

PANORAMA 1.0

STEEL ROOFING SHEET

INSTALLATION MANUAL



PANORAMA 1.0 STEEL ROOFING SHEET

The PANORAMA 1.0 steel roofing sheet is a new product on the market of roofing products and the only design of this type in Poland. Its unique shape was developed by a team of architects and individuals planning to build a house who dream about an exceptional and elegant roof.

The unique design idea of the PANORAMA 1.0 steel roofing sheet is the specific groove which separates particular tiles. In technical terms, the groove ensures the following:

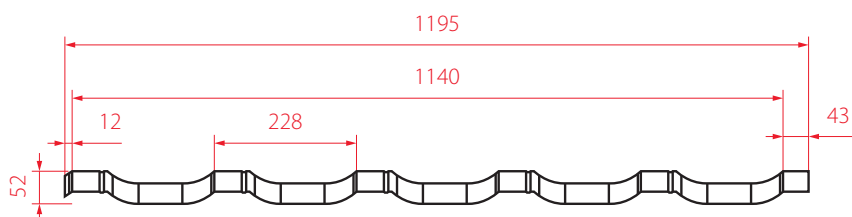
- Easy positioning during assembly (when installing the module roof panels, the groove goes into another groove forming a type of a "quick lock")
- Easier installation and measuring (the modules of the panels are identical)
- Uniform surface of the roof slope, which is visible especially in the sunlight
- Makes the roof more rigid and compensates the stresses caused by thermal expansion

Combining a classic design with innovation resulted in a light but well-defined line of roofing. A well-selected roof adds strength and beauty to every house.

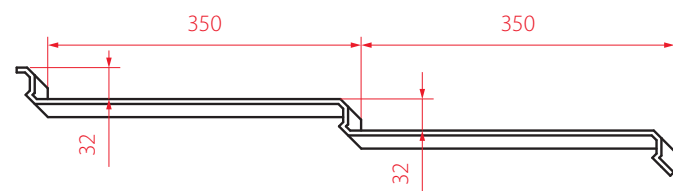
TECHNICAL DATA

Total sheet width [mm]	1195	Tile length [mm]	350
Covering width [mm]	1140	Width between wave tops [mm]	228
Embossment height [mm]	32	Sheet coverage area [m ²]	0,798
Total sheet length [mm]	740	Sheet weight [kg]	3,69
Effective sheet length [mm]	700	Minimum roof inclination	9° (16%)
Technical requirements: PN-EN 14782:2008; PN-EN 508-1:2010			

LONGITUDINAL SECTION



CROSS SECTION



Installation of the PANORAMA 1.0 steel roofing sheet will be shown on a model roof truss. The installation methods specified in this manual are exemplary and their application for various roof types may require modification. In case of any questions, please contact the designer or an expert from Balex Metal. More information at www.dachowkastalowa.eu

SELF MEASUREMENT OF THE ROOF

L - length of the roof plane
W - width of the roof plane

In order to define the quantity of the required sheets of the PANORAMA 1.0 steel roofing modules and boarding, the roof slope has to be measured as in Fig. 1.

1. Determine the length of the roof plane **L** corresponding to the length of the required roof panels and counter-battens.
2. Determine the width of the roof plane **W**. It defines the length of battens and after dividing its value by the width of coverage of a single steel roofing module it also determines the quantity of the required sheets.

The measurements should be performed on the basis of a ready roof truss since usually the measurements of a ready roof structure vary from those in the design.

If possible, we suggest you prepare a roof slope with the width corresponding to the multiplicity of the PANORAMA 1.0 steel roofing modules.

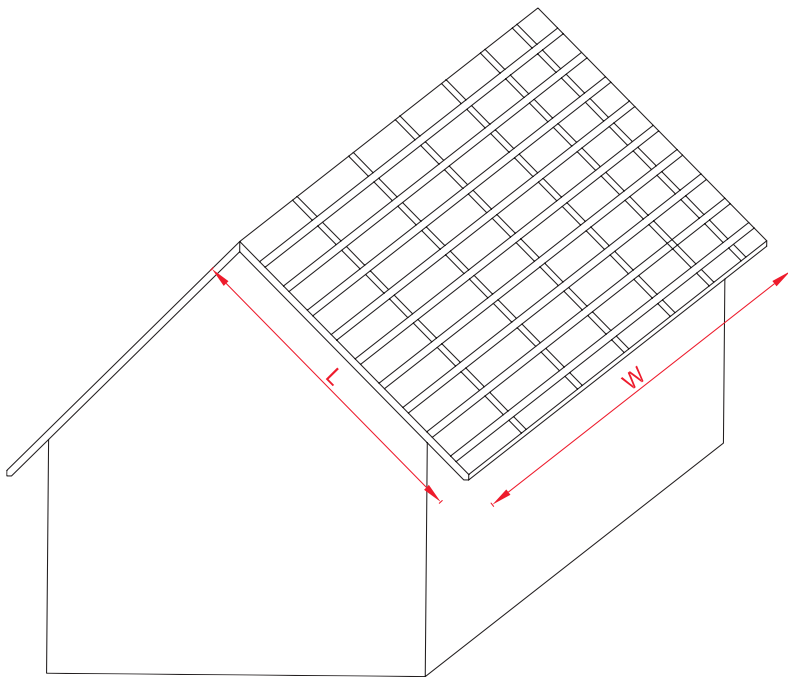


Fig. 1.

ROOF DIAGONAL

Prior to the installation, check the roof geometry (Fig. 2). If the roof slope is rectangular, this should be done by measuring the diagonals which should be equal. Any possible differences should be located on side edges of the roof and the roof ridge since it is possible to cover them with flashings in these areas.

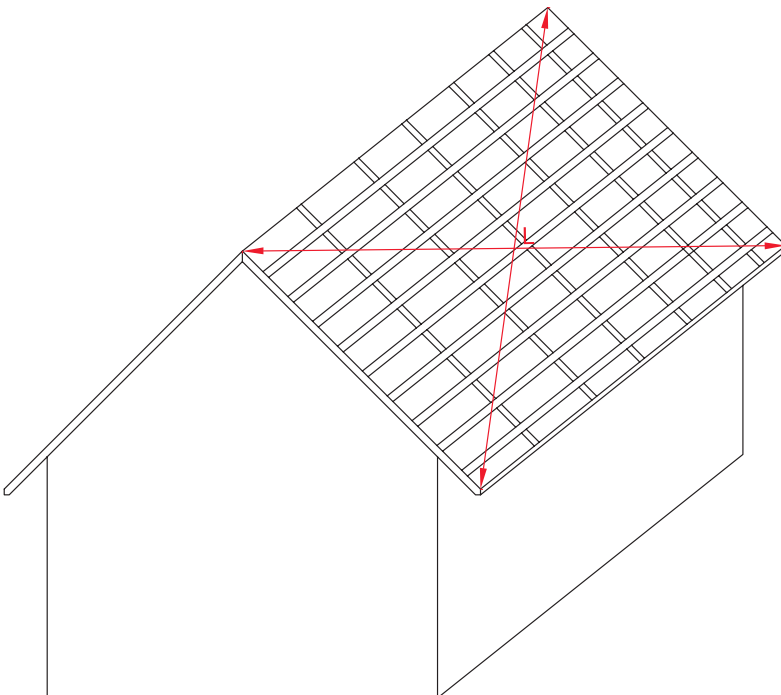
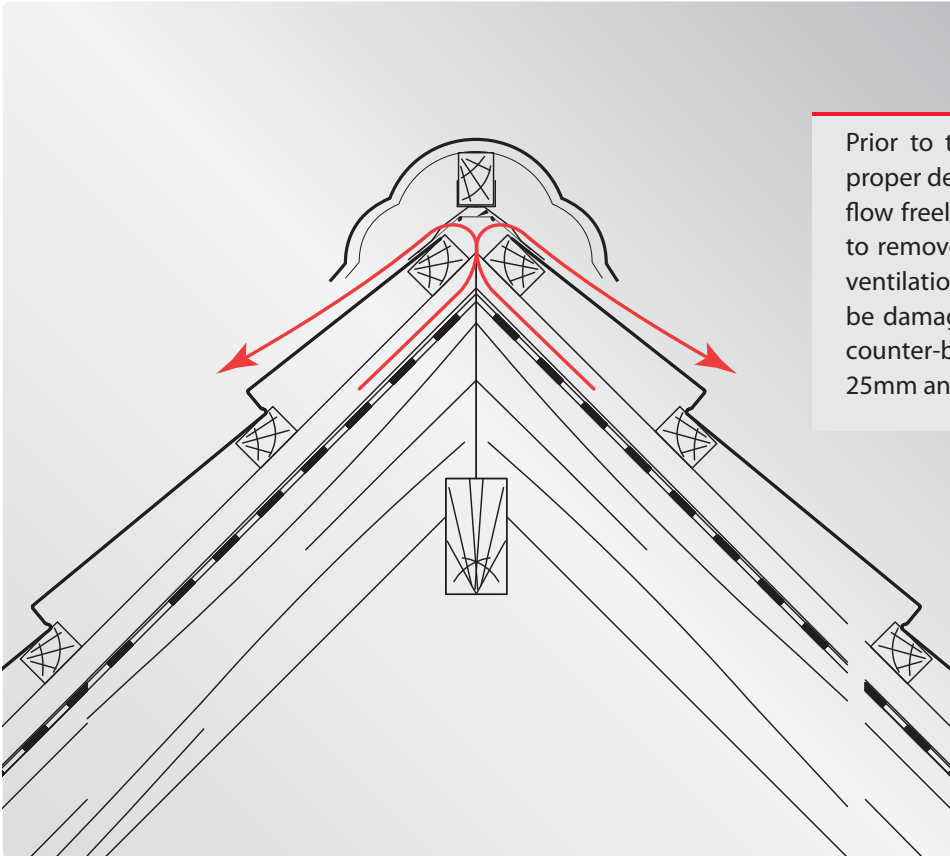


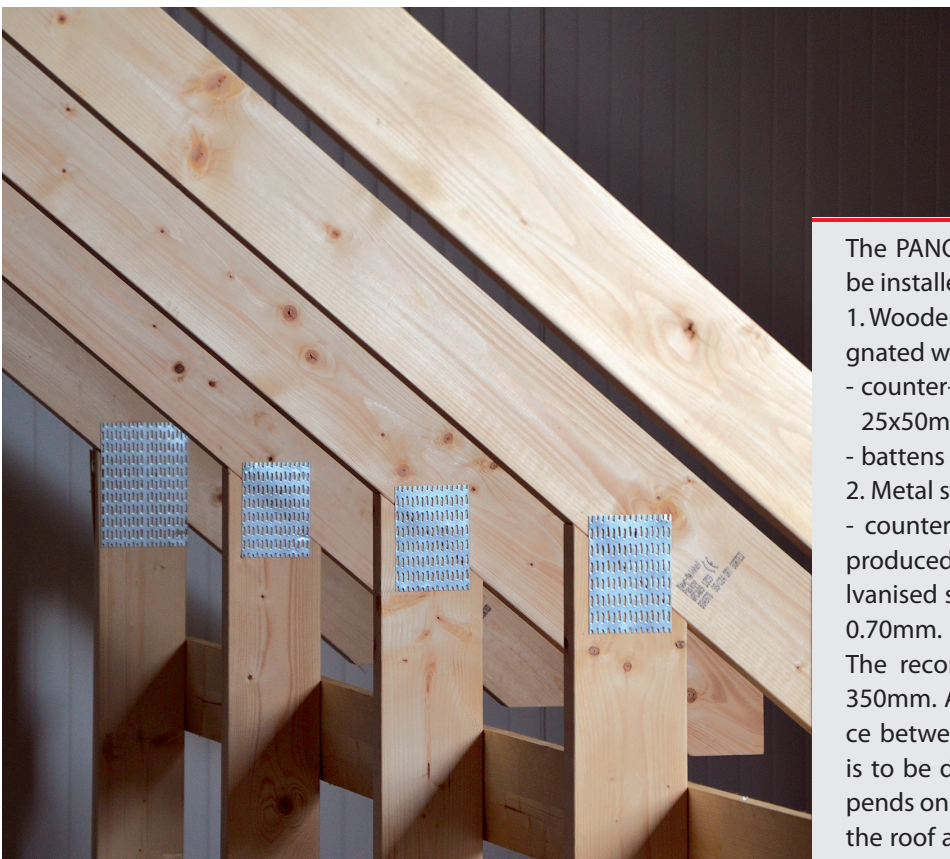
Fig. 2.

ROOF SLOPE VENTILATION



Prior to the installation, pay attention to the proper design of the roof ventilation. Air should flow freely from the eaves to the ridge in order to remove water vapour. In case of insufficient ventilation, the bottom of the steel sheets may be damaged. In view of the above, always use counter-battens with the minimum thickness of 25mm and use roof vents, e.g. R-WENT.

SUPPORTING GRID OF THE PANORAMA 1.0 MODULAR ROOFING SHEETS



The PANORAMA 1.0 modular roofing tiles may be installed on wooden or metal structures.

1. Wooden structure using at least class 2 impregnated wood:

- counter-battens – sample dimensions 25x50mm or 40x60mm

- battens – sample dimensions 40x60mm

2. Metal structure:

- counter-battens and battens are most often produced using C, Z or OMEGA thin-walled galvanised steel profiles with the thickness above 0.70mm.

The recommended spacing of the battens is 350mm. An exception to this rule is the distance between the first and second batten which is to be determined empirically and which depends on the structure of the eaves, the slope of the roof as well as the gutter system. Generally, the spacing between the first and second batten is 290mm (measured from the beginning of the first starting batten to the beginning of the second batten).

VERGE TRIM



Installation of the roofing starts from assembling the eaves flashings. The verge trim is installed straight in the line of the eaves, by fastening it using galvanised rafter nails. If the roof slope length requires the verge trims to be connected, install them with 100mm overlaps. The spacing of the fastenings reflects the spacing of the rafters.

If the battens are made of steel, use a PES noise insulating tape under each verge trim in order to insulate the roof from the noise caused by rain or wind.

INSTALLATION OF THE VAPOUR-PERMEABLE ASPIRA MEMBRANE



The ASPIRA roof membranes are installed in order to ensure proper parameters of moisture insulation.

In place of the valley flashing, the membrane is installed vertically while in the remaining part of the roof it is installed horizontally from the eaves to the ridge. Overlapping between subsequent strips of membrane is required in the areas marked with broken line. Any mechanical damage taking place during the installation, shall be secured with a membrane repair tape.



On the side edges of the roof slope, the membrane is folded over the counter-batten and fastened using staples. Such a finish guarantees tightness.



INSTALLATION OF BATTENS

Installation of battens begins at the eaves by fastening 2 battens (or a plank with appropriate width and thickness) to which gutter hooks and the verge trim will be installed. The subsequent battens are installed according to the shape and dimensions of the roof tiles – the recommended spacing between battens is 350mm. An exception to this rule is the distance between the first and second batten which is to be determined empirically and which depends on the structure of the eaves, the slope of the roof as well as the gutter system. Generally, the spacing between the first and second batten is 290mm (measured from the beginning of the first starting batten to the beginning of the second batten).

INSTALLING GUTTER HOOKS

In order to properly install the gutter hooks, mill installation grooves in the battens (planks) with appropriate depth. They should be spaced every 600mm maximum.



Prior to installing the gutter, the eaves ventilation mesh should be fastened. It ensures air circulations and constitutes an access barrier to the ventilation inlets for rodents, birds and insects. It also protects against leaves and other impurities from being blown by wind into the area under the roof slope.





The next stage consists in installation of the hooks and gutters prepared earlier. It is important to continuously control the proper direction and pitch of the gutter. The hooks are installed using screws in quantity reflecting the number of holes in the hook.



The direction and line of the pitch is determined so that rainwater can flow freely to the drain pipe. The recommended pitch of the gutter is 0.5%. Please also remember that the gutter corners need to be levelled.

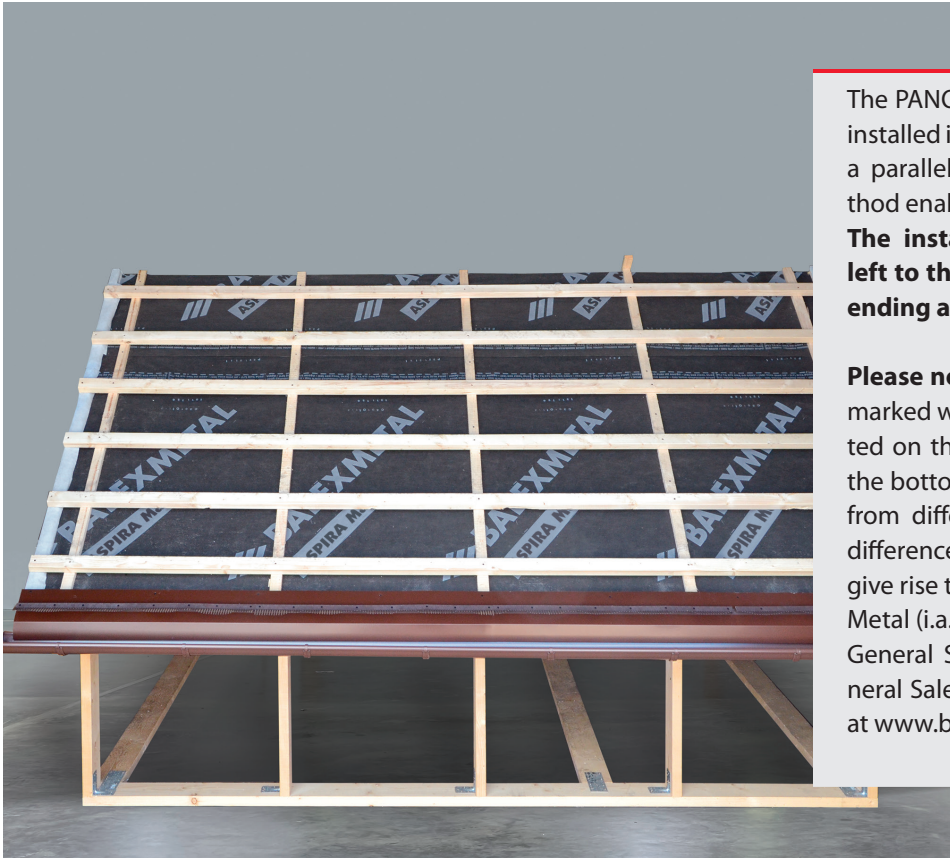
EAVES FLASHING



The eaves flashing should be installed straight in the line of the eaves, by fastening it using galvanised nails or flat-head screws for the first two battens – plank. If the roof slope length requires the eaves flashings to be connected, install them with 100mm overlaps. Edges are appropriately cut and folded in the corners. If the battens are made of steel, use a PES noise insulating tape under each sheet in order to insulate the roof from the noise caused by rain or wind. The spacing of the fastening should not exceed 200mm.

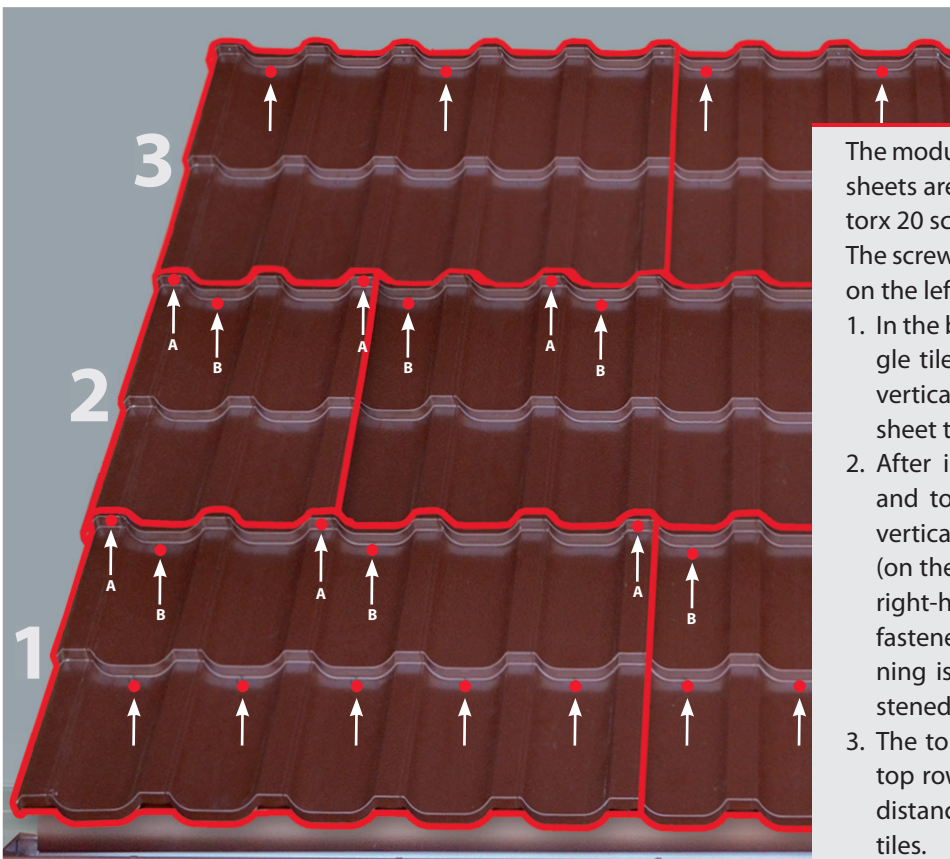


Install an eaves comb with ventilation grate on the eaves flashing. It constitutes a barrier for rodents, birds and large insects against their access under the roof slope. The grate constitutes the last batten which holds the roofing sheets and creates an additional space for roof ventilation.



The PANORAMA 1.0 steel roofing sheets can be installed in two ways: in a staggered pattern or in a parallel pattern. The staggered pattern method enables optimisation of cutting the sheets. **The installation is always performed from left to the right, starting from the eaves and ending at the ridge.**

Please note! It is important that roofing sheets marked with the same batch number are mounted on the roof surface. Batch numbers are on the bottom side of the sheets. Mounting sheets from different production batches may result differences in colour shades, which shall not give rise to claims against Balex Metal (i.a. in accordance with § 6 sec. 5 and 6 of General Sales Conditions and § 7 sec. 3 of General Sales Conditions for Consumers, available at www.balex.eu).



SPACING OF THE SCREWS

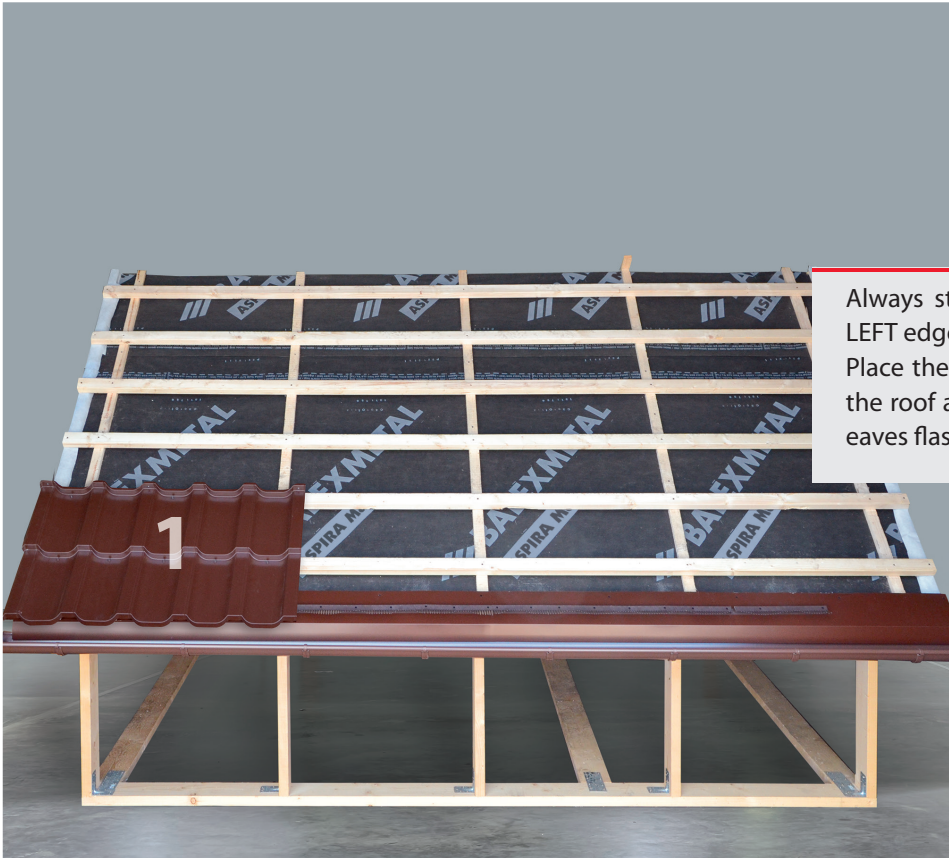
The modules of the PANORAMA 1.0 steel roofing sheets are fastened using the FARMER CORONA torx 20 screws.

The screws are fastened as shown in the scheme on the left-hand side:

1. In the bottom row of the sheets, on every single tile in the wave trough, just next to the vertical embossing line in order to fasten the sheet to the batten.
2. After installing a sheet above, the bottom and top sheets are connected in the edge vertical embossing line in a vertical plane (on the lock) – screw A. Then, in the adjacent right-hand side wave, the bottom sheet is fastened to the batten – screw B. The fastening is repeated while leaving max. 2 unfasted bottom tiles.
3. The top row of the sheets is fastened in the top row of tiles to the batten at a maximum distance of 3 tiles, always fastening the edge tiles.

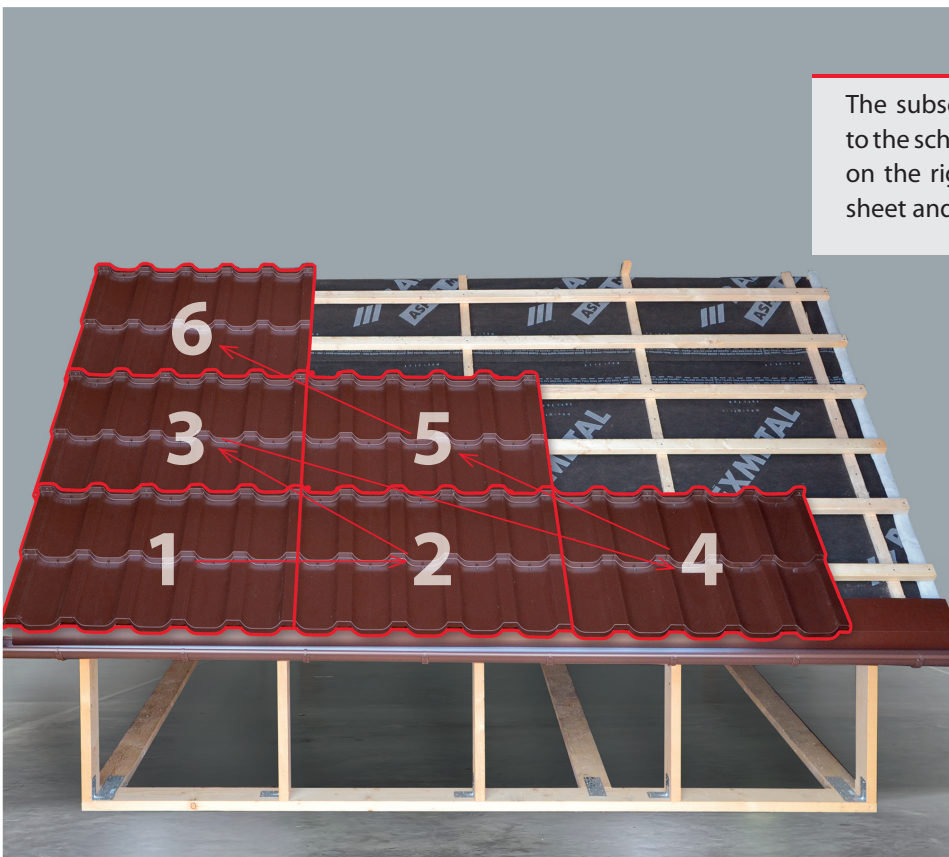


INSTALLATION OF THE PANORAMA 1.0 STEEL ROOFING SHEETS IN A PARALLEL PATTERN



Always start the installation from the bottom LEFT edge of the roof slope.

Place the first sheet evenly to the side edge of the roof and leave a 50mm protrusion over the eaves flashing (measured at the wave crest).



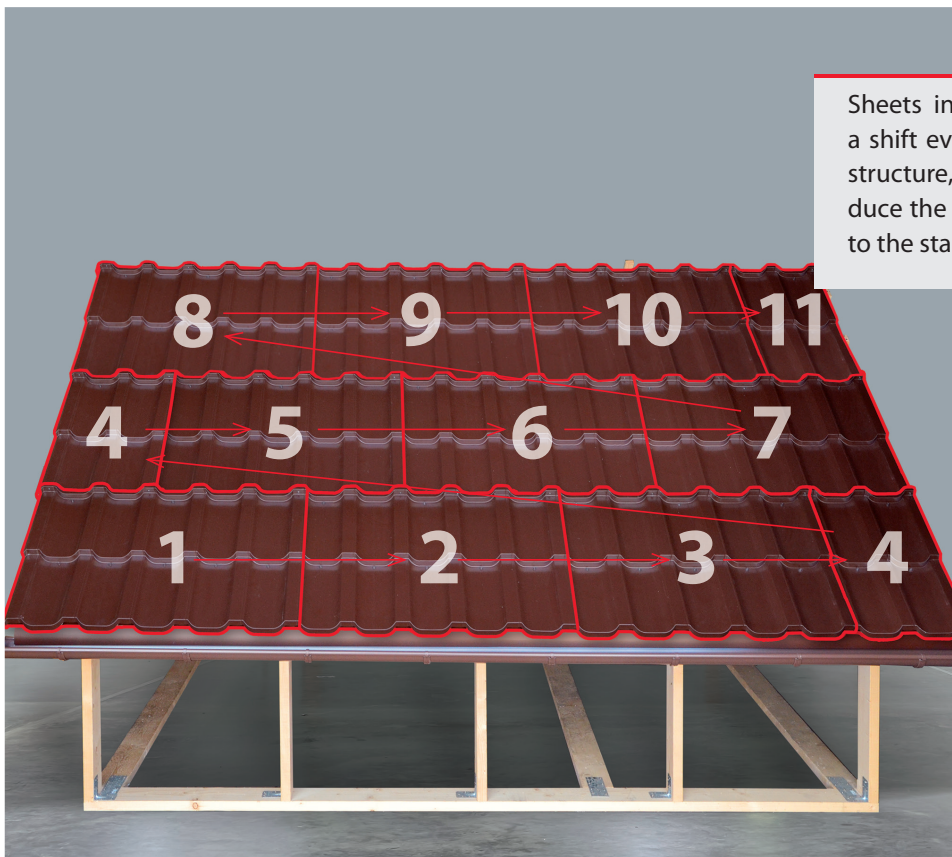
The subsequent sheets are installed according to the scheme on the left-hand side – add a sheet on the right-hand side of the already installed sheet and then add a sheet above it.

INSTALLATION OF THE PANORAMA 1.0 STEEL ROOFING SHEETS IN A STAGGERED PATTERN



Always start the installation from the bottom LEFT edge of the roof slope.

Place the first sheets' row evenly to the side edge of the roof and leave a 50mm protrusion over the eaves flashing (measured at the wave crest).



Sheets in subsequent rows are installed with a shift every 2-3 waves. Owing to the modular structure, it is possible to cut the sheets and reduce the waste by as much as 20% with regard to the standard roofing solutions.

INSTALLING A VALLEY FLASHING

If there is a roof valley one should make form-work for the flashing. The width of each plank should amount to 200mm and the thickness should equal to the thickness of counter-batten.

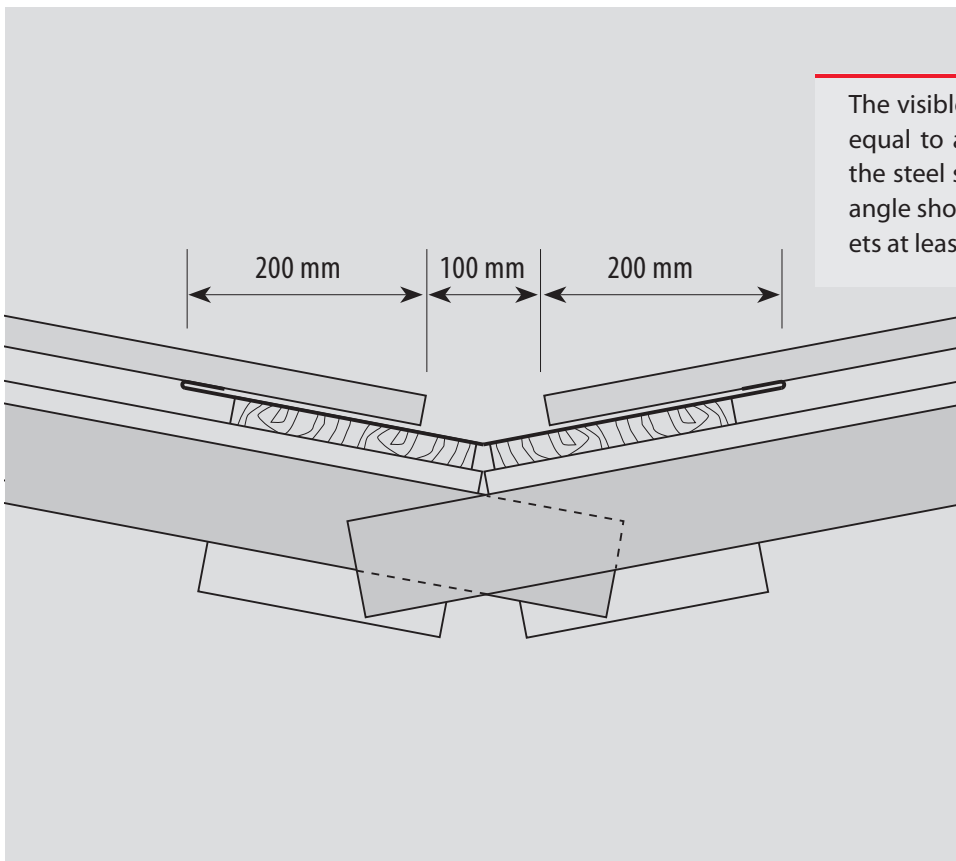


In order to enable free removal of condensation occurring under the roofing in the place of the valley flashing, provide at least 50mm of spacing between the planking of the valley flashing and the counter-batten.





A valley flashing is installed in joints of the roof slope at an obtuse angle. This enables proper removal of water. It is installed in the formwork using clamps. At the length of the sheet joints of the valley flashing, an overlap of 200mm is recommended as well as the application of a roofing adhesive in the area of overlapping. On the bent valley flashing, draw lines which will help you indicate the place of installing the sheets on the roof valley.



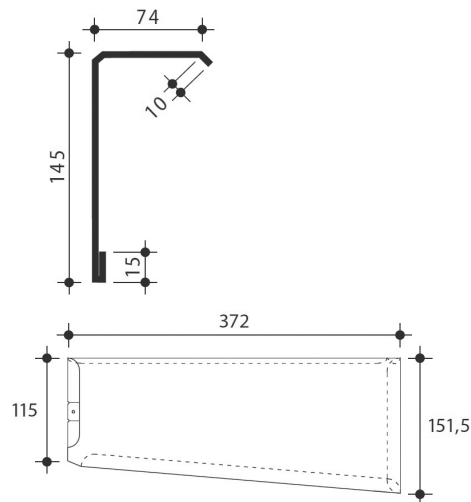
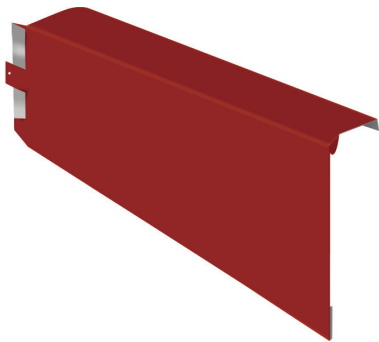
The visible surface of the valley flashing should equal to at least 100mm after installing, while the steel sheet of the valley flashing bent at an angle should be overlapped by the roofing sheets at least by 200mm.

PANORAMA 1.0 EDGE TILE

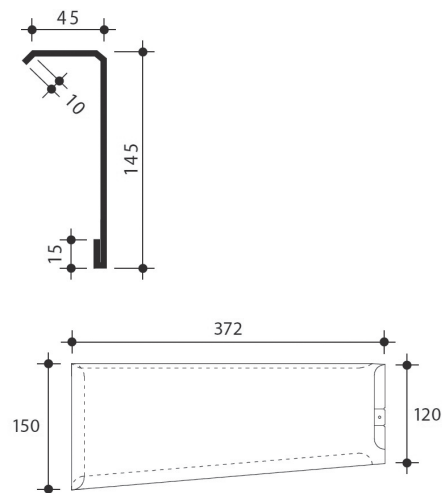
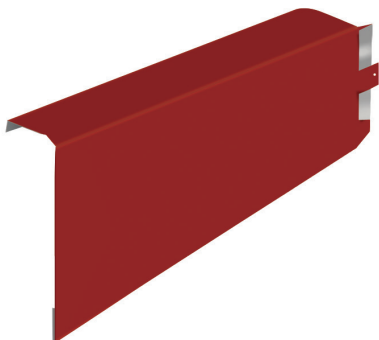
The innovative solution for closing the roof edges is a guarantee of exceptional aesthetic and functional values. In comparison to standard wind beams, the PANORAMA 1.0 edge tile system lacks any slots, which constitutes an ideal protection for the roof edge against rain and snow blown by wind. The PANORAMA 1.0 steel edge tile system is an innovative and patented solution (Patent application no. P.408692).

Flashing is available in two options depending on the side of the roof edge where the tiles are installed. The flashing length is adjusted to the length of the module.

PANORAMA 1.0 EDGE TILE – LEFT



PANORAMA 1.0 EDGE TILE – RIGHT





The PANORAMA 1.0 edge tiles should be installed starting from the line of the eaves. The first edge tile should be installed by fastening it to the eaves plank using a FARMER CORONA torx 20 screw and to the wind plank through the opening in the back part of the flashing using flat-head screws for wood.



Each subsequent flashing is hooked on the preceding flashing, sliding the side part under the protruding element in the back part of the PANORAMA 1.0 edge tile.

RIDGE

In the ridge area, install mounts for the ridge batten where the ridge tiles will be installed.



The ridge batten should be installed after mounting the roofing.



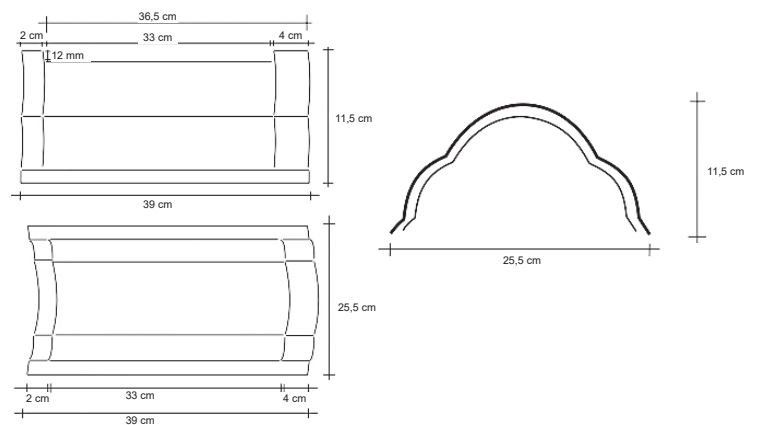
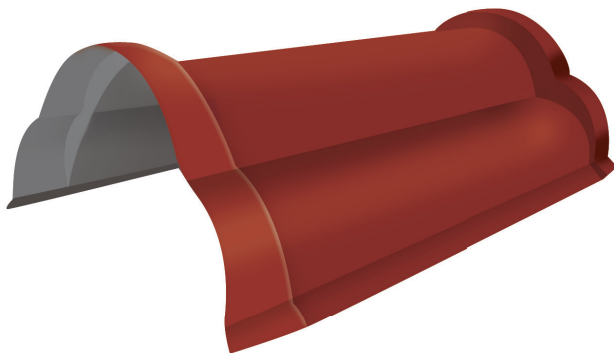


RIDGE SEALING

In order to seal the ridge while retaining proper ventilation parameters of the roofing, Balex Metal recommends using the IZOVENT EXTRA ridge tape or a TUP seal in the areas where the ridge tile contacts the PANORAMA 1.0 steel roofing sheets. The IZOVENT EXTRA ridge tape is fastened to the ridge batten using staples. The pre-installed butyl tape enables additional sealing of the ridge also in case of small slopes of the roof.

PANORAMA 1.0 MODULAR RIDGE TILE

The roof ridge is finished using the **PANORAMA 1.0 modular ridge tile**. Its shape is adjusted to the roofing while the modular structure makes installation easier and limits the amount of waste.





The ridge tile is installed to the ridge batten on each overlap and on each beginning and end of the hump or the ridge using the FARMER CORONA torx 20 screws.

Installation is started by screwing the first element. Then, using a string, indicate the line of the ridge. Each ridge tile features special profiling which enables to install the elements precisely along the line.



The installation methods specified in this manual are exemplary and their application for various roof types may require modification. In case of any questions, please contact the designer or an expert from BALEX METAL.

PANORAMA 1.0

STEEL ROOFING SHEET



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