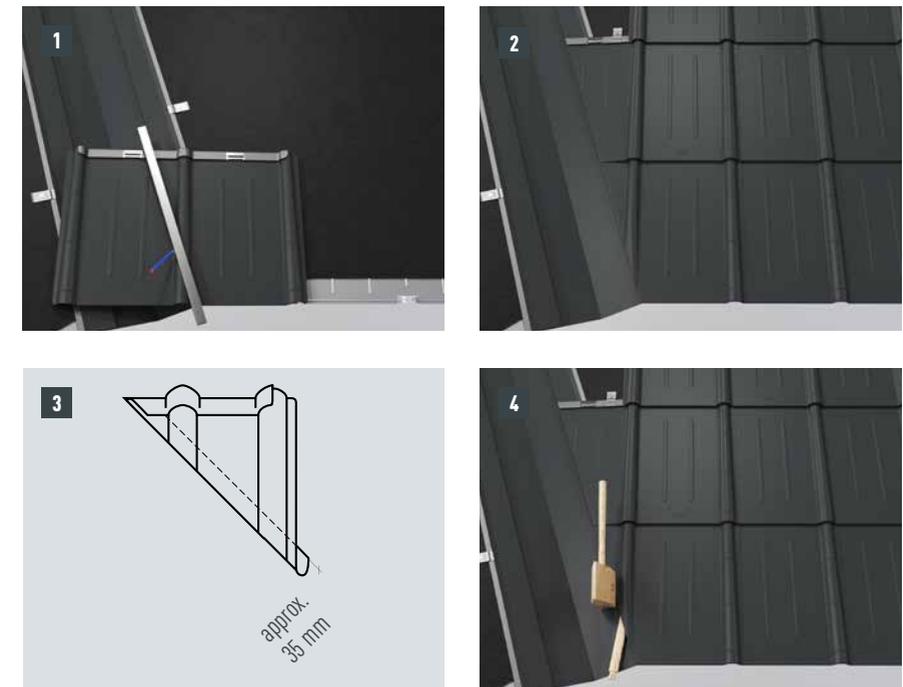
## 4.3 VALLEY JOINT



- At the valley joint, the PREFA roofing to be covered is marked with approx. 35 mm and trimmed (Image 1 + 2).
- The marked termination is folded over (Image 3).
- The prepared PREFA roof cover is ready to be installed (Image 4).

## 4.4 SPECIFICS WITH ROOF TILE

The covering direction should always be selected in the direction of the valley. As a result, if snow and ice slides off in this area, the overlap groove is prevented from bending up.



- Align the panel and mark the run of the valley, add another approx 35 mm for termination (Image 1).
- Flatten the bead slightly and bend inwards by 180°. Install the tile and fix it with provided clips (Image 2 + 3).
- Since the unfolding of the tile was stretched at the bending edge, the groove in the covered state is easiest to return to its original shape with a beveled hammer handle. This prevents the panel from warping (Image 4).

## 4.5 SPECIAL FEATURE OF ROOF SHINGLE AND DS.19 SHINGLE

### NOTE

For roof shingles and DS.19 shingles, the intersection point on the left hand side of the valley must be avoided.

### 4.5.1 Roof shingle

If the intersection point coincides with the valley on the left-hand side, a shortened roof shingle or fitting shingle must be assembled and installed.

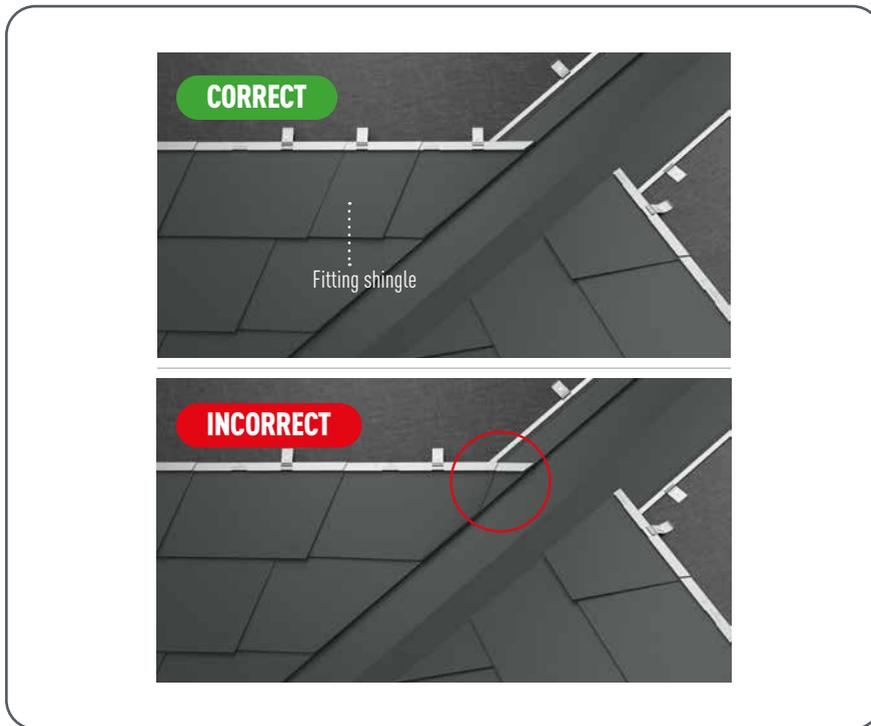


Figure 62 • Valley detail - Specifics with roof shingle

### 4.5.2 DS.19 shingle

In the case of DS.19 shingles, if the collar/shingle joint intersection coincides with the valley on the left-hand side, a DS.19 fitting shingle must be laid beforehand. Shortening of a DS.19 shingle is not possible due to the capillary beads.

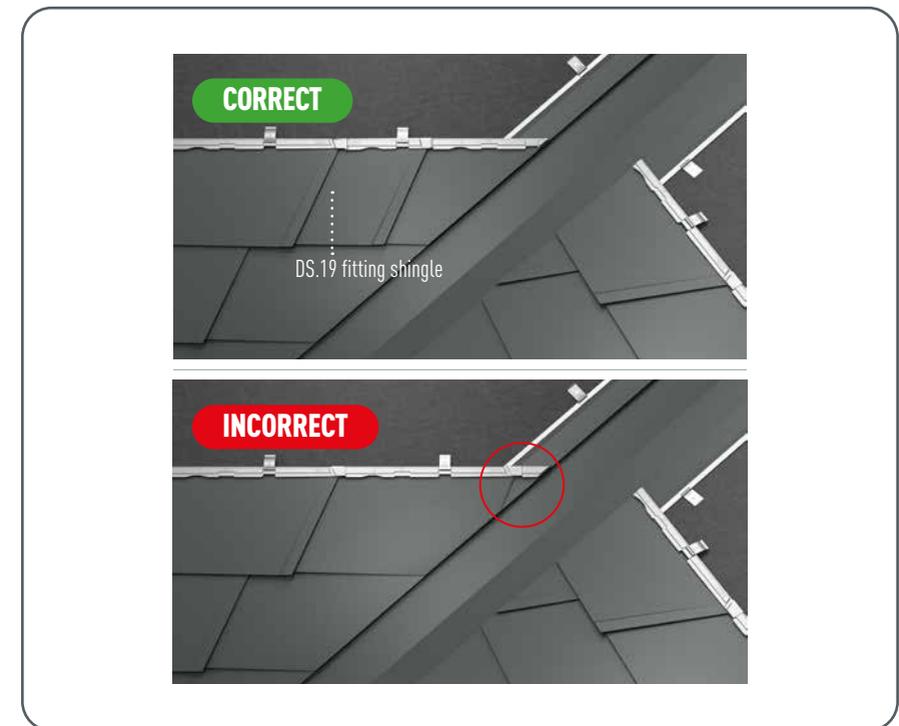


Figure 63 • Valley detail - Specifics with DS.19 shingle

## 4.6 SPECIFICS WITH R.16 ROOF TILE AND FX.12 ROOF PANEL



- If the intersection of the collar and the plate joint coincides, a fitting tile must be assembled and installed (Image 1).  
**Note:** With handcrafted flashings, the intersection point must be definitely avoided .
- To avoid the intersection, manufacture a fitting tile from an entire R.16 roof tile or FX.12 roof panel (Image 2 + 3).  
**CAUTION: Choose the size of the fitting part so that the installation of the snow guards is not impaired.** The exact design is clearly visible on the aligned snow guards.

### NOTE

When using the safety valley, the valley joint can also be designed in such a way that the valley/panel joint intersection point coincides.

## 5 HIP AND RIDGE DETAIL

Depending on roof structure and functionally, there are various options.

### 5.1 RIDGE VENT

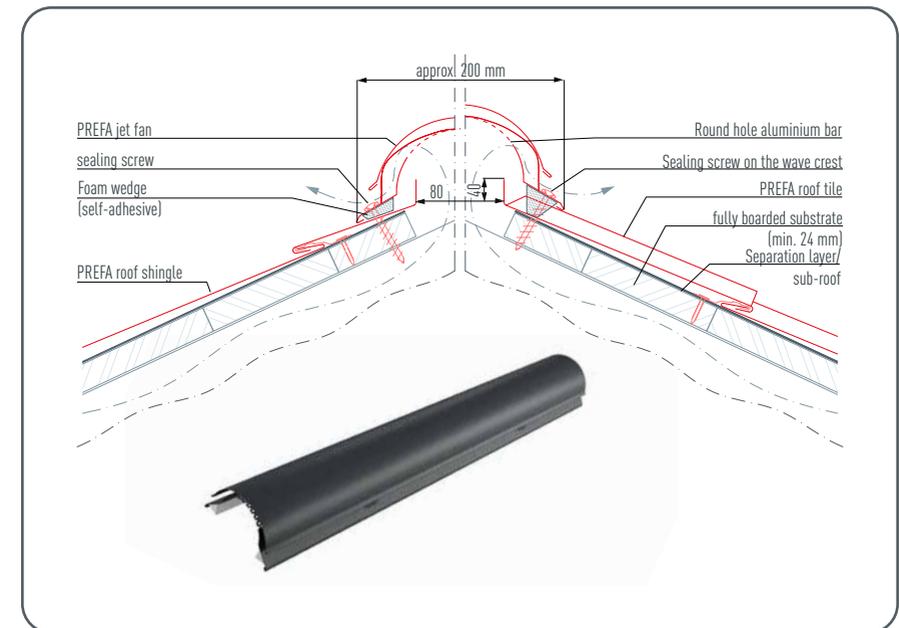


Figure 64 · Ridge vent

The ridge vent can be used for roof pitches of 12-55°.

The original PREFA ridge vent has an apron on both sides. Nevertheless, bend up the roof covering approx 40 mm to achieve a rainproof detail.

Fasten the last (cut) row of tiles with a returnclip or by means of a direct fastening to the side of the bead of the underlying bead or above the foam wedge of the jet fan.

## 5.1.1 Installation



- The orientation of the last row should be done so that there is an air gap of 80 mm. Set up the PREFA roof elements approx. 40 mm vertically (Image 1).
- Observe expansion joints of approx. 5 mm between each individual jet fan, and then peel off the adhesive protection film of the sealing wedge approx. 50 mm and bend outwards (Image 2).
- Set up both connecting sleeves in the middle and each with a Ø 4.1 mm rivet on PREFA rivets as a fixed point (Image 3).
- Glue the sealing wedge with the already removed sealing surface under the connecting sleeves. Then remove the adhesive protection film (Image 4).



- Fasten ridge vent with PREFA sealing screws (60 mm long) at a distance of approx. 600 mm (Image 5).

### Note:

- With roof tiles, always place the sealing screw on the crest of the bead.
  - When installing shingles and rhomoids do not position clips at the angular seam.
  - With FX.12 and R.16, do not attach any clips to the angled standing seam.
- Suggestion for installing the ridge vent end cap (Image 6).  
**Tip:** At first mount the cover flashing at the verge and bend it up for 30 mm, then install the fascia flashing.
  - Adjust the ridge vent end cap and fasten it with a rivet (Image 7).
  - Example: Hip/ridge waste (Image 8).

### NOTE

Make sure that the foam wedge is attached to the entire length of the roof covering.

## NOTE

When arranging openings on the ridge side in single-shell roof structures, the penetration of drifting snow cannot be completely ruled out.

### 5.1.2 Gable Dormer

The connection from the PREFA jet fan to the collar must be carried out in such a way that no rainwater from the main roof area gets into the jet fan.



Figure 65 • Ridge vent – dormer

### 5.2 DETAILS FOR HIP AND RIDGE CAPS

To ensure that the roof is protected against drifting snow, it is absolutely necessary to raise the PREFA roof covering in the notch and ridge areas at least 40 mm.

If the last row of panels is very short, a continuous chest plate can also be made with band plate.

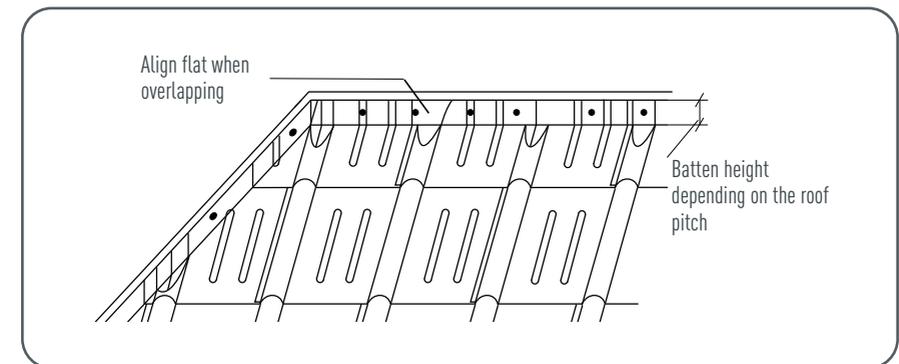


Figure 66 • Details for hip and ridge caps

**TIP:** Chalk a line in the middle of the ridge batten to keep the exact line.

## NOTE

Cut the ridgetcap exactly in the shape of the beads or folds.

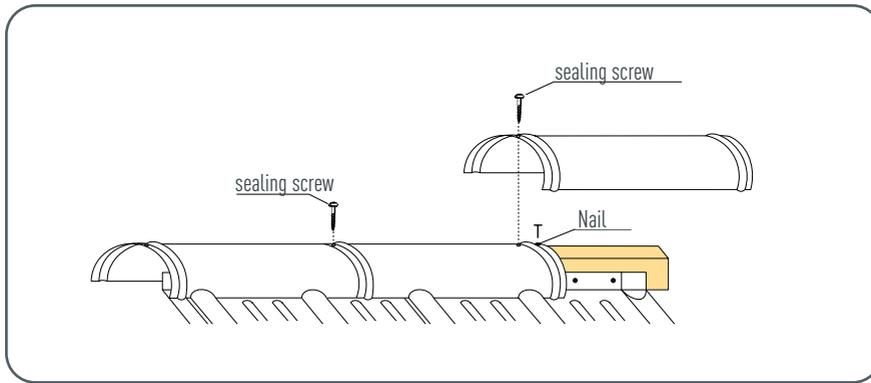


Figure 67 • Hip and ridge cap details – variant without apron flashing

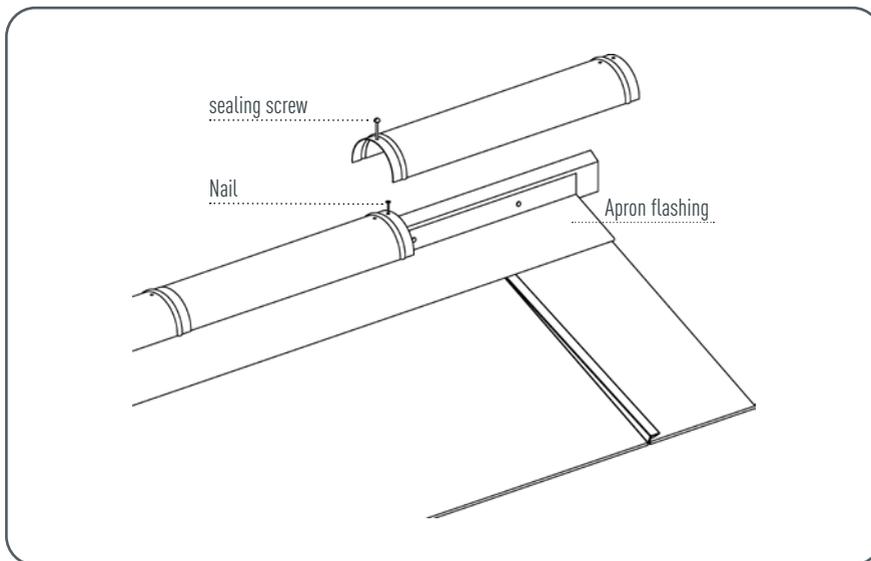


Figure 68 • Hip and ridge detail- variant with apron flashing

## EXAMPLE OF HIP/RIDGE WASTE



- Cut the upcoming ridge caps according to required shape and allow an overlap of 10mm and fix both parts with screws (Image 1).
- Then cut half a ridge cap so that it covers the cut of the two lower ridge-caps. To make it easier to adjust the top cap, drag the outer section of the cut as shown in the photo (Image 2).
- Fit the prepare ridge to the batten and proceed with the installation of the ridge cap (Image 3).

## 5.2.1 Specifics with roof tile

If a continuous apron flashing is fitted to the roof tile, then the top fold is to be aligned in such a way that it is possible to install a straight apron flashing.



- Cut the cover of the bead high point and lift the fold with theseaming iron (Image 1 + 2).
- Use the hammer to flatten the bead to allow a continuous seam. It is not necessary to cut into the panel joint (Image 3).
- Now the apron flashing can be hooked in without any problems (Image 4).

## 5.2.2 Special feature of 29×29 and 44×44 rhomboid roof tile

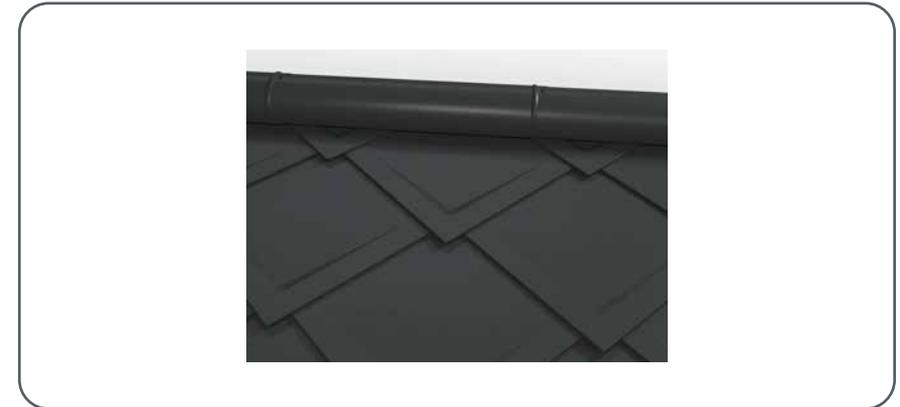


Figure 69 • Hip and ridge detail –installation without end plates

If a continuous apron flashing is fitted to the 29 × 29 or 44 × 44 rhomboid roof tiles, then end plates are to be used for the 29 × 29 or 44 × 44 rhomboid roof tiles. Thus a continuous horizontal fold can be guaranteed.



Figure 70 • Cover strips for end plates | Mounting with end plates

The supplied cover strips must be fitted between the end plates for 29 × 29 rhomboid roof tile.

## 5.3 SIMPLE RIDGEDetail WITH SINGLE INTERLOCKING WELT

After trimming the PREFA roof covering, make a single interlocking welt.



Figure 71 - Simple ridedetail with single interlocking welt

### 5.3.1 Special feature of roof tiles

After trimming the roof tile, the centre bead gets a dogear to allow to make transvers fold. the dogear could be done with a long nose plier as well as with a beading machine.



Figure 72 - Simple ridge detail with single interlocking welt - Special feature of roof tiles

## 5.4 RIDGEDetail WITH SIMPLE RIDGE CAP

A simple ridge cap can be used if the distance between the PREFA roof covering and the ridge point is less than 150 mm.



Figure 73 - Ridgedetail with simple ridge cap

## 6 CONSTRUCTION OF ROOF OFFSET

### 6.1 ROOF TILE

The construction is carried out with two starter strips.

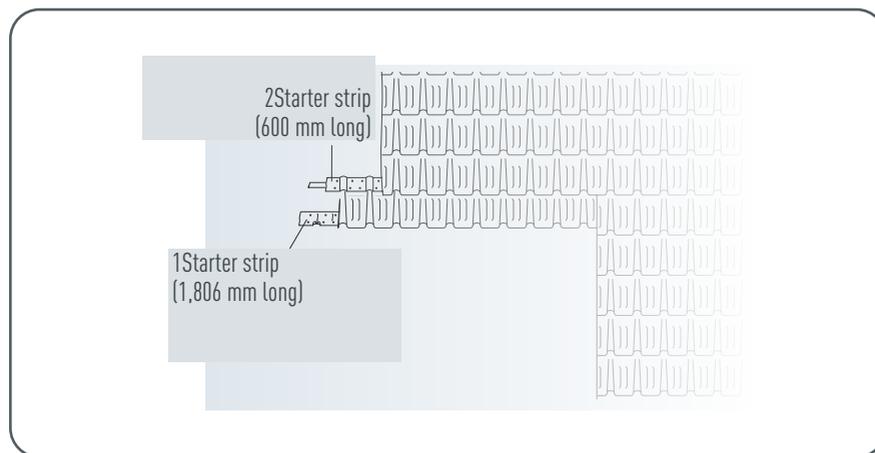
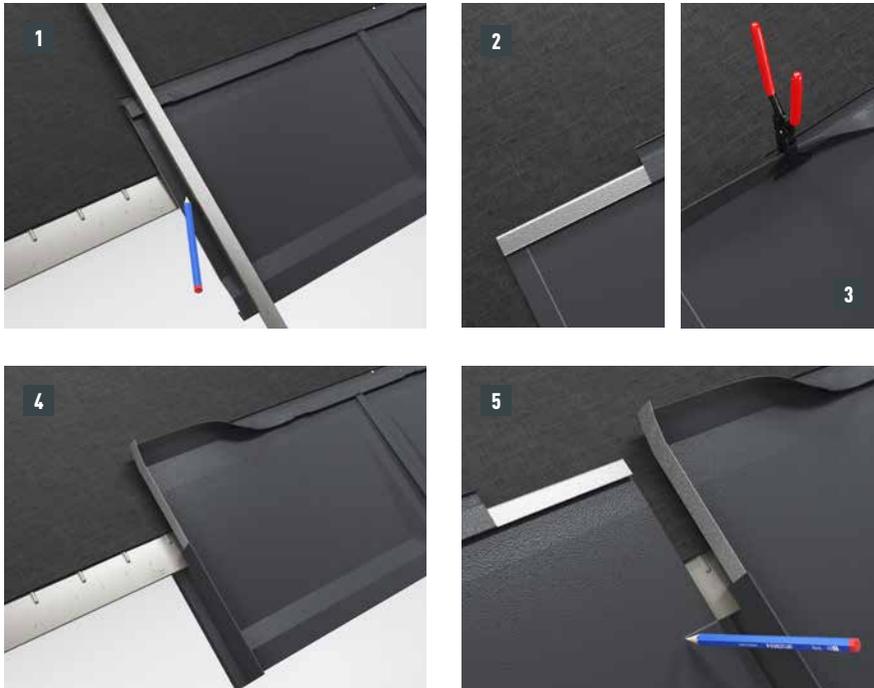


Figure 74 • Construction of roof offset - roof tile



- Fit the first starter strip (1,806 × 150 mm) as usual.
- Install the second starter strip (beaded starter strip) over the first row of panels at the level of the fold of the main roof. Attach a seaming tape considering the actual situation on site, to get a gap for the transverse fold of the following tile. (Image 1).
- The following row of roof tiles can then be installed over the entire width (Image 2).

## 6.2 R.16 ROOF TILE AND FX.12 ROOF PANEL

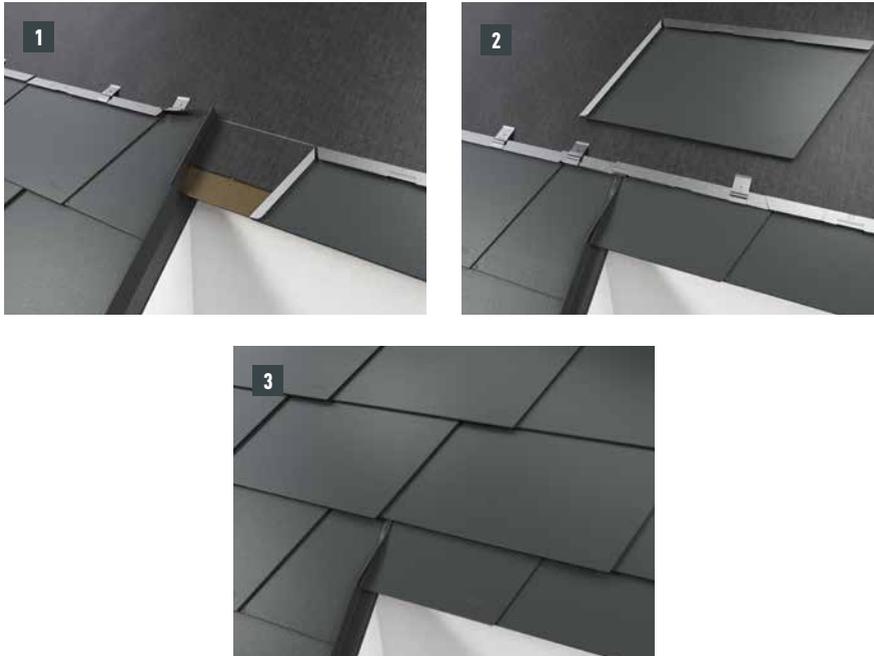


- Mark 30 mm overhang and cut R.16 roof tile/FX.12 roof panel (Image 1).
- Cut in the upper fold approx. 200 mm and notch it (Image 2).
- The upper single lock seam is turned up (Image 3).
- Bend up the additional 30 mm and join it (Image 4).
- Mark R.16 roof tiles/FX.12 roof panels to be shortened and cut at the roof-step (Image 5).



- Install prepared R16 and FX12 panels accordingly (Image 6).
- Join the R16/FX12 panles and flatten the seam in the upper part (Image 7).
- Bend the horizontal continious fold back into posotion and fasten with patent clips (Image 8).
- The following row of R.16 roof tiles/FX.12 roof panels can then be install-over the entire width (Image 9).

## 6.3 ROOF SHINGLE AND DS.19 SHINGLE



- If the eaves has a first row of shortened shingles, the roof shingles/DS.19 shingles must be shortened (Image 1).
- The following row of shingles can then be installed over the entire width (Image 2).
- Completely covered roof section (Image 3).

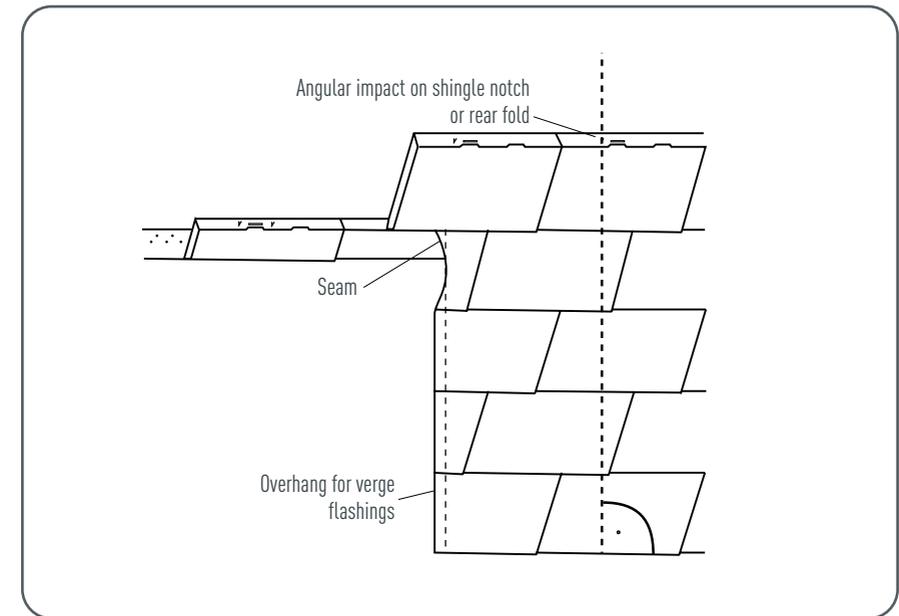


Figure 75 • Design details roof step- Roof shingle and DS.19 shingle

## 6.4 29×29 RHOMBOID ROOF TILE AND 44×44 RHOMBOID ROOF TILE



In most cases with roof sections with 29 × 29 or 44 × 44 rhomboid roof tiles, an eaves plate must be manufactured by the processor. Usually a roof step requires a bespoke starter flashing made by the installer himself. This means that you can easily start with a 29 × 29 or 44 × 44 rhomboid roof tile (Image 1A + 1B).

### 6.4.1 Variant A: Vertical fold



The following row of rhomboid roof tiles can then be installed over the entire width (Image 2A + 2B).

### 6.4.2 Variant B: Horizontal fold



Completely covered roof section (Image 3A + 3B).

## 7 CONNECTION TO AN EDGE GUTTER (ON-ROOF GUTTER)



Figure 76 - Joint to an on-roof gutter

- Install the on-roof gutter indirectly to allow expansion (Image 1).
  - A conical shaped starter flashing must be installed to compensate the fall of the gutter (Image 2).
  - Now install the starter strip horizontally, according to (Image 3).
- Edge 1,806 × 150 mm starter strip according to the following figure (2 folds).

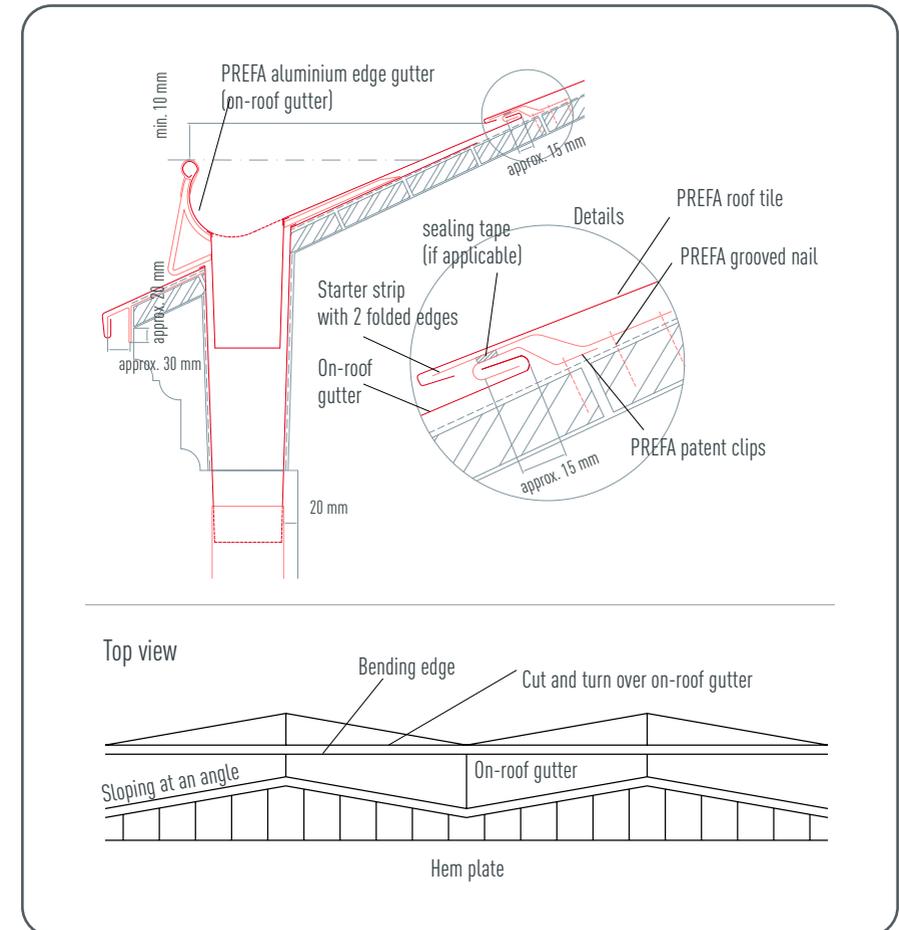


Figure 77 - Joint to an on-roof gutter

## SNOW GUARD SYSTEM

### 1 SNOW GUARD

Snow guards are to be arranged according to the calculated installation pattern over the entire roof surface in each uncut row. (Except in the area of accessories and built-in parts.) Where necessary, additional snow rakes are to be provided in exposed locations. Structural installations such as dormers, chimneys, etc. are to be taken into account according to the standards.

As an additional measure, a snow rake or snow rake system can be installed above house entrances and public property. In the area of dormers, chimneys, solar panels, roof hatches, skylights, ventilation pipes, awnings, etc., it may be appropriate, depending on the situation, to attach additional snow retention devices (increased number of snow guards or snow rakes). Install snow guards according to the valid installation patterns, depending on the roof pitch and snow load. Fasten each guard with at least 2 grooved nails. Only use original snow guards.

According to ÖNORM B 3418, snow stops made of metal must be combined with snow guard systems from a roof pitch of  $45^\circ$  (= snow rake system on the eaves).

#### CAUTION:

Never use snow guards as a safety aid.

#### PREFA ROOF CALCULATOR

PREFA offers professionals a free calculation tool for PREFA snow retention systems. Please feel free to contact the PREFA Product Technology team in this regard. See page 1 for contact details.

### 1.1 GUIDELINES

The snow guards are installed according to the following installation patterns, depending on the snow load and roof pitch. The table below shows the installation pattern. Observe the information on the roof pitch in the vertical direction and the snow load on the ground (sk) in the horizontal direction. This is governed in the national standards ÖNORM B 1991-1-3, DIN EN 1991-1-3 NA and SIA 261.

#### REQUIREMENTS

- Calculation of the roof build up according to EN 1991-1-3 and ÖNORM B 1991-1-3.
- The installation instructions for the snow guards must be followed.
- Roof structures with  $h > 1.0$  m require a separate certificate.
- Snow overhang is not taken into account!
- Form coefficient for snow load with  $\mu = 0.80$ .

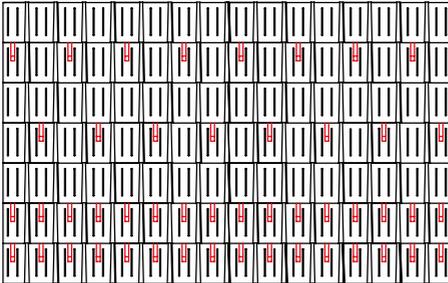
## 1.2 SNOW GUARDS FOR ROOF TILE

Snow guards are respectively pushed up into the central plate punching and fastened with at least 2 grooved nails. The number of clips in panels is not influenced by the use of snow guards.

With roof tiles, 2, 4 or 8 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns DP1, DP2 and DP3). The first two rows must be equipped with snow guards throughout.

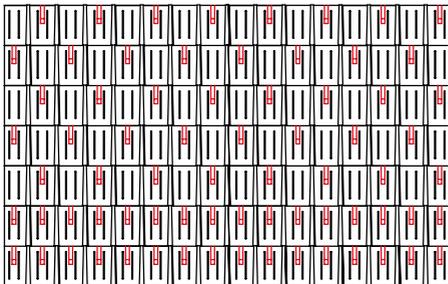
		ROOF TILE													
		Snow load on ground sk [kg/m <sup>2</sup> ]													
Roof pitch from (°)		100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
12		DP1	DP1	DP1	DP1	DP1	DP1	DP2	DP2	DP2	DP2	DP2	DP2	DP2	DP3
15		DP1	DP1	DP1	DP1	DP1	DP2	DP2	DP2	DP2	DP2	DP2	DP3	DP3	DP3
20		DP1	DP1	DP1	DP2	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	DP3	DP3
25		DP1	DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	DP3	—	—
30		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
35		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
40		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
45*		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
50		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
55		DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—	—
60		DP1	DP1	DP1	DP2	DP2	DP2	DP3	DP3	DP3	DP3	DP3	—	—	—

\* According to ÖNORM B 3418, snow guards made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



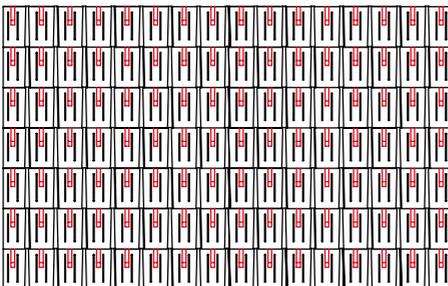
**INSTALLATION DIAGRAM DP1**

2 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DP2**

4 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DP3**

8 pcs./m<sup>2</sup>

Figure 78 - Installation patterns with snow guard for roof tile

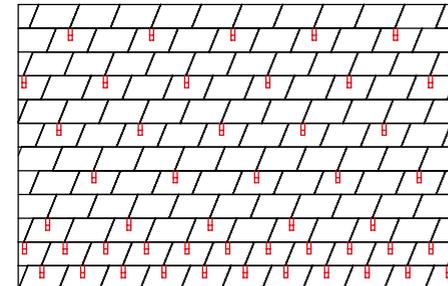
## 1.3 SNOW GUARD FOR SHINGLES

Snow guards are respectively pushed up into the left of the two central plate punchings and fastened with at least 2 grooved nails. The number of clips in the shingles is not affected by the use of snow guards.

With roof shingles, 2.5, 5 or 10 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns DS1, DS2 and DS3). The first two rows must be equipped with snow guards throughout.

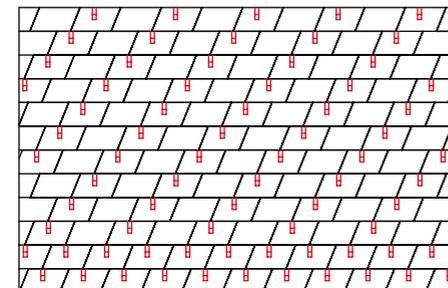
ROOF SHINGLE														
Snow load on ground sk [kg/m <sup>2</sup> ]														
Roof pitch from [°]	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
25	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	DS3
30	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	—	—
35	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	DS3
40	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	—
45*	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	—
50	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	—
55	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	DS3
60	DS1	DS1	DS1	DS2	DS2	DS2	DS2	DS3	DS3	DS3	DS3	DS3	DS3	DS3

\* According to ÖNORM B 3418, snow guards made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



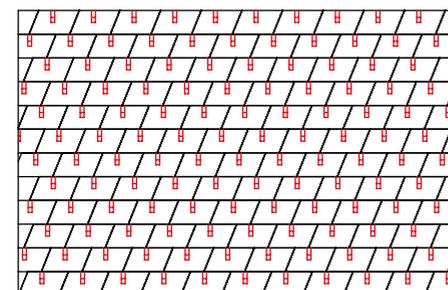
**INSTALLATION DIAGRAM DS1**

2.5 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DS2**

5 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DS3**

10 pcs./m<sup>2</sup>

Figure 79 • Installation patterns with snow guard for roof shingle

### 1.4 SNOW GUARD FOR DS.19 SHINGLE

Snow guards are respectively pushed up into the left of the two DS.19 shingle central plate punchings (marked “ST”) and fastened with at least 2 grooved nails. With a DS.19, the number of clips is not influenced by the use of snow guards.

With DS.19 shingles, 2, 4 or 8 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns DS.19 1, DS.19 2 and DS.19 3). The first two rows must be equipped with snow guards throughout.

DS.19 shingle Snow load on ground sk [kg/m <sup>2</sup> ]														
Roof pitch from (°)	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
17	DS.19 1	DS.19 1	DS.19 1	DS.19 1	DS.19 2	DS.19 3								
20	DS.19 1	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 2	DS.19 3						
25	DS.19 1	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—						
30	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
35	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
40	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
45*	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
50	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
55	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				
60	DS.19 1	DS.19 1	DS.19 2	DS.19 2	DS.19 2	DS.19 3	—	—	—	—				

\* According to ÖNORM B 3418, snow holders made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).

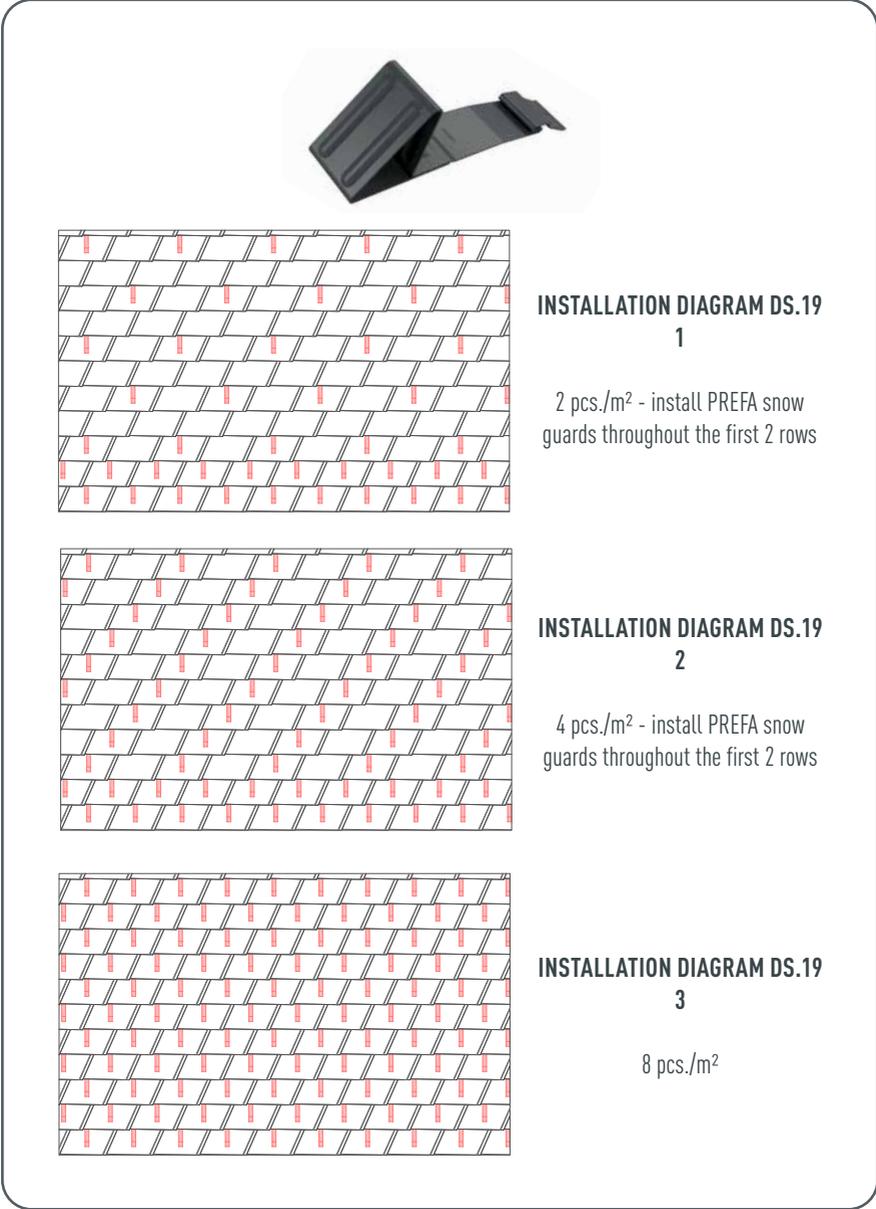


Figure 80 • Installation patterns with snow guard for DS.19 shingle

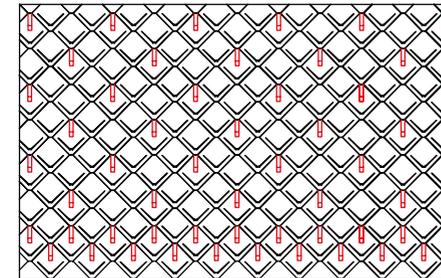
## 1.5 SNOW GUARDS FOR 29×29 RHOMBOID ROOF TILE

Snow guards are respectively pushed up into the centre of the recess in the 29 × 29 rhomboid roof tiles and fastened with at least 2 grooved nails. If a snow guard is mounted, no additional clip attachment is required on this 29 × 29 rhomboid roof tile.

With 29 × 29 rhomboid roof tiles, 3, 6 or 12 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns DR1, DR2 and DR3). The first two rows must be equipped with snow guards throughout.

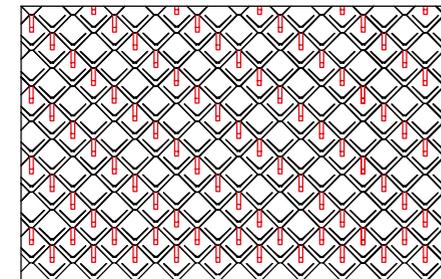
RHOMBOID ROOF TILE 29×29														
Snow load on ground sk [kg/m <sup>2</sup> ]														
Roof pitch from (°)	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
22	DR1	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3
25	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3
30	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3	DR3
35	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3
40	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3
45*	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3
50	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3
55	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3	DR3
60	DR1	DR1	DR1	DR1	DR2	DR2	DR2	DR2	DR2	DR3	DR3	DR3	DR3	DR3

\* According to ÖNORM B 3418, snow holders made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



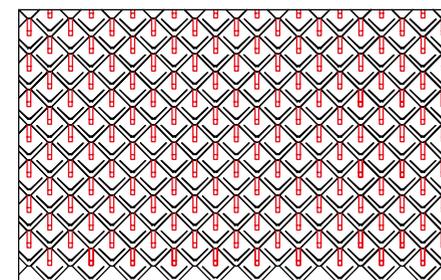
**INSTALLATION DIAGRAM DR1**

3 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DR2**

6 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DR3**

12 pcs./m<sup>2</sup>

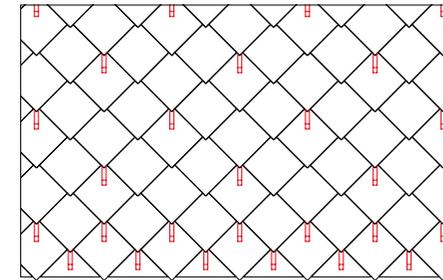
Figure 81 • Installation patterns with snow guard for 29×29 rhomboid roof tile

## 1.6 SNOW GUARDS FOR 44×44 RHOMBOID ROOF TILE

Snow guards are respectively pushed up into the centre of the recess in the 44 × 44 rhomboid roof tiles and fastened with at least 2 grooved nails. The number of fastenings in the 44 × 44 rhomboid roof tiles is not affected by the use of snow guards. With 44 × 44 rhomboid roof tiles, 1.3, 2.6 or 5.2 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns DR44 1, DR44 2 and DR44 3). The first two rows (starting plates for 44 × 44 rhomboid roof tiles and the first row of 44 × 44 rhomboid roof tiles) must be equipped with snow guards throughout.

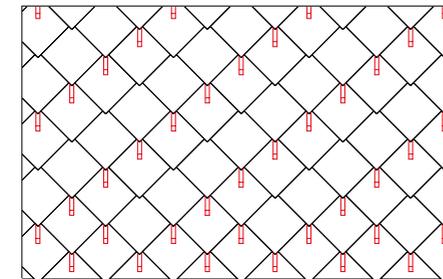
RHOMBOID ROOF TILE 44×44														
Snow load on ground sk [kg/m <sup>2</sup> ]														
Roof pitch from (°)	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
12	DR44 1	DR44 1	DR44 1	DR44 1	DR44 2	DR44 3								
15	DR44 1	DR44 1	DR44 1	DR44 2	DR44 3									
20	DR44 1	DR44 1	DR44 2	DR44 2	DR44 2	DR44 3	—	—	—					
25	DR44 1	DR44 1	DR44 2	DR44 2	DR44 3	—	—	—	—	—				
30	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
35	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
40	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
45*	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
50	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
55	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—	—
60	DR44 1	DR44 1	DR44 2	DR44 2	DR44 3	DR44 3	DR44 3	DR44 3	—	—	—	—	—	—

\* According to ÖNORM B 3418, snow stops made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



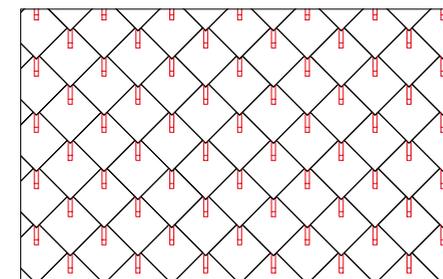
**INSTALLATION DIAGRAM DR44 1**

1.3 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DR44 2**

2.6 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM DR44 3**

5.2 pcs./m<sup>2</sup>

Figure 82 · Installation patterns with snow guard for 44×44 rhomboid roof tile

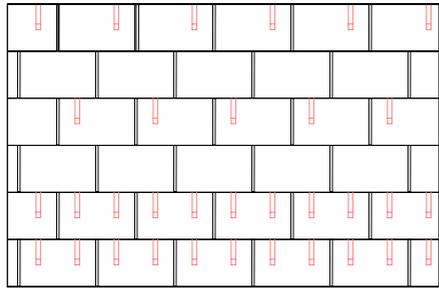
### 1.7 SNOW GUARDS FOR R.16 ROOF TILE

Snow guards are pushed up on the curved embossing on the fold and fastened with at least 2 grooved nails. The number of fastenings in the R.16 roof tiles is not influenced by the use of snow guards.

With R.16 roof panels, 1.7, 3.4 or 6.8 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns R.16 1, R.16 2 and R.16 3). The first two rows must be equipped with snow guards throughout.

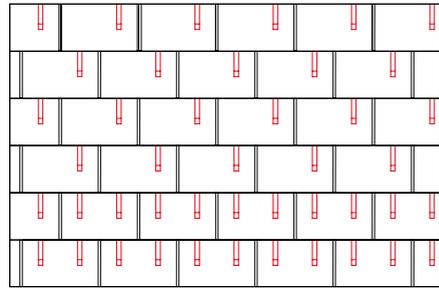
R.16 ROOF TILE														
Snow load on ground sk [kg/m <sup>2</sup> ]														
Roof pitch from (°)	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
17	R.16 1	R.16 1	R.16 1	R.16 1	R.16 2	R.16 2	R.16 2	R.16 2	R.16 3					
20	R.16 1	R.16 1	R.16 1	R.16 2	R.16 2	R.16 2	R.16 3	—						
25	R.16 1	R.16 1	R.16 2	R.16 2	R.16 2	R.16 3	—	—	—	—				
30	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
35	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
40	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
45*	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
50	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
55	R.16 1	R.16 1	R.16 2	R.16 2	R.16 3	R.16 3	R.16 3	R.16 3	—	—	—	—	—	—
60	R.16 1	R.16 1	R.16 2	R.16 2	R.16 2	R.16 3	—	—	—	—				

\* According to ÖNORM B 3418, snow holders made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



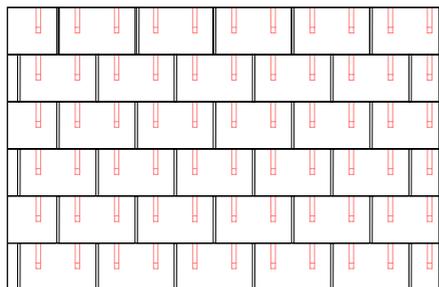
INSTALLATION DIAGRAM R.16 1

1.7 pcs./m<sup>2</sup> - install PREFE snow guards throughout the first 2 rows



INSTALLATION DIAGRAM R.16 2

3.4 pcs./m<sup>2</sup> - install PREFE snow guards throughout the first 2 rows



INSTALLATION DIAGRAM R.16 3

6.8 pcs./m<sup>2</sup>

Figure 83 • Installation patterns with snow guard for R.16 roof tile

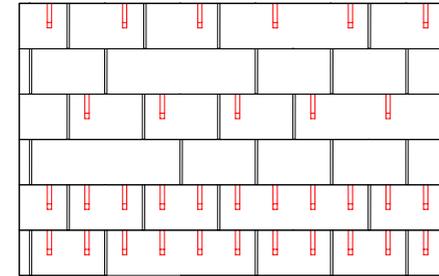
## 1.8 SNOW GUARDS FOR FX.12 ROOF PANEL

Snow guards are pushed up on the curved embossing on the fold and fastened with at least 2 grooved nails. The number of fastenings in the FX.12 roof panels is not affected by the use of snow guards.

With FX.12 roof panels, 1.7, 3.4 or 6.8 snow guards are installed per m<sup>2</sup> (see table below - Installation patterns FX.12 1, FX.12 2 and FX.12 3). The first two rows must be equipped with snow guards throughout.

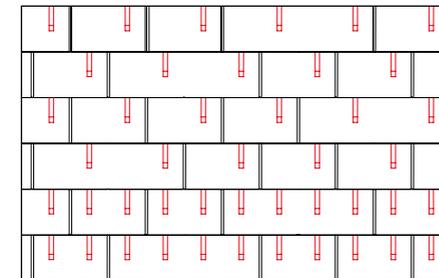
FX.12 ROOF PANEL		Snow load on ground sk [kg/m <sup>2</sup> ]													
Roof pitch from (°)	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	
17	FX.12 1	FX.12 1	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 2	FX.12 2	FX.12 3						
20	FX.12 1	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 2	FX.12 3	—							
25	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—				
30	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
35	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
40	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
45*	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
50	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
55	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				
60	FX.12 1	FX.12 1	FX.12 2	FX.12 2	FX.12 3	—	—	—	—	—	—				

\* According to ÖNORM B 3418, snow stops made of metal must be combined with snow guard systems from a roof pitch of 45° (= snow rake system on the eaves).



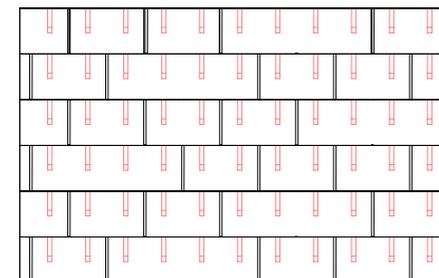
**INSTALLATION DIAGRAM FX.12 1**

1.7 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



**INSTALLATION DIAGRAM FX.12 2**

3.4 pcs./m<sup>2</sup> - install PREFA snow guards throughout the first 2 rows



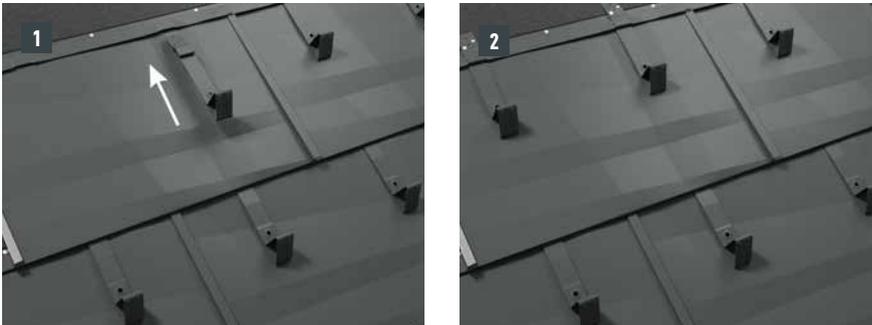
**INSTALLATION DIAGRAM FX.12 3**

6.8 pcs./m<sup>2</sup>

Figure 84 • Installation patterns with snow guard for FX.12 roof panel

### 1.8.1 Special feature of joint offset with FX.12 roof panels

In principle, the FX.12 roof panels are laid at irregular intervals with an offset of the vertical angle fold of at least 220 mm. Due to any offset of the FX.12 roof panels, no symmetrical installation pattern is possible. If the use of snow guards is planned for FX.12, it is recommended to lay the FX.12 roof panels with a regular offset. This impairs the irregular appearance that can usually be achieved with FX.12 roof panels, however, a regular installation patterns is only possible with snow guards.



## 2 PIPE-STYLE SNOW GUARD SYSTEM



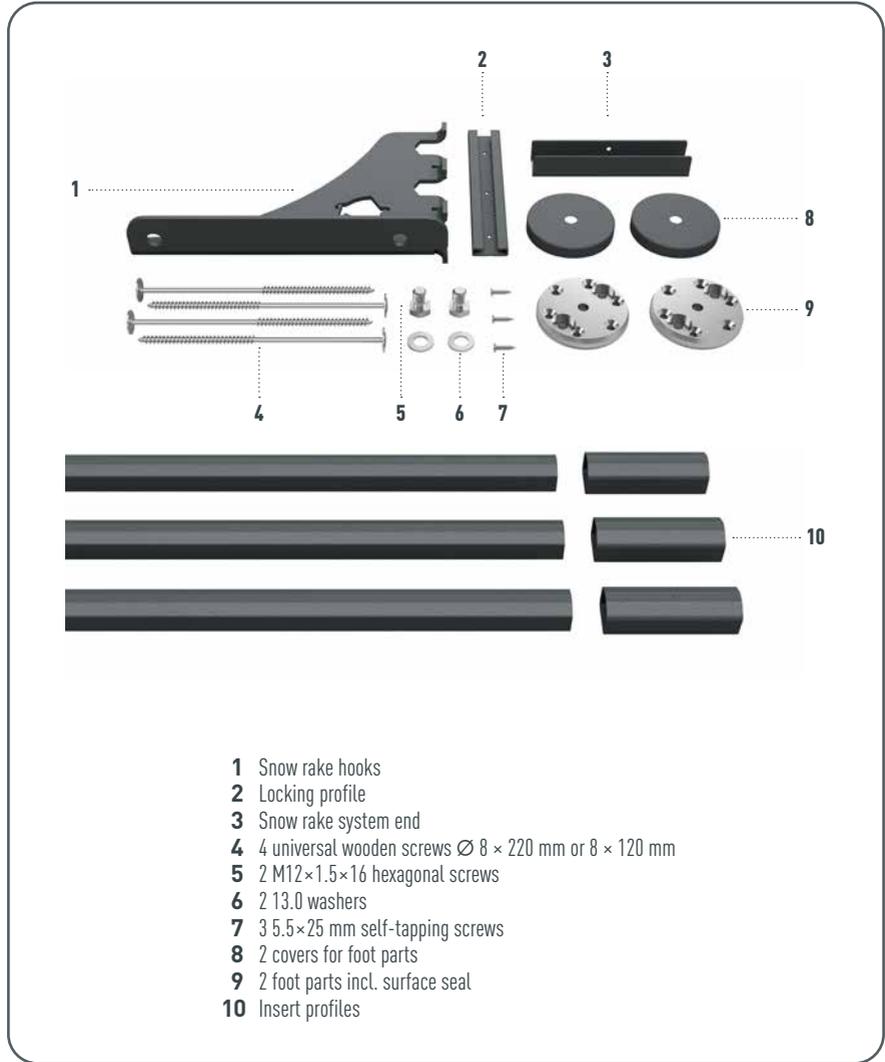
Figure 85 • Pipe-style snow guard system

The snow rake hooks are installed with two foot parts on the roof membrane. The insert profiles are inserted into the snow rake hook and fastened with a fixing slider. The insert profiles are then connected to each other using sockets - Total height with foot parts: 219 mm.

The snow rake system can also be retrofitted.

Depending on the object and location, it may be necessary to mount several rows of snow rakes. The maximum permissible distances are to be calculated depending on the snow load, the roof pitch and the rafter distance.

2.1 REQUIRED MATERIAL



- 1 Snow rake hooks
- 2 Locking profile
- 3 Snow rake system end
- 4 4 universal wooden screws  $\varnothing 8 \times 220$  mm or  $8 \times 120$  mm
- 5 2 M12x1.5x16 hexagonal screws
- 6 2 13.0 washers
- 7 3 5.5x25 mm self-tapping screws
- 8 2 covers for foot parts
- 9 2 foot parts incl. surface seal
- 10 Insert profiles

Figure 86 · Snow guard system – required material

Pipe-style snow guard system	
Substrate	Installation of a snow guard system always requires a fully supported substrate. When installing on battens, in the area of the snow guard system, the battens must be replaced by boards or plywood of the samethickness (mounted over at least 3 rafters).
Technical details	Made of color-coated, high-strength aluminum alloy, consisting of two foot parts with surface seal, snow rake hook and fixing slider, incl. fastening material
Dimensions	Hook (HxWxD): 205x50x300 mm Foot part: External $\varnothing$ : 87 mm, H: 14 mm Height of the snow guard: 200 mm

**NOTE**

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters). Do not place and fasten foot sections on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 2.2 REQUIRED TOOL



Figure 87 • Snow guard system – required tool

- Drill with torx TX40 and TX25
- Torque wrench, SW19 nut
- Tape measure
- Chalk line
- Pencil
- Drill (Ø 4.1 mm)

## 2.3 INSTALLATION



- Mark the centre of the rafter. The upper foot part (outer edge) should have a distance of at least 10 mm to the overlying fold. Observe distance (measured on the inside) between the two foot parts of 145 mm (Image 1).
- For attachment to the rafter, the drill holes (Ø 8.5 mm) must lie on the axis of the snow rake hook (course of the rafter) - Fixing screws in one axis with the rafter. Remove rear protective film on the foot parts, position and stick on (Image 2).

### NOTE

Do not place and fasten foot sections on the fold or crest of the PREFA roof coverings. Observe mounting areas on the respective roof products. It may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters).



- Pre-drill the screw holes in the substructure with a drill ( $\varnothing$  4.1 mm). Drilling depth: approx. 50 mm (Image 3).
- Fasten the foot parts with 2 fastening screws, each 8 × 220 mm (with double-shell construction) or 8 × 120 mm (with single-shell construction), on the rafter until the surface seal is pressed onto the roof covering or substructure. When processed correctly, the surface seal bulges slightly outwards (attachment for drill: Torx TX40) (Image 4).
- Attaching (placing) the cover caps to the foot parts (Image 5).



- Mounting of the snow rake hooks with both hexagon head screws (M12) to the foot parts (SW 19; torque: 35 Nm) for roof tiles (Image 6A), roof shingles (Image 6B), rhomboid roof tiles (Image 6C), R.16 and FX.12 (Image 6D).



- Insert profiles according to recesses in the mounted hooks. The overhang in the edge area may not exceed 30 cm (Image 7).
- After installing the 3 insert profiles, push the locking profile onto the hook from above (pre-drilled hole at the bottom) (Image 8).



- Fasten each insert profile once in the centre of the profile length with the supplied 5,5 × 25 mm TX25 self-tapping screws (1 pc. per insert profile) to prevent lateral shifting of the bars and to ensure profile expansion to the left (Image 9 + 10).



- Connect insert profiles in the joint area with the connecting sleeves supplied. The connecting elements have a foam element in order to be able to absorb linear expansion caused by heat (Image 11).

## 2.4 SNOW GUARD SYSTEM ICE CLAW



- Clamp the ice claw onto the insert profile (approx. 4 pcs. per metre) (Image 1).
- Fasten the ice claw with the supplied fastening screw (Image 2).
- Fully assembled ice claw (Image 3).

### CAUTION:

Only attach ice claws to the points where the roof covering rests on the roof surface.

## 2.5 SNOW GUARD SYSTEM END CAP



- Snow guard system - Push the end onto the insert profile (Image 1).
- Fasten the end cap with the supplied fastening screw (Image 2).
- Fully assembled end cap for the snowguard system (Image 3).

### 3 MOUNTAIN SNOW GUARD



Figure 88 - Mountain snow guard

Installation is carried out with two foot parts on the roof membrane. Round timber with Ø 140 mm can be inserted in the mountain snow guard supports and fixed using the screws provided. Total height of the supports with foot parts: 219 mm. The mountain snow guard supports can also be retrofitted. Available in all colors for PREFA roof systems (small format).

Depending on the object and location, it may be necessary to mount several rows of mountain snow guards. The maximum permissible distances are to be calculated depending on the snow load, the roof pitch and the rafter distance.

Mountain snow guard	
Substrate	Installation of the mountain snow guard system requires a fully supported substrate. When installing on battens, in the area of the mountain snow guard supports, the battens must be replaced by either boards or plywood of the same thickness (mounted over at least 3 rafters).
Technical details	Made of color-coated, high-strength aluminum alloy, consisting of two foot parts with surface seal, mountain snow guard supports and fixing slider, incl. fastening material, excl. round timber
Dimensions	Hook (H×W×D): 205×50×300 mm Foot part: External Ø: 87 mm, H: 14 mm Height of the snow guard: 184 mm

**NOTE**

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters). Do not place and fasten foot sections on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 3.1 REQUIRED MATERIAL

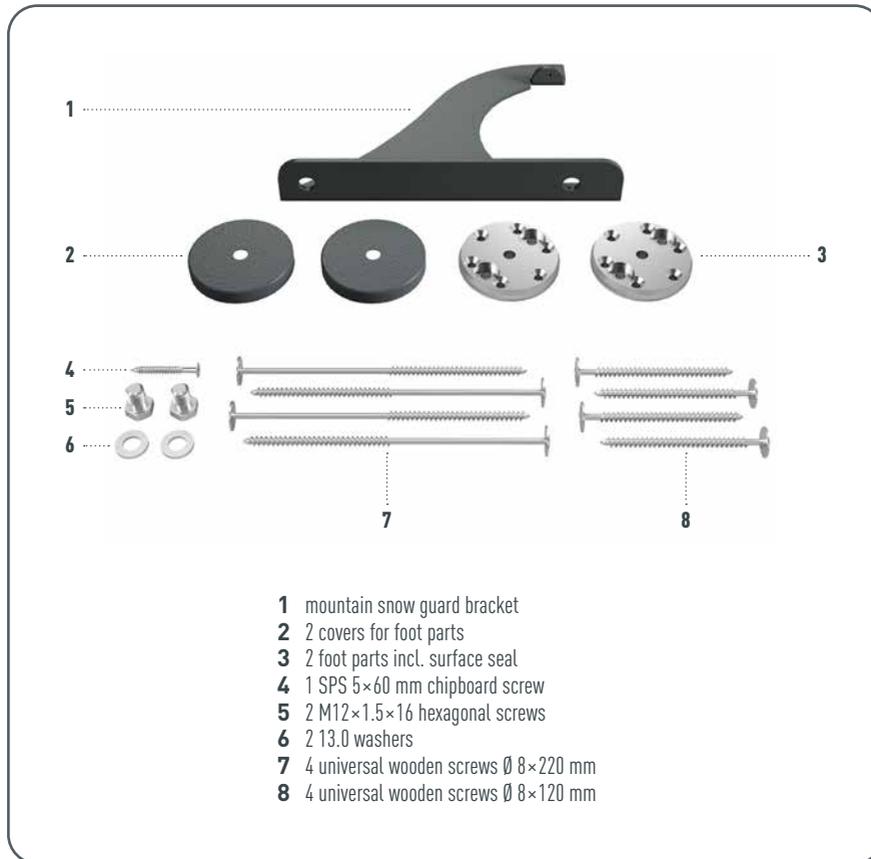


Figure 89 · Mountain snow guard – required material

## 3.2 REQUIRED TOOL



Figure 90 · Mountain snow guard – required tool

- Drill with torx TX40 and TX25
- Torque wrench, SW19 nut
- Tape measure
- Chalk line
- Pencil
- Drill (Ø 4.1 mm)

## 3.3 INSTALLATION



- Mark the centre of the rafter. The upper foot part (outer edge) should have a distance of at least 10 mm to the overlying fold. Observe a distance of both foot parts of 145 mm (measured on the inside) (Image 1).
- For attachment to the rafter, the drill holes (Ø 8.5 mm) in the foot parts must lie on the axis of the mountain snow guard supports (= course of the rafter) - Fixing screws in one axis with the rafter. Remove rear protective film on the foot parts, position and stick on (Image 2).

### NOTE

Do not place and fasten foot section on the fold or crest of the PREFA roof covering. It may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters).



- Pre-drill the screw holes in the substructure with a Ø 4.1 mm drill, drilling depth approx. 50 mm (Image 3).
- Screw the foot parts with 2 fastening screws, each 8 × 220 mm (with double-shell construction) or 8 × 120 mm (with single-shell construction), on the rafter until the surface seal is pressed onto the roof covering/substructure. When processed correctly, the surface seal bulges slightly outwards (attachment for drill: Torx TX40) (Image 4).
- Attaching (placing) the cover caps to the foot parts (Image 5).



- Mounting of the mountain snow guard support with both hexagon head screws (M12) to the foot parts (SW 19; torque: 35 Nm) for roof tiles (Image 6A), roof shingles (Image 6B), rhomboid roof tiles (Image 6C), R.16 and FX.12 (Image 6D).



- Insert round timber corresponding to the diameter of the mountain snow guard support ( $\varnothing$  approx. 140 mm) and fix with a screw (5 × 60 mm). The overhang in the edge area may not exceed 30 cm (Image 7 + 8).

## NOTE

Ice and, under certain circumstances, snow can slide down between the round timber and the roof covering. If necessary, additional snow guards or individually manufactured ice catchers can be attached (there is no PREFA standard product available).

## ROOF SAFETY

### 1 SAFETY TREAD



Figure 91 · Safety tread

The single step is a construction product made of aluminium for accessing roofs, is firmly connected to the load-bearing structure of pitched roofs and may be used for the purpose of inspection, maintenance and repair of systems above the roof surfaces. Single step corresponds to EN 516, class K1 and may not be used as an anchorage point for personal protective equipment. Suitable for roof pitches of 12-60°.

Safety tread	
Substrate	The basic requirement is a PREFA roof system installed in accordance with PREFA installation guidelines and a statically stable, full-surface substructure (full formwork at least 24 mm thick). When installing on battens, in the area of the walkway support system, the battens must be replaced by either timber boards or plywood of the same thickness, fastened over 3 rafters. The rafter distance may not exceed 1,000 mm.
Material specifications	Safety tread Aluminium AlMg1 H24, s = 5 mm Surface seal: Silicone panels Foot parts: EN AW 2007 AlCuPbMgMn Covering cap: PREFALZ colour aluminium coil Fixing screws/nuts Stainless steel, quality A2

### SAFETY INSTRUCTIONS

Before use, the entire roof access system must be visually inspected for obvious defects (e.g. loose screw connections, deformations, wear and tear, defective roof covering). If there are doubts about the safe function of the roof access system, this must be checked by a competent person (written documentation).

The system may only be assembled or used by persons who are familiar with this instruction manual, as well as with the locally applicable regulations.

If anything is unclear during assembly, it is imperative to contact the manufacturer.

Single step was developed for roof access and may not be used for any other purposes. Never hang loads on the single step or use it as an anchorage point for personal protective equipment.

Health restrictions (e.g. heart and circulatory problems, medication, alcohol) can affect the safety of the user when working at height.

Safety systems may no longer be used at wind speeds that exceed the usual level.

No changes may be made to the single step.

### NOTE

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the installation area). Do not place and fasten single step on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 1.1 REQUIRED MATERIAL

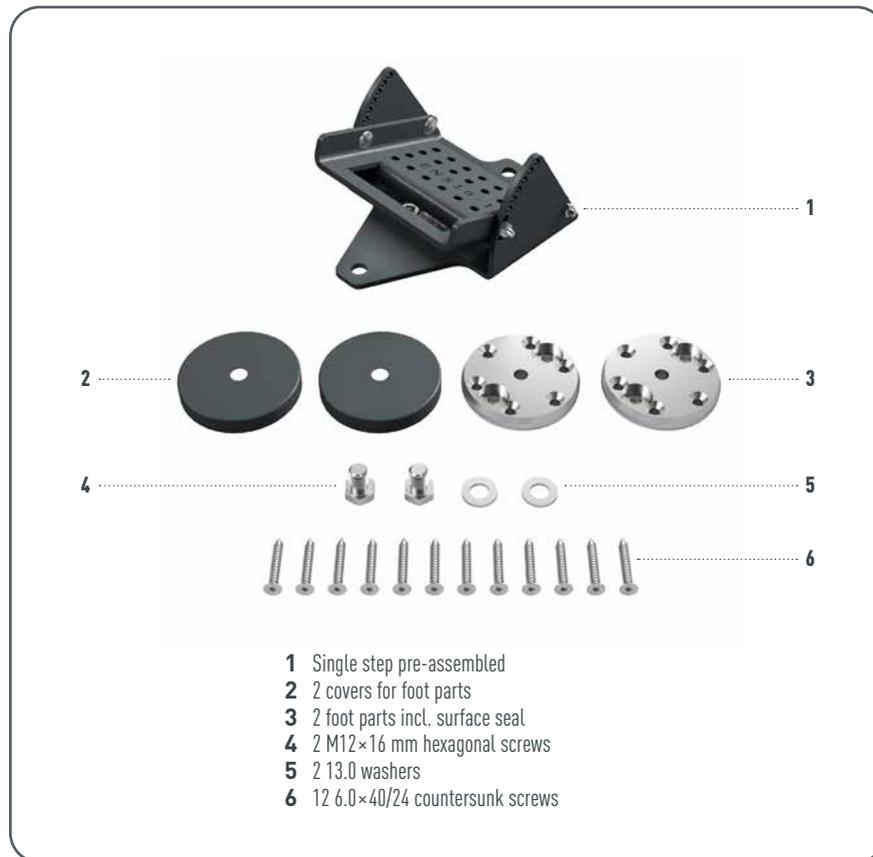


Figure 92 • Single step – required material

## 1.2 REQUIRED TOOL



Figure 93 • Single step – required tool

- Open-end wrench SW10
- Torque wrench, SW19 nut
- Drill with Torx TX25
- Spirit level
- Tape measure
- Pencil

## 1.3 INSTALLATION



- Pre-assemble the foot parts on the single step and then remove the covering film from both foot parts (Image 1).
- Position the single step at the desired point in the direction of the rafters and fasten the foot sections to the substructure with the supplied countersunk screws (Image 2).
- Unscrew the single step from the foot parts and fasten the foot parts to the substructure with the rest of the countersunk screws (Image 3).
- Position the cover caps on the foot parts (Image 4).



- Use a torque wrench to tightly screw the single step to the foot parts using the supplied hexagon head screws and washers. Tightening torque of 35 Nm (Image 5).
- Loosen the screws and self-locking nuts to adjust the incline and adjust the tread using a spirit level. Adjust the tread so that it does not deviate more than  $\pm 3^\circ$  from the horizontal (Image 6).
- Screw in the side screws again and fix on the incline (horizontal  $\pm 3^\circ$ ) using a self-locking nut (Image 7).
- Complete system with several single steps for accessing the roof. The distances between the individual steps are to be selected in such a way that they can be walked on without any problems (Image 8).

## 2 WALKWAY SUPPORT ON ONE MOUNT



Figure 94 · Walkway support on one mount

Walkway support system may only be used for walking on roofs and not as an anchorage point for personal protective equipment or for carrying loads. Walkway support conforms to EN 516, class K1, type A. Suitable for roof inclines of 12–55°.

Walkway support on one mount	
Substrate	The basic requirement is a PREFA roof system laid on full formwork in accordance with the valid standards/ professional rules with at least 24 mm and a statically stable substructure. When laying on battens, in the area of the walkway support system, the battens must be replaced by formwork of the same strength, fastened over 3 rafters. The rafter distance may not exceed 1,000 mm. The walkway supports are to be mounted on the formwork with the supplied foot parts.
Material specifications	<p><b>Material walkway support</b> Walkway support: Galvanised steel and powder-coated fixing screws/nuts: V2A</p> <p><b>Walkway material</b> Walkway: Galvanised steel and powder-coated fixing screws/nuts: M6×60/35 round-head screws, quality V2A with hammer head nut and PE washers</p>

### SAFETY INSTRUCTIONS

Walkway support on foot parts and walkway may only be mounted by professional/competent persons who are familiar with the roof access system according to the current state of the art technology.

The system may only be assembled or used by persons who are familiar with this instruction manual, as well as with the locally applicable regulations.

Health restrictions (e.g. heart and circulatory problems, medication, alcohol) can affect the safety of the user when working at height.

If anything is unclear during assembly, it is imperative to contact the manufacturer.

Before use, the entire roof access system must be visually inspected for obvious defects (e.g. loose screw connections, deformations, wear and tear, defective roof connections, etc.).

If there are doubts about the safe function of the roof access system, this must be checked by a competent person (written documentation).

Walkway support system was developed for roof access and may not be used for any other purposes.

Never hang loads on the walkway support system or use it as an anchorage point for personal protective equipment.

No changes may be made to the walkway support.

### NOTE

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the installation area). Do not place and fasten walkway support on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 2.1 REQUIRED MATERIAL

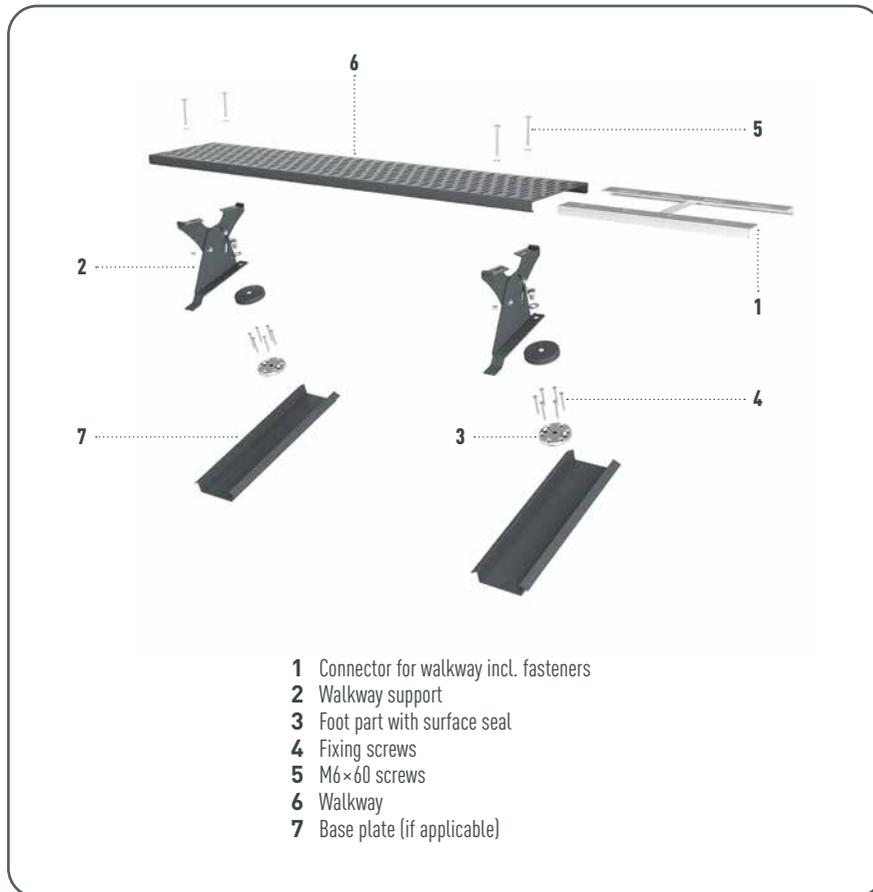


Figure 95 · Walkway support on one mount – required material

## 2.2 REQUIRED TOOL



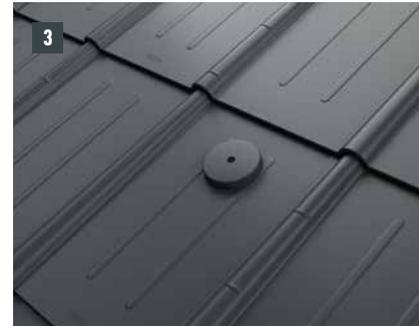
Figure 96 · Walkway support on one mount – required tool

- Open-end wrench SW10
- Torque wrench, SW19 nut
- Drill with Torx TX25
- Spirit level
- Tape measure
- Chalk line
- Pencil

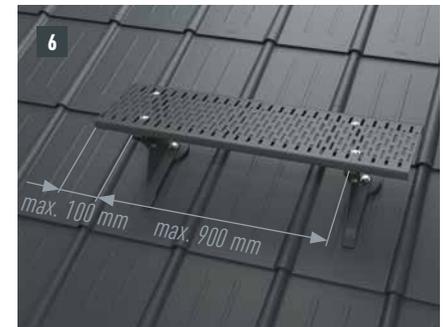
## 2.3 INSTALLATION



- Mark the upper edge of the foot part. Hereby note the assembly areas of the PREFA products. Ideally, a distance of 30 mm is recommended from the lower edge of the fold cover to the upper edge of the foot part. This distance is within the permitted installation range and ensure that the PREFA roof covering can continue to be covered or, for example, the subsequent replacement of PREFA roof systems (Image 1).
- Remove the cover film from the foot section and stick it to the previously marked area. Unscrew all six holes of the foot part for mounting on formwork with the supplied 6.0 × 40 mm countersunk screws (Image 2).



- Position the cover cap on the foot part (Image 3).
- Use a torque wrench to tightly screw the walkway support to the foot part using the supplied hexagon head screws and washers. Observe tightening torque of 35 Nm (Image 4).



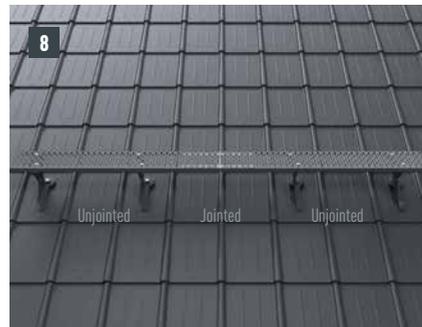
- Align the bridge according to the roof pitch (12–55°) and screw tight with the 20 Nm torque wrench (Image 5).
- Fasten walkways on at least two supports with the enclosed 4 special M6 × 60 mm screws, hammer head nuts and PE washers. The max. distance between supports is 900 mm, the max. overhang laterally over the supports is max. 100 mm (Image 6).

## 3 WALKWAY SUPPORT ON TWO MOUNTS



Figure 97 · Walkway support on two mounts

Walkway support system may only be used for walking on roofs and not as an anchorage point for personal protective equipment or for carrying loads. Walkway support conforms to EN 516, class K1, type B. Suitable for roof inclines of 12–55°.



- Connect element parts of the walkway connector with the spring. Slide the walkway connector into the walkway so that the spring snaps into the gap in the joint between the two walkways (Image 7).
- A joined field must always be followed by an unjoined field (Image 8).

Walkway support on two mounts	
Substrate	The basic requirement is a PREFA roof system laid on full formwork in accordance with the valid standards/ professional rules with at least 24 mm and a statically stable substructure. When installing on battens, in the area of the walkway support system, the battens must be replaced by either timber boards or plywood of the same thickness, fastened over 3 rafters. The rafter distance may not exceed 1,000 mm. The walkway supports are to be mounted on the formwork with the supplied foot parts.
Material specifications	<p><b>Material walkway support</b> Walkway support: Galvanised steel and powder-coated fixing screws/nuts: V2A</p> <p><b>Walkway material</b> Walkway: Galvanised steel and powder-coated fixing screws/nuts: M6×60/35 round-head screws, quality V2A with hammer head nut and PE washers</p>



## SAFETY INSTRUCTIONS

Walkway support on foot parts and walkway may only be mounted by professional/competent persons who are familiar with the roof access system according to the current state of the art technology.

The system may only be assembled or used by persons who are familiar with this instruction manual, as well as with the locally applicable regulations.

Health restrictions (e.g. heart and circulatory problems, medication, alcohol) can affect the safety of the user when working at height.

If anything is unclear during assembly, it is imperative to contact the manufacturer.

Before use, the entire roof access system must be visually inspected for obvious defects (e.g. loose screw connections, deformations, wear and tear, defective roof connections, etc.).

If there are doubts about the safe function of the roof access system, this must be checked by a competent person (written documentation).

Walkway support system was developed for roof access and may not be used for any other purposes.

Never hang loads on the walkway support system or use it as an anchorage point for personal protective equipment.

No changes may be made to the walkway support.

## NOTE

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the installation area). Do not place and fasten walkway support on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 3.1 REQUIRED MATERIAL

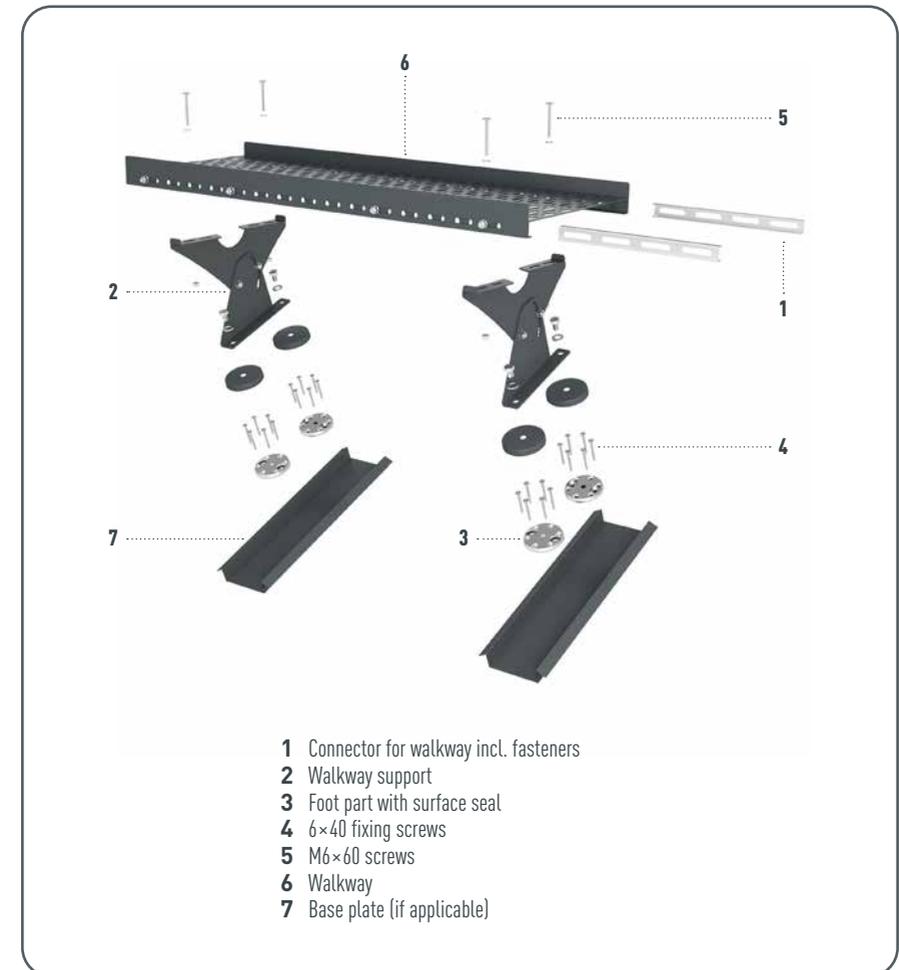


Figure 98 · Walkway support on two mounts – required material

3.2 REQUIRED TOOL



Figure 99 · Walkway support on two mounts – required tool

- Open-end wrench SW10
- Torque wrench, SW19 nut
- Drill with Torx TX25
- Spirit level
- Tape measure
- Chalk line
- Pencil

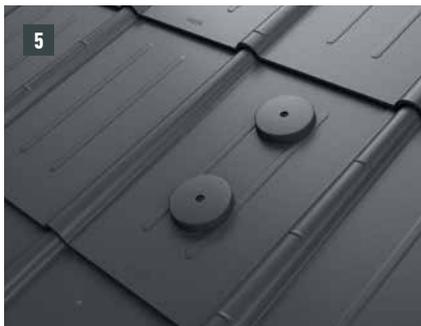
3.3 INSTALLATION



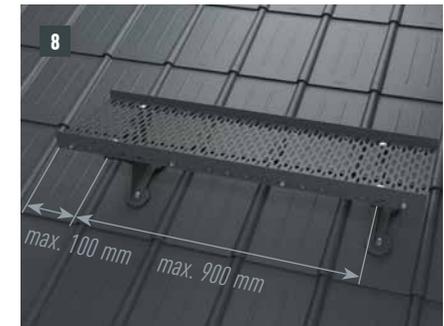
- Mark the upper edge of the foot part. Hereby note the assembly areas of the PREFAs products. Ideally, a distance of 30 mm is recommended from the lower edge of the fold cover to the upper edge of the foot part. This distance is within the permitted installation range and ensure that the PREFAs roof covering can continue to be covered or, for example, the subsequent replacement of PREFAs roof systems (Image 1).
- Remove the cover film from the foot section and stick it to the previously marked area. Unscrew all six holes of the foot part for mounting on formwork with the supplied 6.0 × 40 mm countersunk screws (Image 2).



- Mark the distance of 90 mm between the foot parts. The second foot part must be aligned with the upper foot part in the direction of the rafters (Image 3).
- Remove the cover film from the foot section and stick it to the previously marked area. Unscrew all six holes of the foot part for mounting on formwork with the supplied 6.0 × 40 mm countersunk screws (Image 4).



- Position the cover caps on the foot parts (Image 5).
- Use a torque wrench to tightly screw the walkway support to the foot parts using the supplied hexagon head screws and washers. Observe tightening torque of 35 Nm (Image 6).



- Align the bridge according to the roof pitch (12–55°) and screw tight with the 20 Nm torque wrench (Image 7).
- Fasten walkways on at least two supports with the enclosed 4 special M6 × 60 mm screws, hammer head nuts and PE washers. The max. distance between supports is 900 mm, the max. overhang laterally over the supports is max. 100 mm (Image 8).



- Push the element parts of the walkway connector into the walkway. Fasten the elements laterally with the screws supplied (Image 9).
- A jointed field must always be followed by an unjointed field (Image 10).

## 4 ROOF ANCHOR HOOK

according to EN 517 B



Figure 100 • Safety roof hooks on base plate

As an anchorage point on a pitched roof for a single person with protective equipment and energy absorbers according to EN 355. Suitable for hanging roofer's ladders and for fastening roofer's chairs. Never hang undefined loads on the safety system. The safety roof hooks were checked for roof installation in accordance with EN 517:2006, type B (-y) in all load directions (also in -y- direction = ridge direction). Do not forget the photo documentation of the professional attachment to the structure.

Roof anchor hook	
Substrate	The basic requirement is a PREFA roof system laid on full formwork in accordance with the valid standards/ professional rules with at least 24 mm and a statically stable substructure. Smallest rafter cross-section: 80×100 mm.
Material	Galvanised steel and powder-coated safety roof hooks. Covering cap and strips: Aluminium 3005 (AlMn1Mg0.5) in accordance with EN 573-3 Fixing screws: HBS Komplex S-20 8×220/100 + R T/40 ZnNi C4 , HBS Komplex S-20 8×120/80 + R T/40 ZnNi C4

### SAFETY INSTRUCTIONS

Safety roof hooks may only be mounted by professional/competent persons who are familiar with the roof safety system according to the current state of the art technology.

The system may only be assembled or used by persons who are familiar with this instruction manual - as well as with the locally applicable safety regulations - and who are trained in how to use PPE (personal protective equipment).

The anchorage point should be planned, assembled and used in such a way that, with professional use of the PPE, it is not possible to fall over the edge. The respective accident prevention regulations of the respective country are to be observed.

The anchorage point on the roof is intended for loading in all directions parallel to the mounting surface.

When accessing the roof safety system, the positions of the anchorage devices must be documented with plans (e.g.: sketch of the top view of the roof).

Before use, the entire safety system must be visually inspected for obvious defects (e.g. loose screw connections, deformations, wear and tear, defective roof connections, etc.). If there are doubts about the safe function of the safety system, this must be checked by an expert (written documentation).

The entire safety device must be checked at least once a year by a competent person.

After a fall, the entire safety system must be withdrawn from further use and checked by an expert. Where necessary, the safety roof hooks must be replaced.

No changes may be made to the approved anchorage device.

## NOTE

PREFA installation guidelines, applicable standards and specialist rules must be observed. The safety roof hooks are to be mounted in the middle of the rafters with the screws supplied.

The depth of penetration of the original fixing screws into the load-bearing substructure (rafters) must be at least 80 mm.

For 29 × 29 rhomboid roof tiles and 44 × 44 roof shingles, the installation of a base plate is required.

For roof tiles, R.16 roof tiles and FX.12 roof panels, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters).

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 4.1 REQUIRED MATERIAL

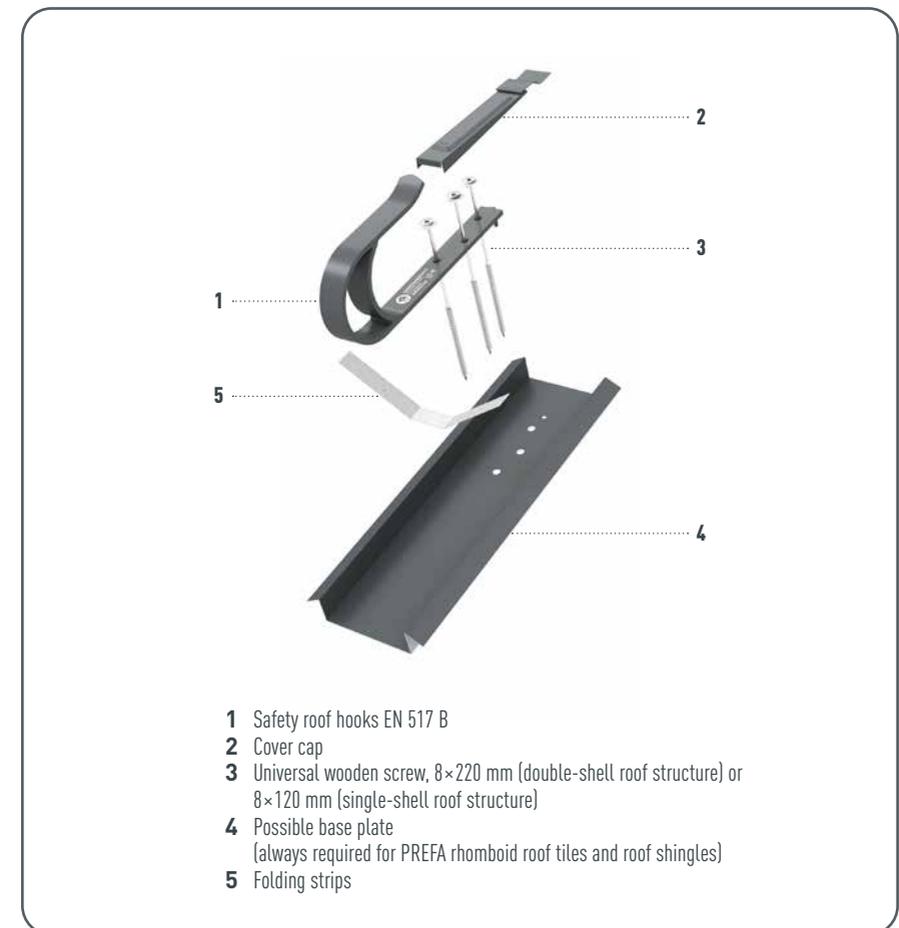
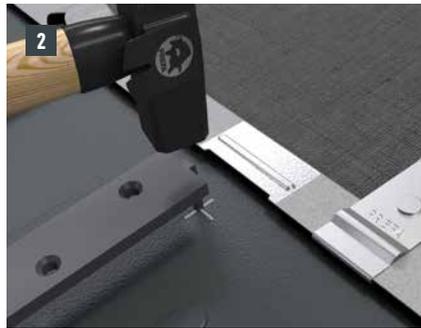


Figure 101 • Safety roof hooks – required material

## 4.2 INSTALLATION



- Mark the rafters and the upper edge of the roof hook (25-30 mm) (Image 1).
- Place the roof hook in the middle of the rafter and mark it on the roof surface by hammering in the tip (Image 2).



- Mark the screw holes on the PREFA roof covering (Image 3).
- Pre-drill the screw holes with  $\varnothing 5$  mm (Image 4).



- Apply sealant around the drill holes and the impact point (Image 5).
- Set screws, underlay  $0.7 \times 22 \times 250$  mm locking strips and tighten. The depth of penetration of the original fixing screws into the load-bearing sub-structure (rafters) must be at least 80 mm (Image 6).



- Slide the cover cap into the upper hook fold, fold over and nail (Image 7).
- Fasten cover cap by folding over the closure strip (Image 8).

## 5 ROOF ANCHOR HOOK WITH MOUNTS

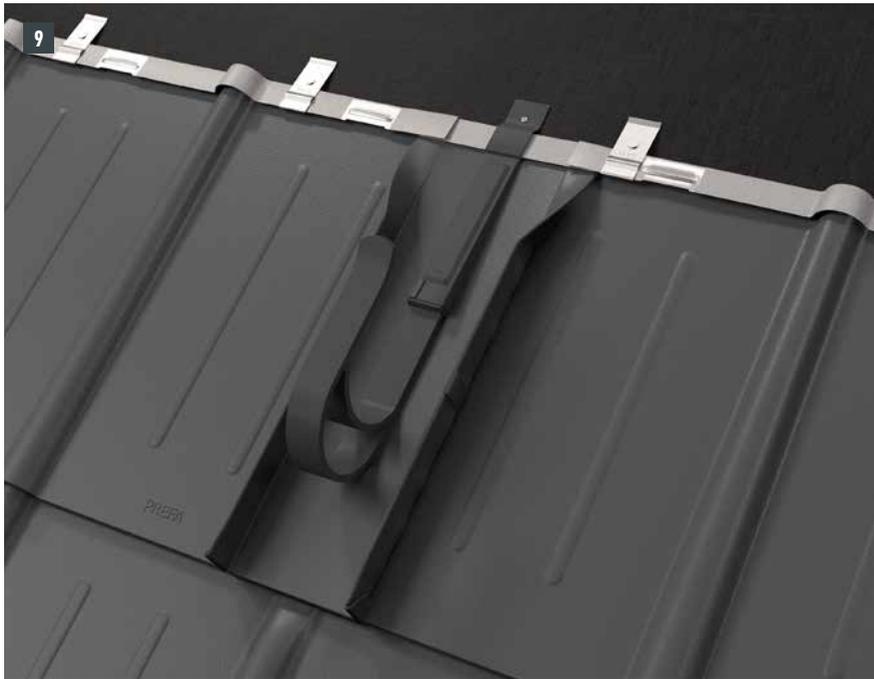


Figure 102 • Roof anchor hook with mounts

As an anchorage point on a pitched roof for a single person with protective equipment and energy absorbers according to EN 355. Suitable for hanging roofer's ladders and for fastening roofer's chairs. Do not forget the photo documentation of the professional attachment to the structure.

- Safety roof hooks installed on base plate.

Roof anchor hook with mounts	
Substrate	The basic requirements for a professional installation is a PREFALZ roof system laid in accordance with the valid standards/ professional rules and a statically stable wooden substructure (rafters at least 8/8 cm with at least 24 mm full formwork, at least 10×14 cm for rafter insulation). When laying on battens, in the area of the safety roof hooks, the battens must be replaced by formwork of the same strength (mounted over at least 3 rafters).
Material	Roof anchor hook Stainless steel 1.4301 Foot parts: EN AW 2007 AlCuPbMgMn Surface seal: Silicone panels Covering cap: PREFALZ colour aluminium coil Fixing screws: HBS Komplex S-20 8×220/100 + R T/40 ZnNi C4, HBS Komplex S-20 8×120/80 + R T/40 ZnNi C4 Fixing screws/nuts and washers: Stainless steel, quality 1.4301

## SAFETY INSTRUCTIONS

Before use, the entire safety system must be visually inspected for obvious defects (e.g. loose screw connections, deformations, wear and tear, defective roof covering). If there are doubts about the safe function of the roof access system, this must be checked by a competent person (written documentation).

The system may only be assembled or used by persons who are familiar with this instruction manual, as well as with the locally applicable regulations, and who are trained in how to use PPE (personal protective equipment).

Safety roof hooks on foot parts may only be mounted by professional/competent persons who are familiar with the roof access system according to the current state of the art technology.

The safety system should be planned, assembled and used in such a way that, with professional use of the PPE, it is not possible to fall over the edge. The respective accident prevention regulations of the respective country are to be observed.

When accessing the roof safety system, the positions of the safety roof hooks must be documented with plans (e.g. sketch of the top view of the roof).

The entire safety device must be checked at least once a year by a competent person.

After a fall, the entire safety system must be withdrawn from further use and checked by an expert. Where necessary, the safety roof hooks must be replaced.

No changes may be made to the safety roof hooks.

Stainless steel must not come into contact with grinding dust or steel tools. This leads to the formation of corrosion.

## NOTE

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters). Do not place and fasten safety roof hooks on foot sections on the fold or crest of the PREFA roof covering.

**CAUTION: Observe installation areas of the PREFA roof systems.**

## 5.1 INSTALLATION



- Mark the centre of the rafter. The upper foot part (outer edge) should have a distance of at least 10 mm to the overlying fold. Observe distance (measured on the inside) of 84.5 mm between the two foot parts. For attachment to the rafter, the drill holes ( $\varnothing$  8.5 mm) must lie on the axis of the snow rake hook (= course of the rafter) - Fixing screws in one axis with the rafter. Remove rear protective film on the foot parts, position and stick on (Image 1 + 2).

## NOTE

Do not place and fasten foot section on the fold or crest of the PREFA roof covering. It may be necessary to fit a base plate (e.g. if there is a rebate or crest in the area of the rafters).



- Pre-drill the screw holes in the substructure with a  $\varnothing$  4.1 mm drill, drilling depth approx. 50 mm (Image 3).
- Screw the foot parts with 2 fixing screws, each  $8 \times 220$  mm (with double-shell construction) or  $8 \times 120$  mm (with single-shell construction), on the rafter until the surface seal is pressed onto the roof covering/substructure. When processed correctly, the surface seal bulges slightly outwards (attachment for drill: Torx TX40) (Image 4).



- Attaching (placing) the cover caps to the foot parts (Image 5).
- Mounting of the safety roof hooks with both hexagon head screws (M12) to the foot parts (SW19; torque: 35 Nm) (Image 6).

## PENETRATIONS AND VENTS/EDGING

### 1 CHIMNEY SURROUNDINGS

Chimney surroundings is carried out professionally and in the usual way as a tinsmith. Prepare the standing seam joints by bending up the PREFA roof covering (30 mm) for attaching the side panelling.

#### 1.1 ROOF TILE

##### 1.1.1 Front part

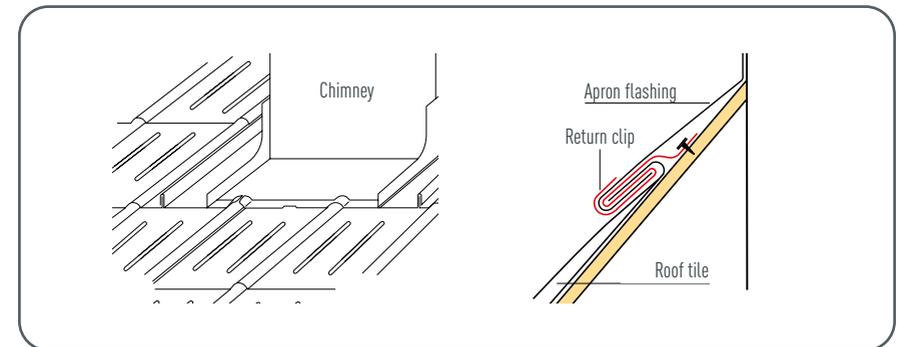
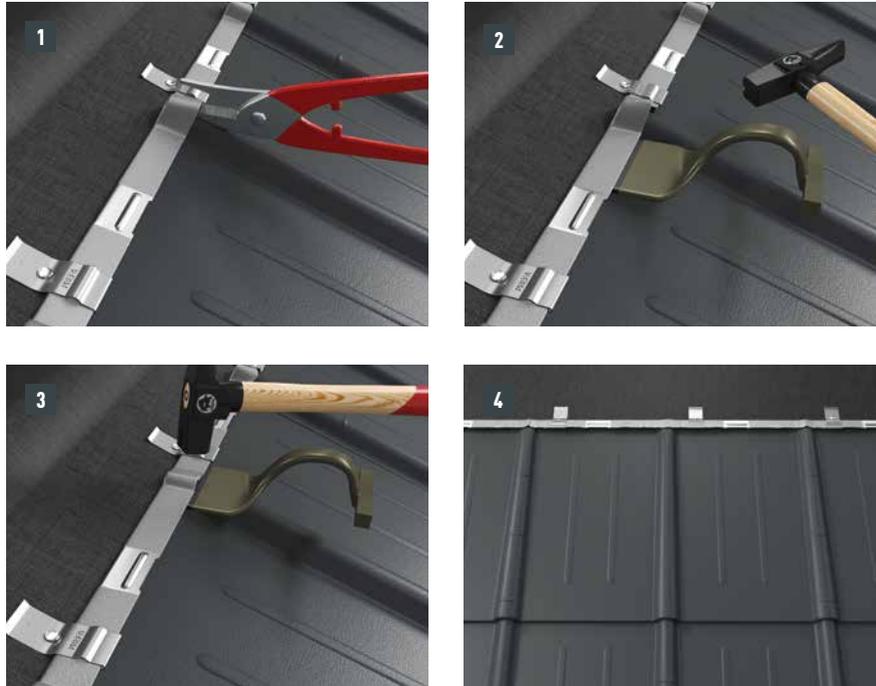


Figure 103 · Chimney surroundings - roof tile

After installing the roof tile, the top plate fold is to be aligned in such a way that it is possible to hang a straight front part.



- Cut the cover of the bead high point (Image 1) and lift the cover with the seaming iron (Image 2).
- Use the hammer to tap the bead flat (Image 3) so that an evenly open fold is formed. It is not necessary to cut into the panel joint. Now the front part (apron flashing) can be hooked in without any problems.

## 1.1.2 Side part

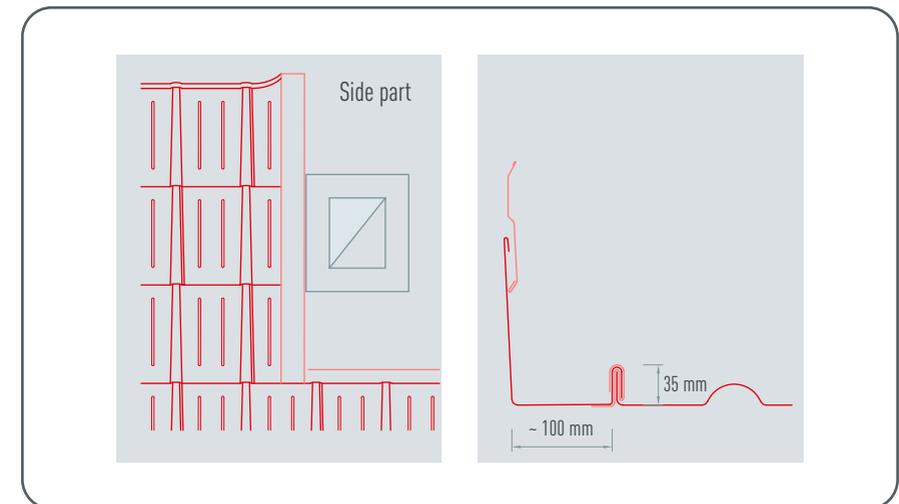


Figure 104 • Chimney surroundings - roof tile - side part

The length of the side part depend on the entire roof elements and fold allowances. At the lower end, hook in the side part in the roof tile.

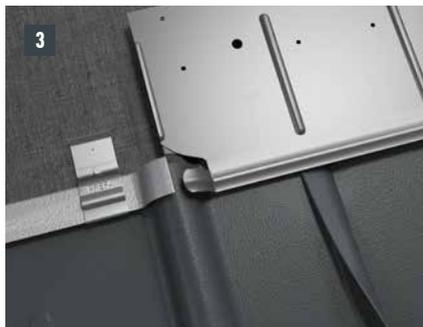
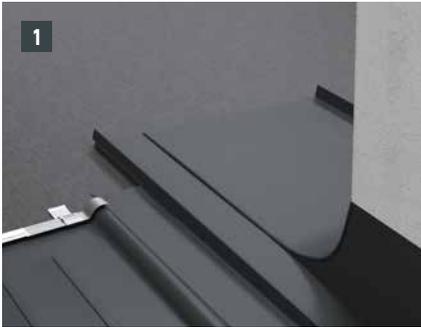
In the upper area, the side part should protrude over the top panel cover.

**For variant 1 - 150 mm**

**For variant 2 - 70 mm**

## 1.1.3 Back flashing part

### 1.1.3.1 Variant 1

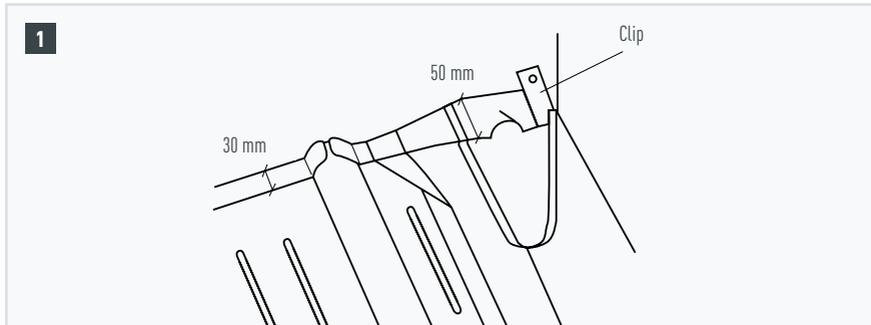


- Pull the neck part of the flashing approx. 150 mm over the top edge of the panel. Fold up the upper roof tile cover up to the next roof tile bead (Image 1).
- In order to increase safety against flying snow in this area, stick compriband over the entire overlapping area (Image 2).
- Cut the roof panel starter strip exactly to the panel bead. The front side of the roof tile starter strip must be flush with roof tile fold along its entire length (Image 3).



- Attach starter strip to all designated small nail holes (Image 4).
- Cover the roof tiles in the covering direction as on the roof surface (Image 5).

## 1.1.3.2 Variant 2



- Make a back flashing in a traditional way and make a 50 mm return 20 mm above the top edge of the tile. Bend the return downwards. This makes it easier to work in the bead.
- The next row of panels is hung in the neck part and then covered.

### TIP:

We highly recommend to mark all dimensions around the chimney properly

## 1.2 29×29 AND 44×44 RHOMBOID ROOF TILE

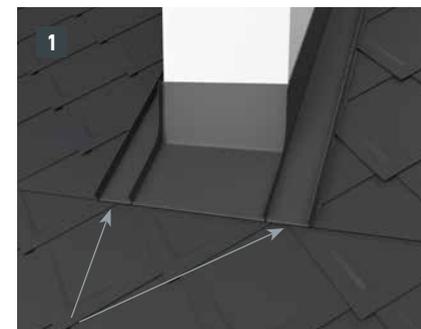
### 1.2.1 Front part



Figure 105 • Chimney edging - 29×29 and 44×44 rhomboid roof tile - front part

In preparation for the front part of the frame, end plates are to be laid for 29 × 29 or 44 × 44 rhomboid roof tiles. These enable a horizontal hook-on seam for rain-proof integration of the edging. Fasten each end panel for 29 × 29 rhomboid roof tiles with 1 patent clip and, for 44 × 44 rhomboid roof tiles, with 2 patent clips.

### 1.2.1.1 Special feature of 29×29 rhomboid roof tile



When laying end panels for 29 × 29 rhomboid roof tiles, the supplied cover strips are to be mounted above the 29 × 29 rhomboid roof clip.

## 1.2.2 Side part

The length of the side part depend on the entire roof elements and fold allowances. At the lower end, hook in the side part in the PREFEA roof covering. In the upper area, the side part should protrude over the top panel cover.

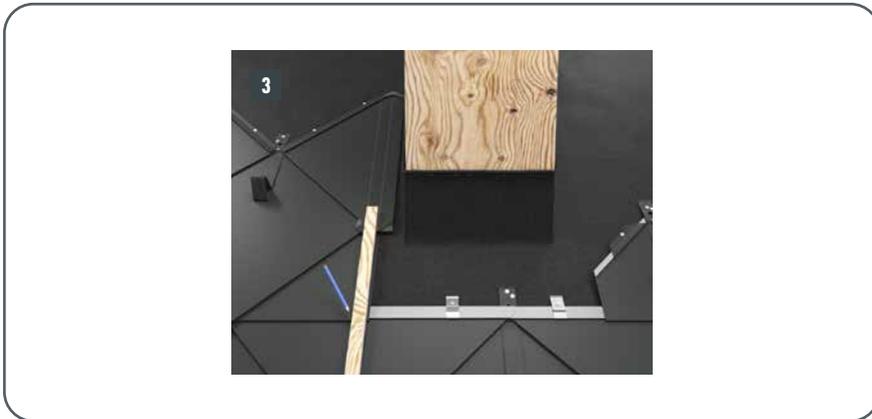


Figure 106 • Chimneysurroundings - 29×29 and 44×44 rhomboid roof tile - side channels

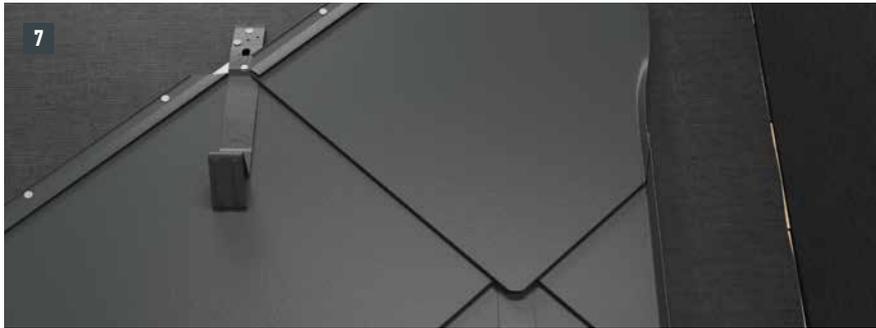
Mark the 29 × 29 and 44 × 44 rhomboid roof tiles depending on the width of the edging or depending on the required cut, add 30 mm for the lateral edging and trim the rhomboid roof tiles (Image 3).

With each lateral upstand of the rhomboid roof tiles, the folds running diagonally downwards are to be cut out and bent up on the underside (Image 4-6).

### 1.2.2.1 Special feature of 44×44 rhomboid roof tile



The sloping patent fold is to be notched at the top in the area of the raised edge corresponding to Image 6.



- After cutting out the sloping folds, the rhomboid roof tiles on the side connections are raised approx. 30 mm (Image 7). Only a professional installation guarantees a rainproof roof.
- After preparing the rhomboid roof tiles, the side flashing can be produced and inserted into the roof covering. Fix the side part to the substructure with return clips (Image 8).

## 1.2.3 Back flashing part

Fold over the vertical folds of the side parts in the upper area (Image 10) and trim the neck part and the side parts with an allowance of 30 mm (Image 11). Make the cover - now starting plates for 29 × 29 or 44 × 44 rhomboid roof tiles can be mounted above the edging, and the covering of the roof surface can be continued.



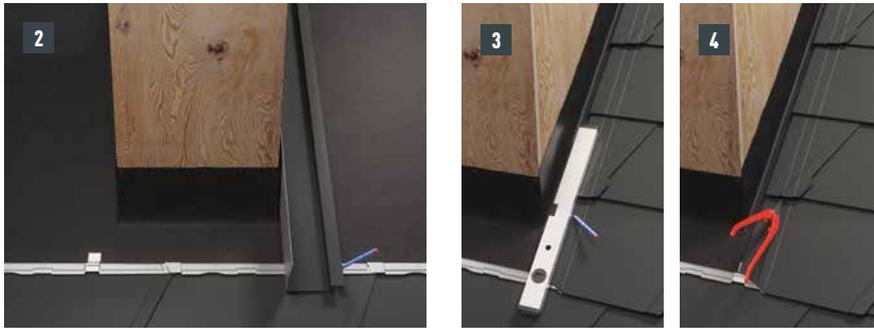
## 1.3 ROOF SHINGLE AND DS.19 SHINGLE

### 1.3.1 Front part



Pull up roof shingle and DS.19 shingle until the last row of PREFA roof covering can be covered under the chimney.

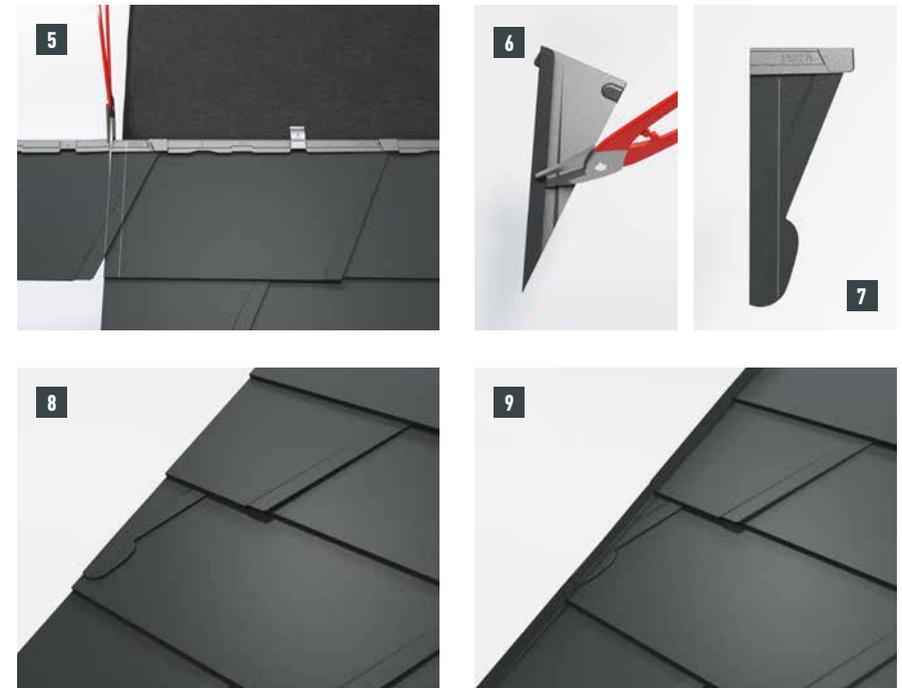
## 1.3.2 Side part



- Mark the cutting and bending line depending on the width of the side panel (approx. 100 mm) (Image 2).
- Cover the roof shingle or DS.19 shingle laterally next to the chimney and cut this depending on the width of the side parts (approx. 100 mm) with an allowance of 30 mm for subsequent raising of the roof covering (Image 3 + 4).

### NOTE

With each left-hand upstand of the roof shingle and DS.19 shingle, the folds running diagonally downwards are to be notched in order to avoid any capillary action.



- Mark the upstand area and 30 mm fold allowance and cut at the fold allowance (Image 5).
- Make rebate notches (Image 6 + 7).
- Cover notched roof shingle or DS.19 shingle and edge up (Image 8 + 9).

Only a professional installation guarantees a rainproof roof.



Prepare the surroundings (back and side part) and fix these to the side parts of the substructure with return clips.

### 1.3.3 Back flashing part



Place the vertical folds of the side parts in the upper area and trim the back part and the side parts with an allowance of 30 mm. Make the cover - now the covering of the roof surface above the surroundings can be continued.

## 1.4 R.16 ROOF TILE AND FX.12 ROOF PANEL

### 1.4.1 Front part

Pull up R.16 roof tile or FX.12 roof panel until the last row of PREFA roof covering can be covered under the chimney.

The length of the front part depends on the entire roof elements and fold allowances. At the lower end, hook in the front part in the PREFA roof covering.

### 1.4.2 Side part

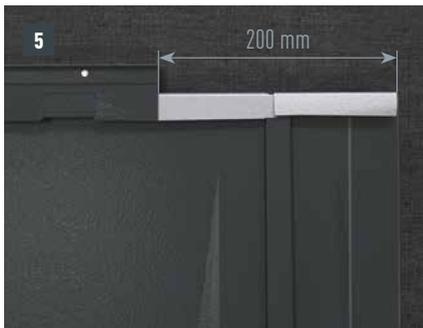


- When joining to the chimney, mark a 30 mm overhang for the standing seam and trim the PREFA roof covering (Image 1).
- Prepare the standing seam joints by bending up the PREFA roof covering (30 mm) for attaching the side panelling (Image 2).
- After preparing the roof covering, the side flashing can be produced and inserted into the roof covering. Fix the side part to the substructure with return clips.

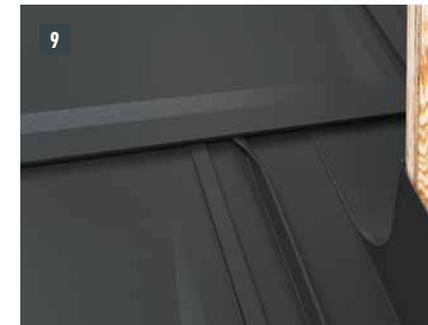
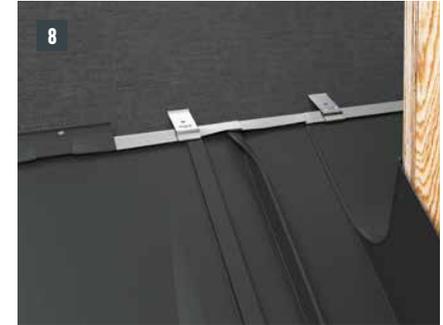


Notch the upper patent fold in the area of the raised edge so that a hook fold remains and bend the R.16 roof tile or the FX.12 roof panel upwards 30 mm at a right angle to the roof surface (Image 3 + 4).

### 1.4.3 Back flashing part



When edging backpart, the upper hook-on seam of the R.16 roof tiles or FX.12 roof panels to be covered is cut at approx. 200 mm and notched. The hook-on seam is bent backwards and the side overhang is bent up 90°. The back part of the surroundings to be installed.



- Close the standing seam at the side, fold it outwards at the upper end and mark the neck part along the course of the PREFA roof covering, trim, fold over and fasten with clips (Image 7 + 8).
- The following row of PREFA roof covering can then be covered over the entire width (Image 9).

## 2 ROOF WINDOW EDGING

Previously, all roof window edging had to be handcrafted by craftsmen themselves in a laborious and time-consuming process. But that's over now. PREFA now supplies top-quality prefabricated roof window edging for Velux and Roto roof windows for quick, precise assembly.

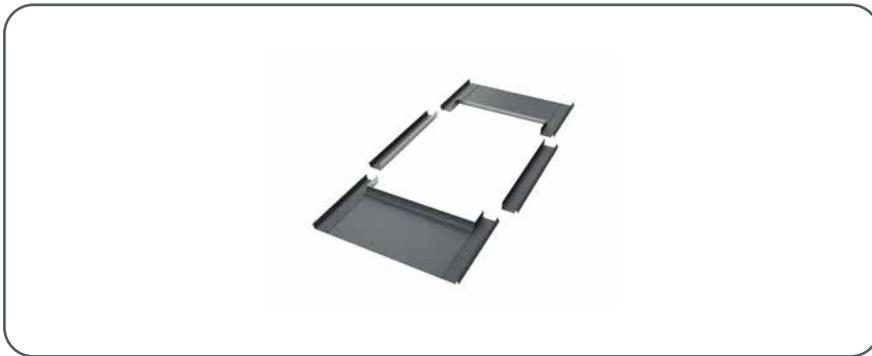


Figure 107 · Roof window edging

### Roof window edging

Technical details

Colour-coated aluminium  
in all standard colours, stucco

### NOTE

The height of the lateral upstand is determined by the already prepared seams of the flashings. Therefore, attach the front and back parts to the roof window and mark the position of the upstand.

**CAUTION: Below a roof pitch of 20°, the transverse seams and overlapping joints of the surrounding flashings are to be additionally sealed.**

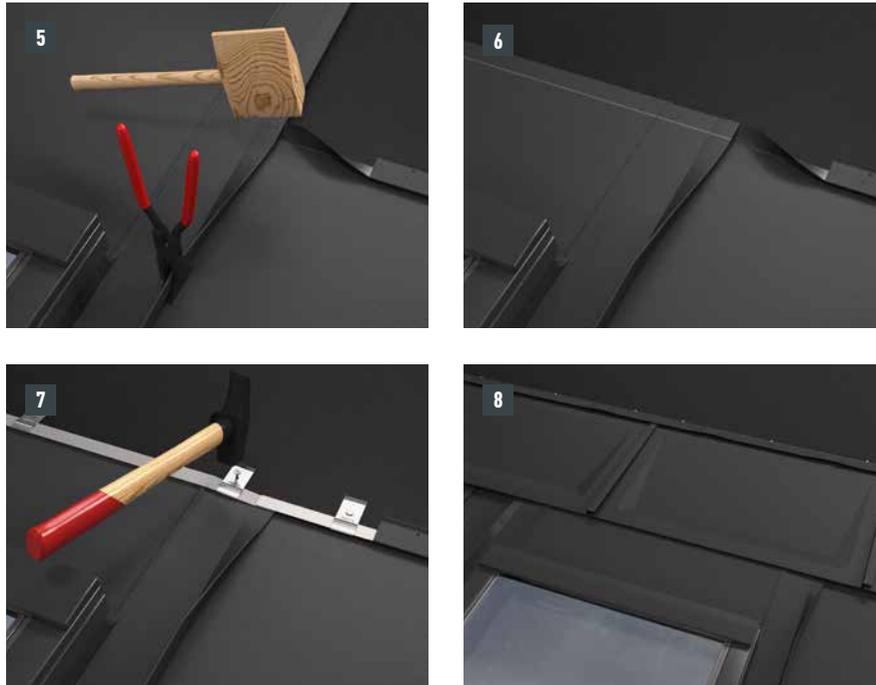
Please follow PREFA's installation instructions as well as the current technical standards and safety regulations during installation.

## 2.1 INSTALLATION

Install the roof cover until the last row below the window.



- When connecting to the window, mark and trim the 30 mm overhang (Image 1).
- Prepare the standing seam connections by bending up the PREFA roof covering (30 mm) for attaching the side part panelling. Set up 30 mm overhang (Image 2).
- The length of the front part depends on the entire roof elements and fold allowances. At the lower end, hook in the front part in the PREFA roof covering (Image 3).
- Open the upper panel fold of the PREFA roof covering and raise the lateral overhang by 90°. the back part can now be installed (Image 4).



- Fold the side standing seam at the upper end of the back part outwards (Image 5).
- Trim the back part of the roof window edging along the course of the PREFA roof covering, fold over and fasten with clips (Image 6 + 7).
- The following row of each roof covering can then be installed over the entire width (Image 8).

## 2.2 SPECIAL FEATURE OF ROOF TILES

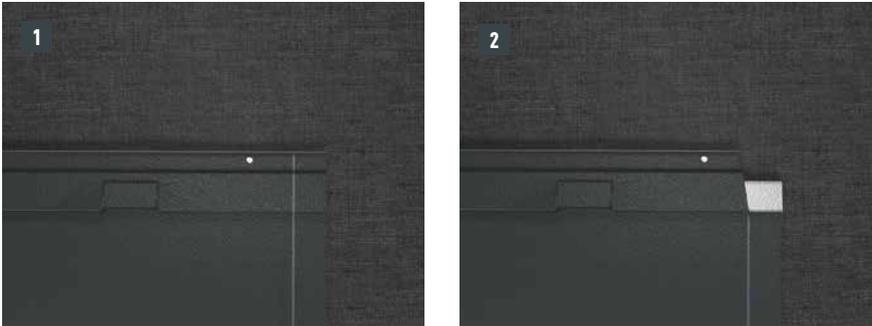
After installing the roof tile in the desired position in the roof window surroundings, the top plate fold is to be aligned in such a way that it is possible to hang the front part of the PREFA roof window edging.



- Cut the cover of the bead high point and lift the fold with theseaming iron (Image 1 + 2).
- Use the hammer to flatten the bead to allow a continuous seam. It is not necessary to cut into the panel joint (Image 3).
- Now the apron flashing can be hooked in without any problems (Image 4).

## 2.3 SPECIFICS WITH R.16 ROOF TILE AND FX.12 ROOF PANEL

### 2.3.1 Abutment details



Notch the upper patent fold in the area of the raised edge so that a hook fold remains and bend the R.16 roof tile or the FX.12 roof panel upwards 30 mm at a right angle to the roof surface.

### 2.3.2 Back flashing part



- When preparing the back flashing notch the top fold of the panels for about 200 mm (Image 3).
- Open upper fold of the PREFA roof covering and set up the roof covering to the side of the marking (Image 4).

## 2.4 SPECIAL FEATURE OF ROOF SHINGLE AND DS.19 SHINGLE

With each left-hand upstand of the roof shingle and DS.19 shingle, the folds running diagonally downwards are to be notched in order to avoid any capillary action.



- Mark the upstand area and 30 mm fold allowance and cut at the fold allowance (Image 1).
- Make rebate notches (Image 2 + 3).
- Cover notched roof shingle or DS.19 shingle and edge up (Image 4 + 5).

Only a professional installation guarantees a rainproof roof.

## 2.5 SPECIAL FEATURE OF 29×29 AND 44×44 RHOMBOID ROOF TILE

### 2.5.1 Apron flashing

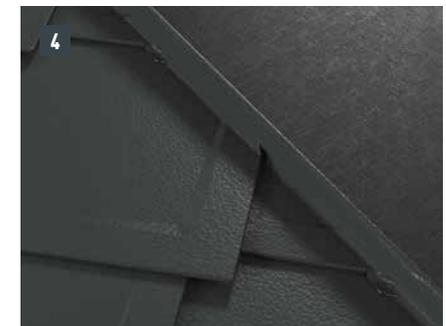
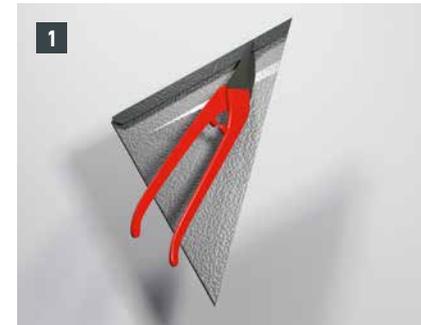
In preparation of the front part of the roof window surrounding, end plates are to be installed for 29 × 29 or 44 × 44 rhomboid roof tiles. These enable a horizontal hook-on seam for rainproof integration of the edging.



Figure 108 • Roof window surroundings - Special feature of 29×29 and 44×44 rhomboid roof tile

### 2.5.2 Abutment details

With each lateral upstand of the 29 × 29 and 44 × 44 rhomboid roof tiles, the folds running diagonally downwards are to be cut out and bent up on the underside.



- Cut 29 × 29 or 44 × 44 rhomboid roof tile at the fold allowance and make the rebate notch (Image 1).
- Bend open the fold and cut round (Image 2).
- Cover and raise notched 29 × 29 or 44 × 44 rhomboid roof tile (Image 3 + 4).

Only a professional installation guarantees a rainproof roof.

## 2.5.3 Back flashing part

In order to achieve a horizontal single lock welt for rainproof integration of the surrounding flashings behind the roof hatch, end plates must be installed for 29 × 29 or 44 × 44 rhomboid roof tiles.

Now starting plates for 29 × 29 or 44 × 44 rhomboid roof tiles can be mounted above the back flashing, and the installation of the roof surface can be continued.



Figure 109 • Roof window surroundings - Special feature of 29×29 and 44×44 rhomboid roof tile

## 3 ROOF HATCH



Figure 110 • Roof hatch

In order to allow for connection to the sub-roof or separation layer, the edging of the roof hatch is not pre-assembled on the wooden frame.

### NOTE

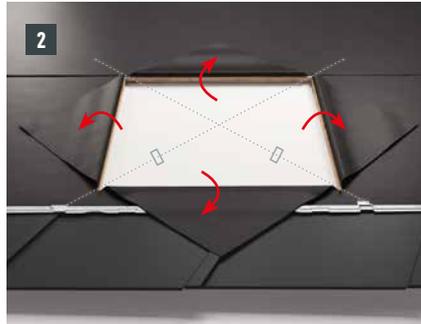
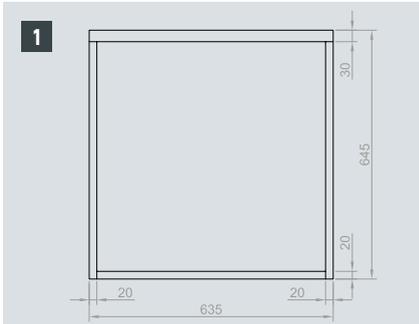
Minimum roof pitch for roof hatches: 12°, the minimum roof pitch of the respective PREFA roof covering must be observed.

**CAUTION: The roof hatch is only suitable for cold attics (uninsulated rooms and attics).**

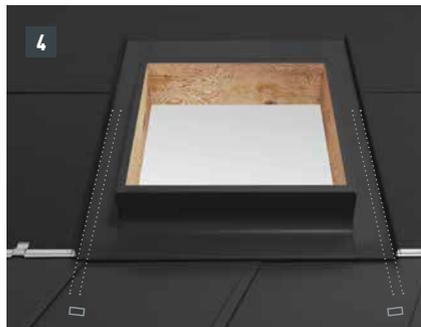
## 3.1 INSTALLATION

Install roof covering up to the desired position of the roof hatch.

**CAUTION: Observe rafter layout.**



- Due to the higher stress (snow pressure) on the wooden frame, care must be taken to ensure that it is mounted with the rear wall (30 mm) lying on top (Image 1).
- Place wooden frame at a distance - from the front edge of the roofing seam to the front edge of the wooden frame - of 85 mm, mark and cut out the outer dimensions of the wooden frame. Open separation layer. Connect wooden frame with the wooden formwork or battens (Image 2).  
**CAUTION:** With thicker foils and formwork over 24 mm, take the finished frame height into account.

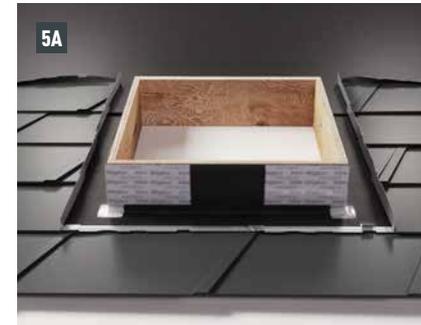


- The wooden frame is to be fixed with 4 screws. The screws in the lower area must be loosened after installing the edging in order to be able to set

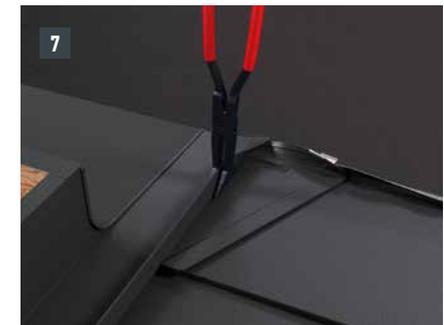
up the wooden frame. Then fasten the screws again (Image 3).

**NOTE:** Glue the separation layer/sub-roof to the wooden frame according to ÖNORM B4119. Adhesive strips not included in delivery.

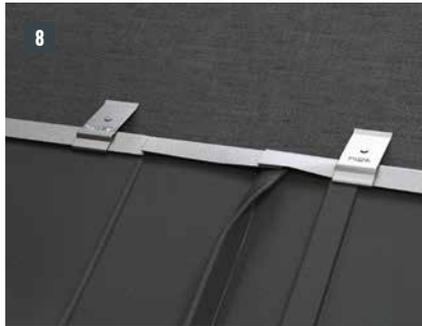
- Draw in the 30 mm cutting and bending edge for the erected roof covering (Image 4).



- Open the upper panel fold of the PREFA roof covering and raise the roof covering 30 mm up to the 90° mark (Image 5A + 5B).



- Place the roof hatch edging in the 30 mm of the raised roof covering, hang in the front part and close. For additional fastening, a return clip must be installed for each standing seam (Image 6).
- Fold the side standing seam at the upper end of the neck part outwards (Image 7).



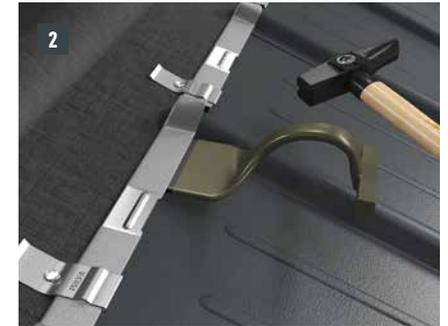
- Trim the neck part of the roof hatch along the course of the PREFA roof covering, fold over and fasten with clips (Image 8).



- Position the cover on the frame and fasten with the supplied screws (6.3 × 22) in the pre-drilled holes (Image 9).
- With the lid closed, mark the position of the locking bracket and fasten with the screws provided.

## 3.2 SPECIAL FEATURE OF ROOF TILES

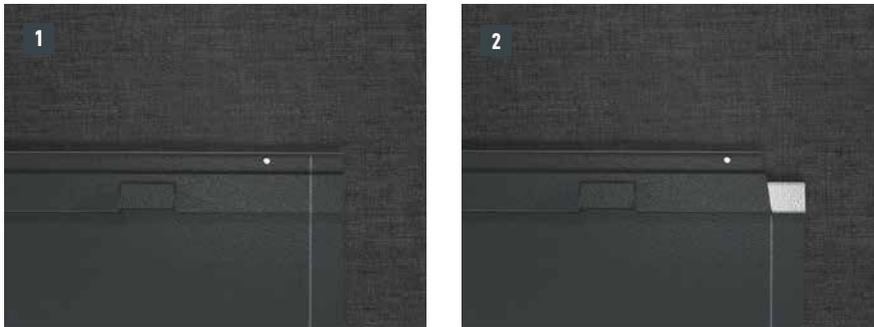
After installing the roof tile in the desired position in the roof hatch, the top plate fold is to be aligned in such a way that it is possible to hang the front part of the roof hatch.



- Cut the cover of the bead high point and lift the fold with theseaming iron (Image 1 + 2).
- Use the hammer to flatten the bead to allow a continuous seam. It is not necessary to cut into the panel joint (Image 3).
- Now the apron flashing can be hooked in without any problems (Image 4).

## 3.3 SPECIFICS WITH R.16 ROOF TILE AND FX.12 ROOF PANEL

### 3.3.1 Abutment details



Notch the upper patent fold in the area of the raised edge so that a hook fold remains and bend the R.16 roof tile or the FX.12 roof panel upwards 30 mm at a right angle to the roof surface (Image 1 + 2).

### 3.3.2 Back flashing part



- When preparing the back flashing notch the top fold of the panels for about 200 mm (Image 3).
- Open upper fold of the PREFA roof covering and set up the roof covering to the side of the marking (Image 4).

## 3.4 SPECIAL FEATURE OF ROOF SHINGLE AND DS.19 SHINGLE

With each left-hand upstand of the roof shingle and DS.19 shingle, the folds running diagonally downwards are to be notched in order to avoid any capillary action.



- Mark the upstand area and 30 mm fold allowance and cut at the fold allowance (Image 1).
- Make rebate notches (Image 2 + 3).
- Cover notched roof shingle or DS.19 shingle and edge up (Image 4 + 5).

Only a professional installation guarantees a rainproof roof.

## 3.5 SPECIAL FEATURE OF 29×29 AND 44×44 RHOMBOID ROOF TILE

### 3.5.1 Apron flashing

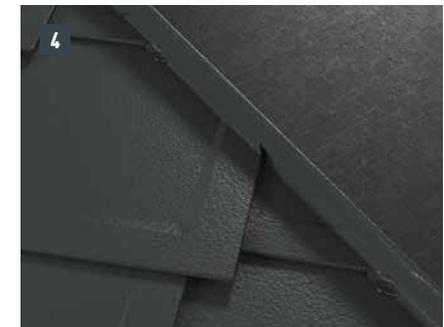
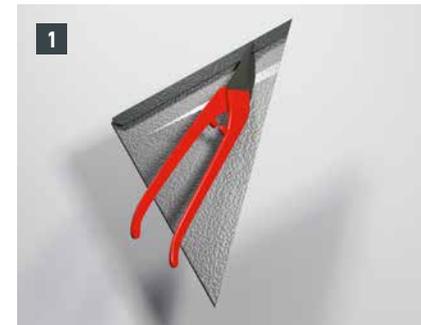
In preparation of the front part of the roof hatch, end plates are to be installed for 29 × 29 or 44 × 44 rhomboid roof tiles. These enable a horizontal hook-on seam for rainproof integration of the edging.



Figure 111 • Roof hatch - Special feature of 29×29 and 44×44 rhomboid roof tile

### 3.5.2 Abutment details

With each lateral upstand of the 29 × 29 and 44 × 44 rhomboid roof tiles, the folds running diagonally downwards are to be cut out and bent up on the underside.



- Cut 29 × 29 or 44 × 44 rhomboid roof tile at the fold allowance and make the rebate notch (Image 1).
- Bend open the fold and cut round (Image 2).
- Cover and raise notched 29 × 29 or 44 × 44 rhomboid roof tile (Image 3 + 4).

Only a professional installation guarantees a rainproof roof.

### 3.5.3 Back flashing part

In order to achieve a horizontal single lock welt for rainproof integration of the surrounding flashings behind the roof hatch, end plates must be installed for 29 × 29 or 44 × 44 rhomboid roof tiles.

Now starting plates for 29 × 29 or 44 × 44 rhomboid roof tiles can be mounted above the back flashing, and the installation of the roof surface can be continued.

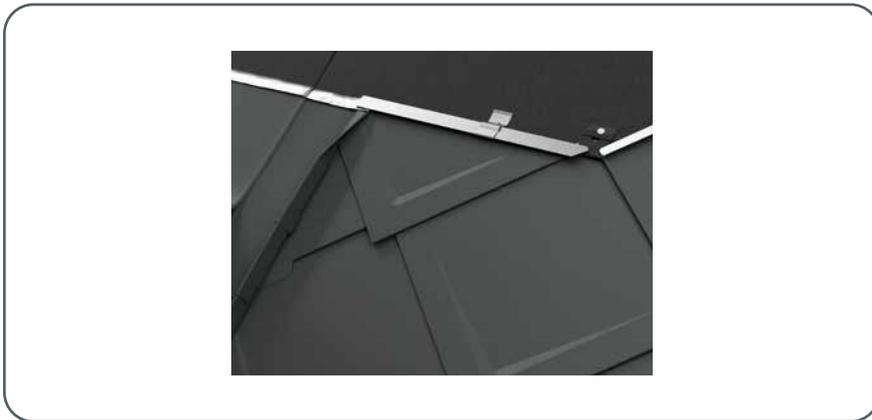


Figure 112 · Roof hatch - Special feature of 29×29 and 44×44 rhomboid roof tile

## 4 VENT PIPE COVER AND VENT PIPE

The base plate for 29 × 29 rhomboid roof tile (1), 44 × 44 rhomboid roof tile (2), R.16 roof tile and FX.12 roof panel (3) and DS.19 shingle (4) have the dimensions of the respective PREFA roof system and can be simply incorporated into the cover.

### NOTE

Pay attention to the correct positioning of the pipe penetration through the substructure.



Figure 113 · Base plates

The **base plate for roof tiles** is in the form of a half plate with a conical edging socket welded onto it.



Figure 114 • Base plate for roof tiles

## 4.1 INSTALLATION OF BASE PLATE



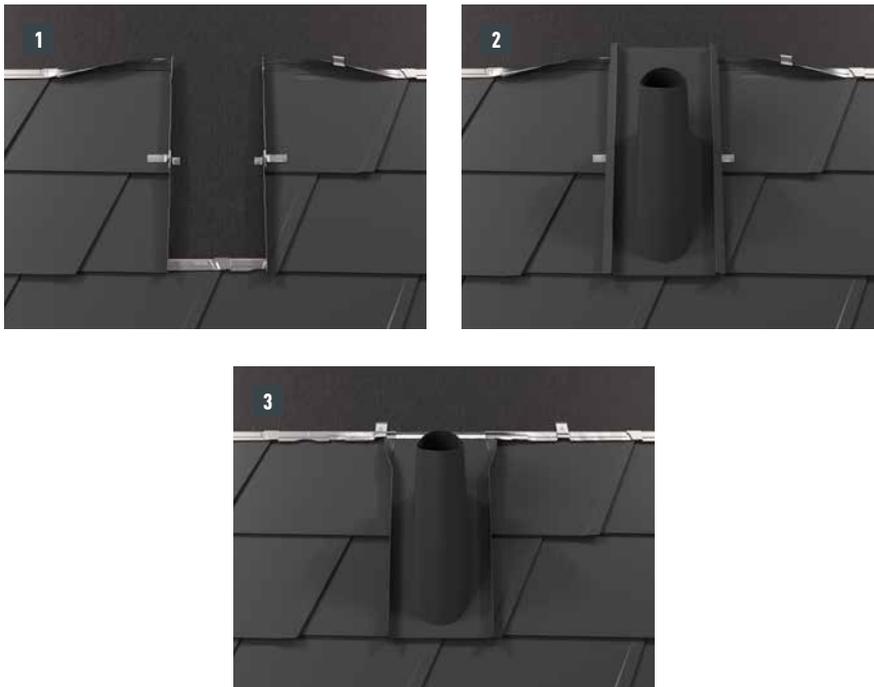
Figure 115 • Baseplate and ventilation pipe - Installation

- Set up base plate.
- Mark the pipe diameter and cut out the formwork.
- Mark the pipe diameter on the base plate, trim the plate and then mount it (cover).
- Mount enclosed cover rosette and EPDM seal on the ventilation pipe.
- Then push the EPDM seal down over the edging so that the transition between the edging and the ventilation pipe is sealed.
- Fix the cover rosette on the pipe.

## 4.2 INSTALLATION OF THE BASEPLATE FOR FOLDING IN

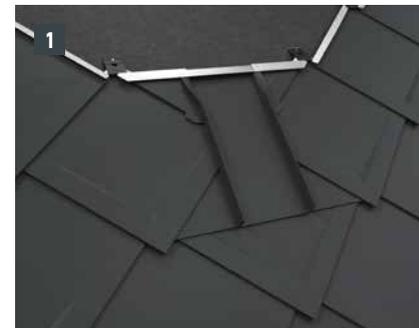
If the position of the penetration is specified and, due to this, the base plate cannot be used, pipe penetrations can be implemented using an base plate for folding in. Edging plates are suitable for pipe penetrations from  $\varnothing$  80–125 mm.

Depending on the roof system, the base plate extends over 1 to 2 rows and can be mounted at any point on the side.



- Raise the PREFA roof covering by 30 mm on both sides of the border (Image 1).
- Put on the base plate and close the folds and return clips on both sides (Image 2).
- Fold both standing seams outwards at the upper end, trim along the course of the PREFA roof covering, fold over and fasten with clips (Image 3).

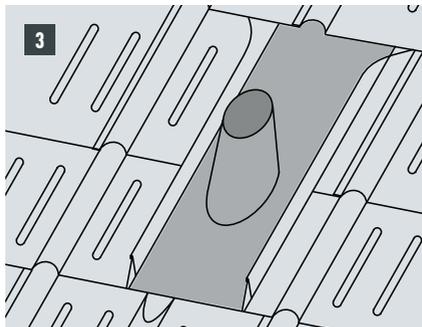
### 4.2.1 Special feature of rhomboid roof panels



For the installation of an base plate, start and end plates must be laid with  $29 \times 29$  or  $44 \times 44$  rhomboid roof plates.

These enable a horizontal hook-on seam for rainproof integration of the edging plate.

## 4.3 SEAMING IN A PENETRATION



As an alternative to base plate for welting in, a trim can also be folded into in a base plate and this can be covered in the roof covering. Connection to the roof covering is done with standing seams, analogous to the edging plate for folding (Image 1 + 2).

## 4.4 UNIVERSAL EDGING (2-PIECE)



Figure 116 · Universal vent pipe cover (2-piece) in covered area

If it is not possible to slide the base plate open due to the shape and circumstances of the penetration (e.g. satellite dish or antenna), two-piece universal edging can be used. Integration in the roof covering is done with standing seams, analogous to the edging for folding.

## 5 FROG MOUTH HATCH AND SOLAR HATCH

### 5.1 FROG-MOUTH VENT



Figure 117 • Frog-mouth vent

In principle, continuous ventilation openings are to be preferred. If this is not possible in relation to the project, selective exhaust air openings (frog mouth hatches) can be used. They are placed in the appropriate number in the last row or covered along the ridges.

Please note that a large number of frog mouth hatches often have to be used in order to achieve the exhaust air cross-sections prescribed by the standards. Pay attention to the smooth or stucco design that matches the PREFA roof covering used. If installed on a fully boarded substrate, the boards must be cut out sufficiently.

Ventilation cross-section of the frog mouth hatches:  $\sim 30 \text{ cm}^2$  formwork and separation layer are to be cut out according to the ventilation cross-section

( $\sim 10 \text{ cm}$  in diameter). The roof covering is to be provided with a 1 cm high flare around the edges of the cut-outs.

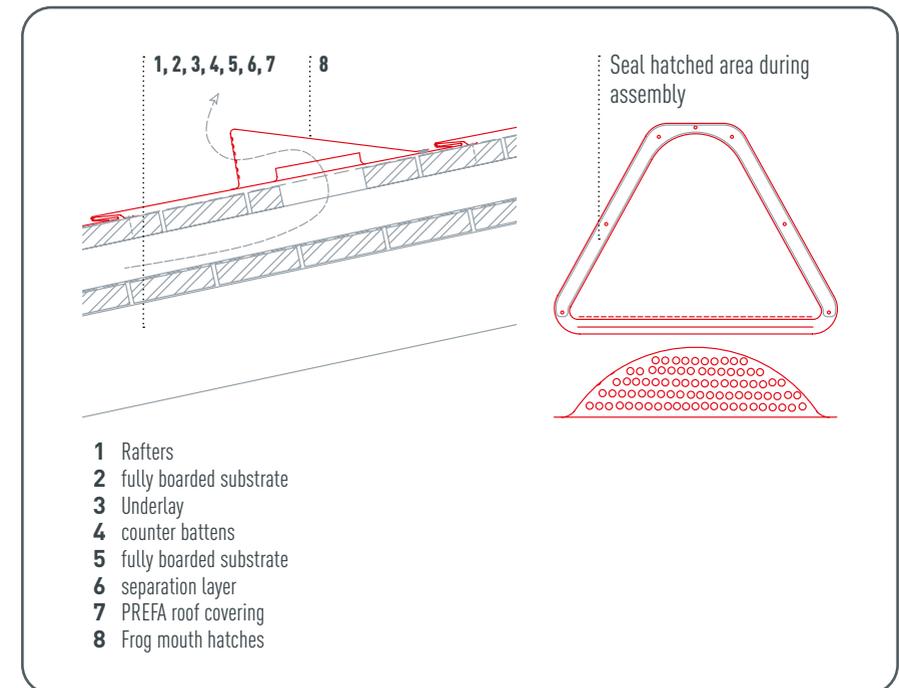


Figure 118 • Frog-mouth vent

## 5.2 SOLAR ROOF CONDUIT

For the installation of pipes and cables, and for penetrations up to 38.5 mm. Pay attention to the integration of the membrane.



Figure 119 • Solar roof conduit

## 5.3 INSTALLATION



- Position the solar hatch and mark using the supplied template (Image 1).
- Cut out, position tabs and provide roof covering with a flare of approx. 10 mm (Image 2).



- Drill an hole with  $\text{Ø } 35 \text{ mm}$  in the middle, stick on the pipe collar and guide through the corrugated pipe (Image 3).
- Sand and clean the bonding surfaces (see instructions for PREFA special adhesive) (Image 4).

## 6 BASE PLATE

A base plate can form the basis for the installation of snow rake systems, single steps, roof safety hooks or other accessory products, e.g. if there is a rebate or crest in the area of the rafters. Do not place the respective accessory product on the fold or crest of the PREFA roof covering.



- Cut the corrugated pipe penetration crosswise, apply PREFA special adhesive all around it and put on the solar hatch (Image 5).
- Press on the solar hatch and close the tabs (Image 6).

### NOTE

With all PREFA roof systems, it may be necessary to fit a base plate (e.g. if there is a rebate or crest in the installation area). Do not place and fasten solar hatch on the fold or crest of the PREFA roof covering.

### TIP

Rubber parts that are subject to movement should be treated with the talc provided to improve sliding properties. To make it easier to put on the solar hatch, we recommend bending the corrugated pipe 90° in the direction of the eaves. Incl. grommets (1 × Ø 32–35 mm and 2 × Ø 10 mm).

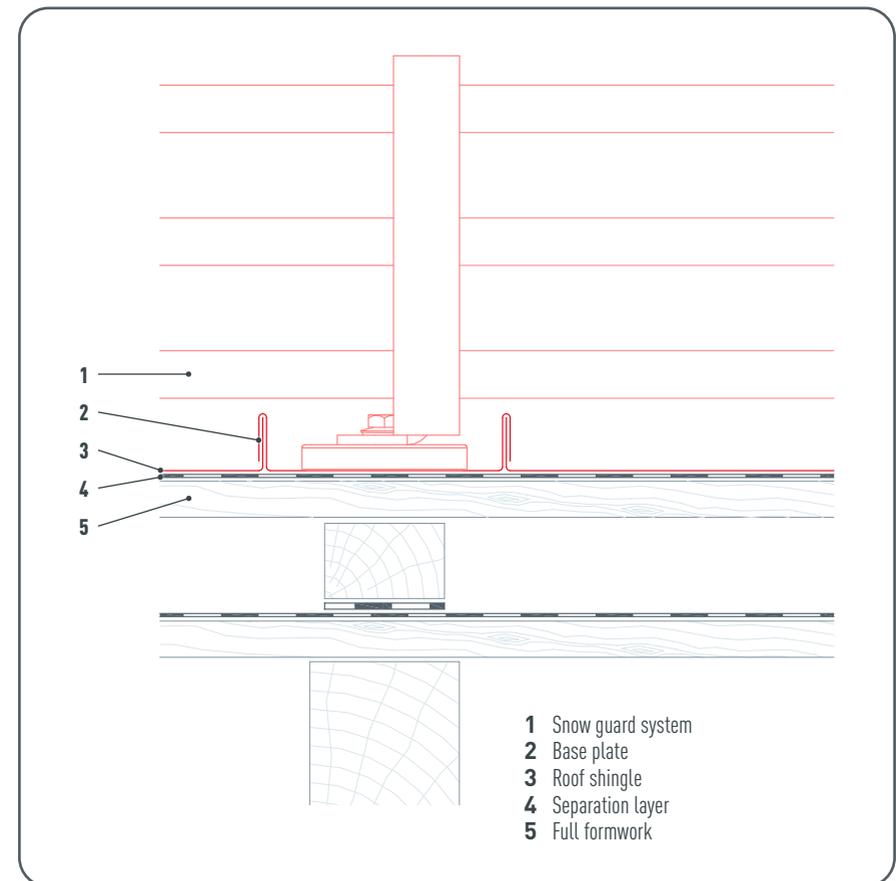
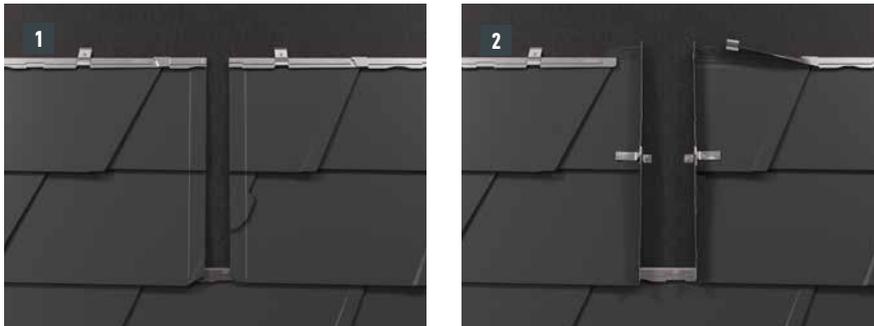
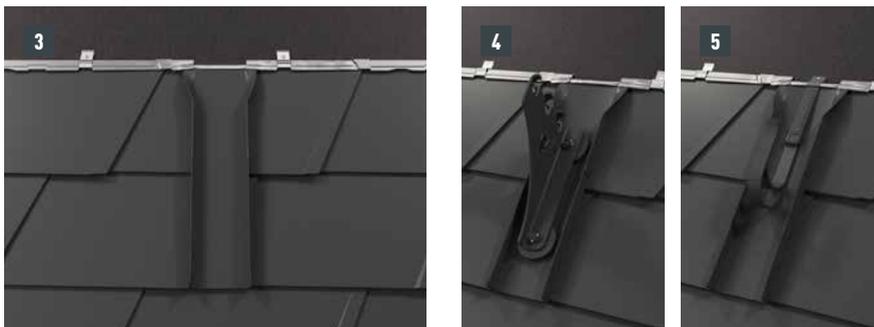


Figure 120 • Base plate

## 6.1 INSTALLATION



- Depending on the roofing product, the base plate extends over one or more rows of PREFA roof covering and can be mounted anywhere (Image 1).
- Raise the PREFA roof covering 30 mm on both sides according to the width of the base plate. If required, a return clip can be mounted for additional attachment (Image 2).



- Lay the base plate in the raised 30 mm of the PREFA roof covering and close the folds and return clips on both sides. Lay the lateral standing seam outwards at the upper end and fold over and fasten along the course of the PREFA roof covering with clips (Image 3).
- The respective accessory product can be fastened onto the base plate (Image 4 + 5).

### 6.1.1 Special feature of roof tiles

After installing the roof tile in the desired position in the base plate, the top plate fold is to be aligned in such a way that it is possible to hang the base plate.



- Cut the cover of the bead high point and lift the fold with theseaming iron (Image 1 + 2).
- Use the hammer to flatten the bead to allow a continuous seam. It is not necessary to cut into the panel joint (Image 3).
- Now the base plate can be hooked in without any problems (Image 4).

## 6.1.2 Specifics with R.16 roof tile and FX.12 roof panel

### 6.1.2.1 Abutment details



Notch the upper patent fold in the area of the raised edge so that a hook fold remains and bend the R.16 roof tile or the FX.12 roof panel upwards 30 mm at a right angle to the roof surface (Image 1 + 2).

### 6.1.2.2 Back flashing part



- When preparing the back flashing notch the top fold of the panels for about 200 mm (Image 3).
- Open upper fold of the PREFA roof covering and set up the roof covering to the side of the marking (Image 4).

## 6.1.3 Special feature of roof shingle and DS.19 shingle

With each left-hand upstand of the roof shingle and DS.19 shingle, the folds running diagonally downwards are to be notched in order to avoid any capillary action.



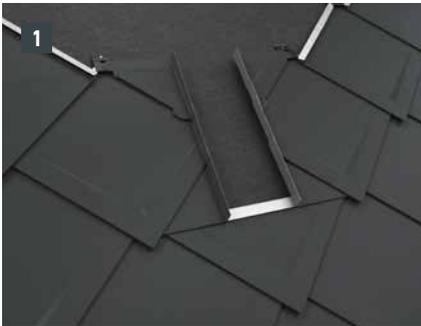
- Mark the upstand area and 30 mm fold allowance and cut at the fold allowance (Image 1).
- Make rebate notches (Image 2 + 3).
- Cover notched roof shingle or DS.19 shingle and edge up (Image 4 + 5).

Only a professional installation guarantees a rainproof roof.

## 6.1.4 Special feature of 29×29 and 44×44 rhomboid roof tile

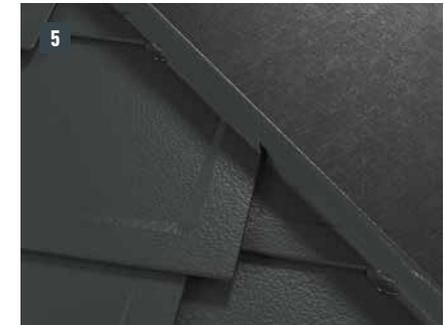
### 6.1.4.1 Apron flashing

For the installation of a base plate, start and end plates must be laid with 29 × 29 or 44 × 44 rhomboid roof plates. These enable a horizontal hook-on seam for rainproof integration of the edging.



### 6.1.4.2 Abutment details

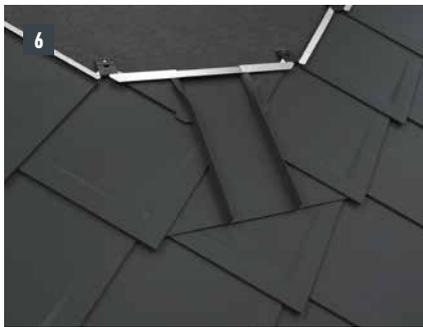
With each lateral upstand of the 29 × 29 and 44 × 44 rhomboid roof tiles, the folds running diagonally downwards are to be cut out and bent up on the underside.



- Cut 29 × 29 or 44 × 44 rhomboid roof tile at the fold allowance and make the rebate notch (Image 2).
- Bend open the fold and cut round (Image 3).
- Cover and raise notched 29 × 29 or 44 × 44 rhomboid roof tile (Image 4 + 5).

Only a professional installation guarantees a rainproof roof.

## 6.1.4.3 Back flashing part



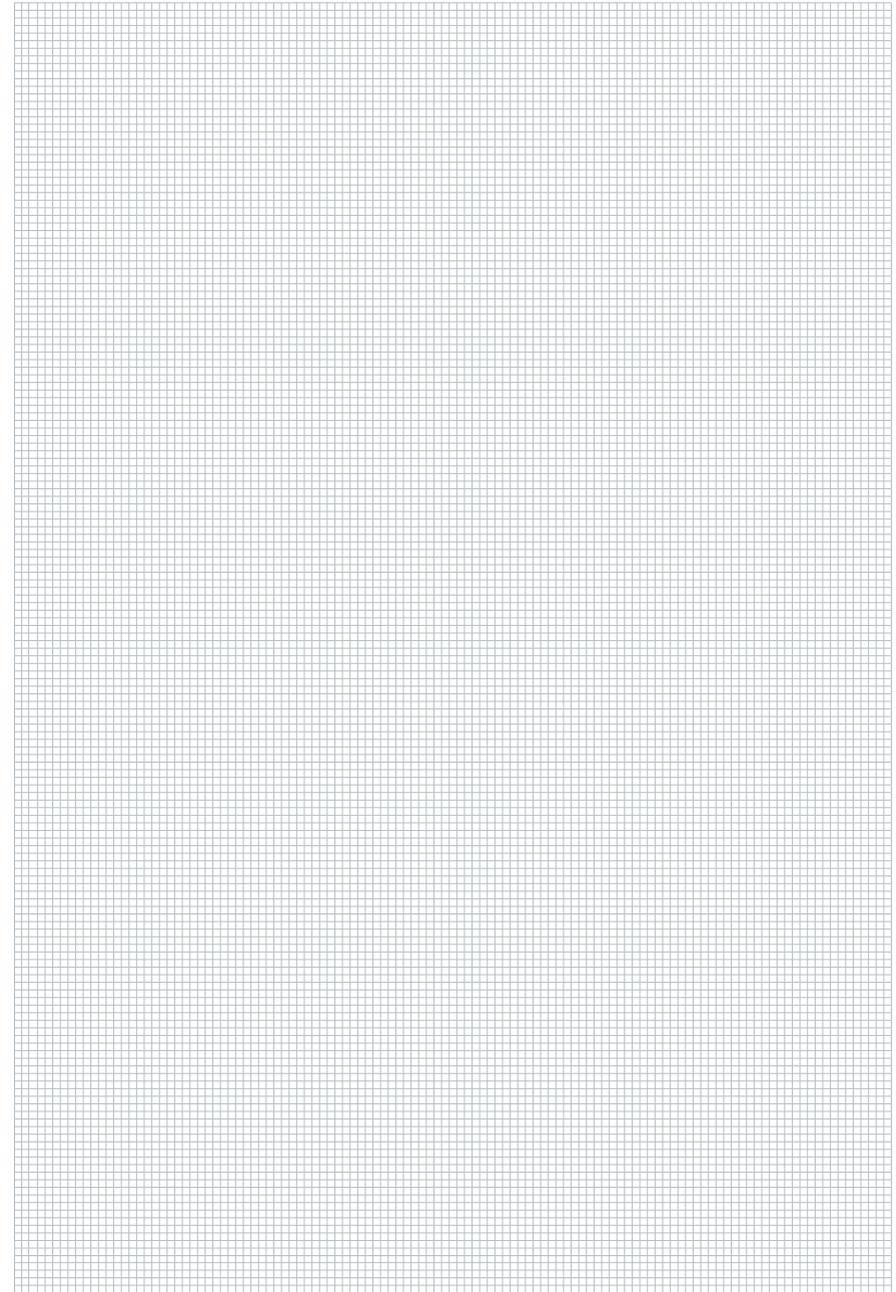
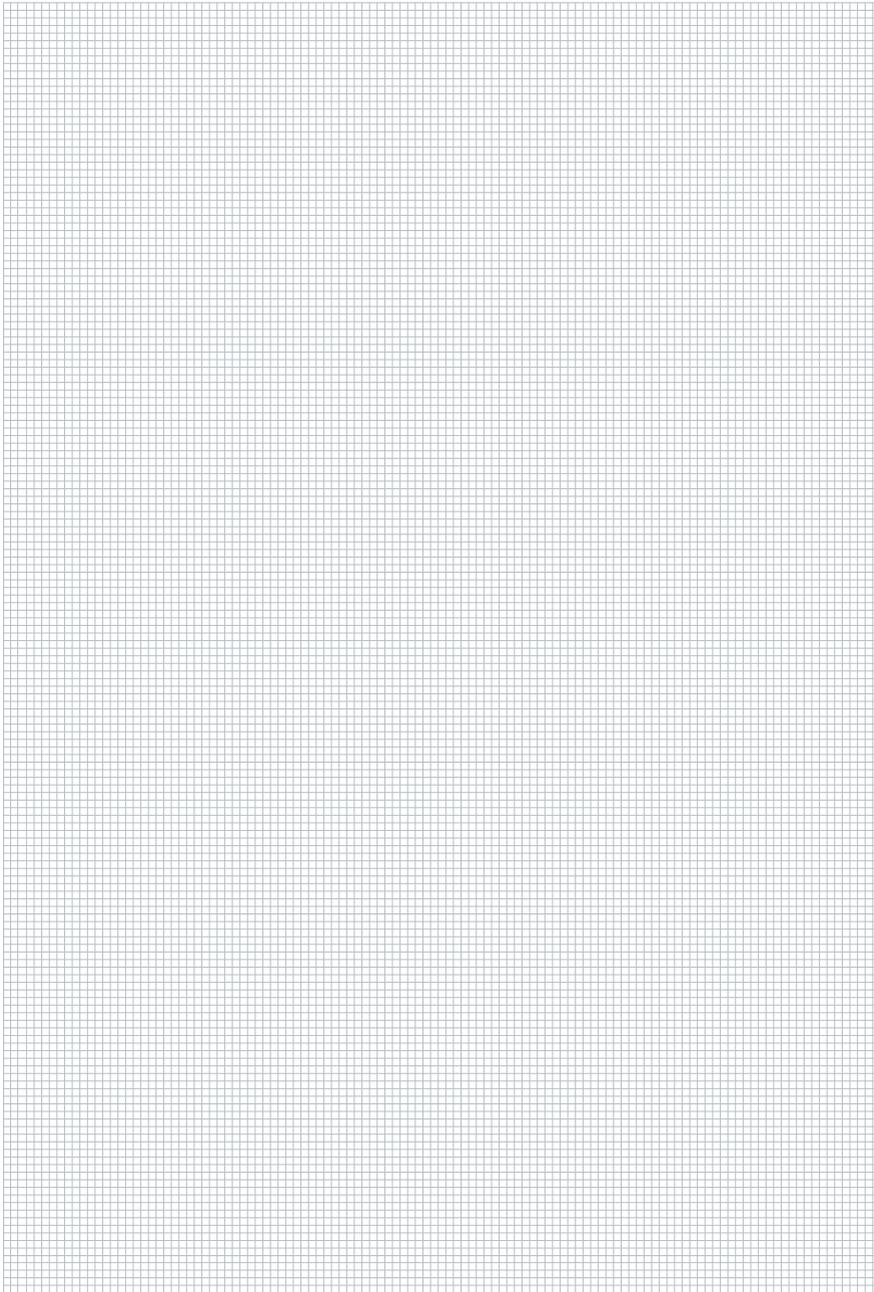
- In order to achieve a horizontal hook-on seam for rainproof integration of the frame above the base plate, end plates must be laid for  $29 \times 29$  or  $44 \times 44$  rhomboid roof tiles (Image 6).
- Now starting plates for  $29 \times 29$  or  $44 \times 44$  rhomboid roof tiles can be mounted above the frame, and the covering of the roof surface can be continued (Image 7).

## PREFA GROOVE BEADING MACHINE AND BENDING BENCH

The PREFA groove beading machine and the PREFA bending bench allow the panels to be processed easily and quickly on ridge, hip and connection flashings.

The machines are ideally suited for use on construction sites and are easy to handle.







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\* Information about the material and colour guarantee can be found at [uk.prefa.com/guarantee](http://uk.prefa.com/guarantee).