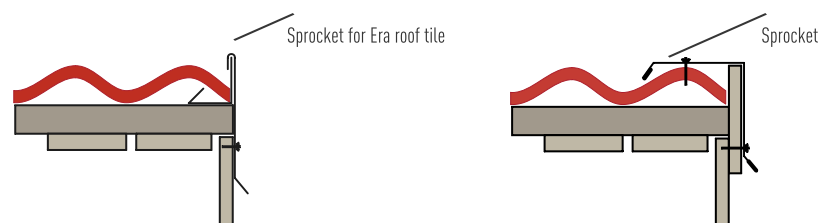


"Teardrop" snow protecting screens

In the areas with heavy snowfalls as well as in the places where there are sidewalks under the roofs, it is obligatory to assemble the snow protecting screens, which can be purchased at Bratex Dachy. Apart from protecting people and property from sliding snow masses, they also protect the gutter from rupture or damage. The snow protecting screens are usually assembled alternately in two rows. 4-5 pieces are used for 1 running meter of a roof. The screens are assembled at the location of battens with 4.8x35 mm screws. These places should be protected with specialist roofing sealant (Soudal products are recommended), since between the screen and sheet there is a connection not protected from leaking. The height of the first row of covers should be about one meter from eaves

Sprocket assembly



Final remarks

After finishing the roof works, the roof should be cleared of any chippings and metal remnants. Leaving the metal elements may cause corrosion in those places. A soft brush which does not scratch the surface is best for that purpose. It is advised to walk on the bottom parts of the waves in shoes with soft soles.

In place of cuts and scratches the sheet must be degreased and protected with mortar paint. Spray paints should not be used.

Conservation

In typical conditions the roof covering should be checked at least once a year. All moisture-binding contaminations such as dirt, leaves, etc. should be removed. All damage should be protected with mortar paint. Rules for correct operation are available on the www.bratex.pl website.



ASSEMBLY INSTRUCTIONS FOR ROOF TILES AND TRAPEZOIDAL SHEETS

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brateX
ROOFING SYSTEMS

Assembly instructions for roof tiles and trapezoidal sheets

We recommend that you familiarize yourself with the current version of the installation manual for sheet metal roofing tiles and trapezoidal sheets available at www.bratex.pl.

Preparations

Checking the roof structure parameters

Roof geometry should be checked by measuring its diagonals. If they are not equal, it means that the roof is warped. In such case minor differences (20-30 mm) can be leveled with bargeboard and sprockets. Bigger differences need to be leveled before battening. Roof slope should have a minimum incline of 12° for steel sheets and 8° for trapezoidal sheets. It can be verified by measuring the segment B, which should have respectively at least 1/5 or 1/7 of the length of the segment A.

Required tools

Prior to roofing works, please make sure you have the necessary equipment: measure, handsaw, snips, nibler, driver with variable speed, hammer, safety rope with a harness, suitable footwear with rubber soles.

Roof battening and roofing membrane assembly

In case of residential attics the moisture permeability membrane should be used. Its aim is to provide the proper air circulation and drain the condensed water vapor into the gutter. Proper assembly of the roofing membranes guarantee lack of moisture in the attic.

Moisture permeability membranes are not resistant to UV rays and chemicals like chainsaw oil. They usually can lay uncovered on the roof for several months. Depending on the producer and type of the membrane this period is no longer than 4 months since laying the sheet metal on the roof!

Membrane assembly

The membranes are applied in horizontal stripes with 10 cm overlap or with observance of the manufacturer's markings. We start from the bottom of the roof slope. The membrane is attached to the rafters with counter-battens of following dimensions: 19x40 mm or 20x60 mm. The battens are nailed on the counter-battens at the distance dependent on the sheet embossing.

Batten assembly

The Bratex Dachy company recommends sheet metal assembly with the use of a gutter drip. This way the necessity of releasing the sheet beyond the eaves is eliminated and the roof coverage sealing is increased. Distance between battens depends on the length of the roof tiles module. First batten is attached at the roof bottom. The second in a distance of 420 mm for 400 mm roof tile modules or in a distance of 370 mm for 350 mm roof tile modules. Remaining battens are assembled in distances equal to the purchased roof tile module length. The way of determining the distance is shown in the picture.

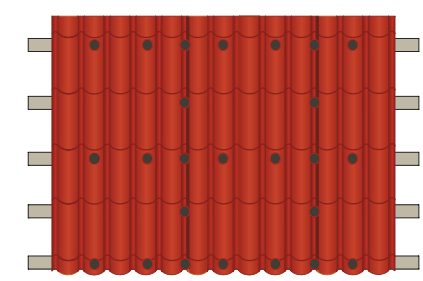
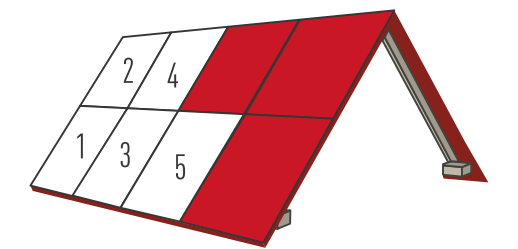
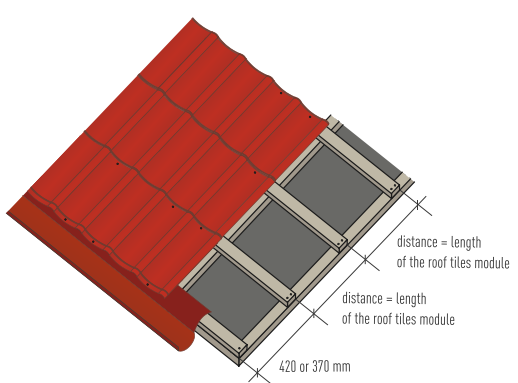
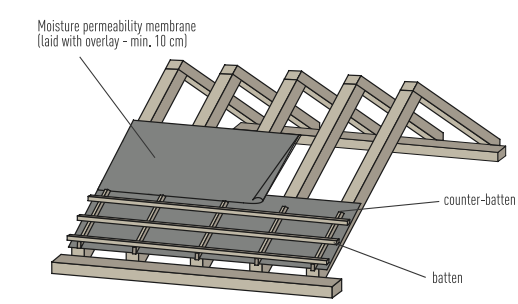
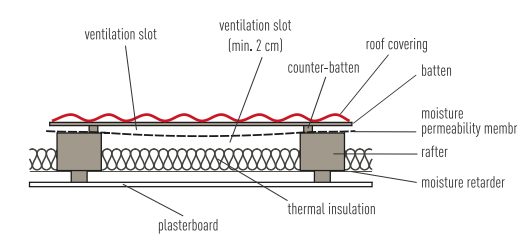
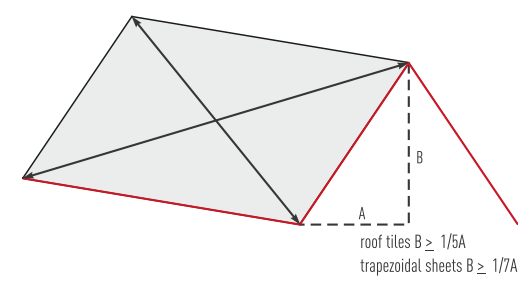
The lengths of the modules may differ due to client's preferences at the moment of ordering the product. In case of trapezoidal sheets assembly, the batten assembly depends on the profile's height, roof inclination and climate. Distance between battens for trapezoidal sheets is 40 cm. Wood on the roof should be impregnated with the exception of battens, in which impregnating agent may cause damage to the paint and corrosion of metal! Standard dimensions of battens are 50 x 35 mm or bigger if the distance between rafters is longer than 1 m.

The sheet must not be laid directly on the roof felt - it is absolutely necessary to cover the roof with membrane and make the batten and counter-batten construction.

Sheet assembly

Prior to works, the roof geometry should be checked (as described above). The assembly starts with left bottom sheet. It is very important to lay the first sheet at a proper angle to the eaves. Any twist is difficult to correct, since the sheets length and width are profiled. Any mistake at this stage will escalate with laying the next sheets. The rule is to assembly the next sheets parallel to the eaves. Next sheets should be laid from left to right according to the attached drawing. In this solution after assembling the first sheet (without screwing the wave overlaying the next sheet) the next one is slid under it with water groove. The advantage of this method is locking the sheets, which prevents them from sliding. Assembly from right to left is also possible. The choice of method depends on the roofer and his experience.

For the roof windows and chimneys there should be considered a sufficient reserve of a length of one module in the case of roof tiles, or 15 cm in case of trapezoidal sheets. Sheets in such cases are cut in width in order to fit them to the chimney flashing or the roof window flange.



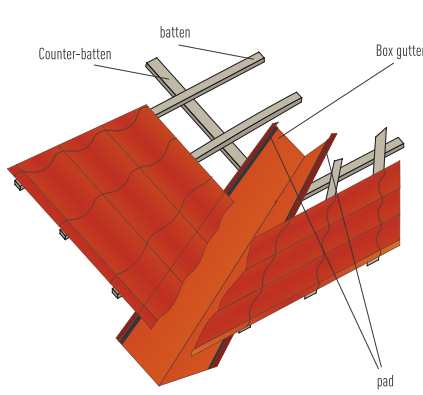
Screws distribution

The sheets are attached to the battens with screws (4,8x35 mm) with EPDM rubber pad. A pad made from this material does not deteriorate like standard rubber, but is permanently vulcanized to the sheet. Moreover, it is resistant to atmospheric conditions and sun rays. The screws should be distributed according to the drawing.

The screws are mounted at the bottom part of every second wave and at the bottom of every second row of tiles. At the side overlapping edge the screws should be mounted at the bottom of each row of tiles.

The screws should be tightened with driver with variable speed in such a way that the pad slightly goes beyond the metal pads. Average consumption of screws depends on the shape of the roof and the amount of flashings and amounts to 6-9 pieces per square meter.

The sheet metal must not be cut with abrasive tools (e.g. angle grinders), since the sudden rise of temperature damages the organic and zinc coats in the cut area. Additionally, the heated chippings damage the varnish on a significant area of the sheet.



Flashings and roof accessories assembly

Box gutter

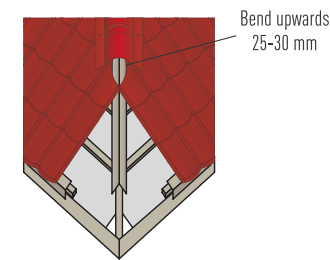
Underlay for box gutter should be made from boards or chipboard of at least 17 mm thick. Longer sized gutter should be mounted with clamps nailed to the base at a distance of 500 mm from each other. Box gutter is screwed to the sheet metal in the bottom of each wave. Pads between the sheet metal and box gutter are recommended.

Ridge tile - ridge flashing

Ridge tiles should be mounted in every second top of the sheet. Prior to that, the sprocket and pad (or ventilated ridge tape - recommended) should be fitted. The assembly is done with 4.8x20 mm screws.

When assembling the ridge tile roof, the basics are the same as for the gable roof. The only exception is the necessity of bending the sheets upward at about 25-30 mm.

When assembling the pads one needs to remember about proper roof ventilation - there is no such need when ventilated ridge tapes are used.



Gutter flashing

Gutter flashing directs water to the gutter and prevents from its getting below the roof covering. Moreover, it drains the condensed water vapor from the surface of the roof membrane to the gutter. The belt should slide by about 3 cm below the gutter.

