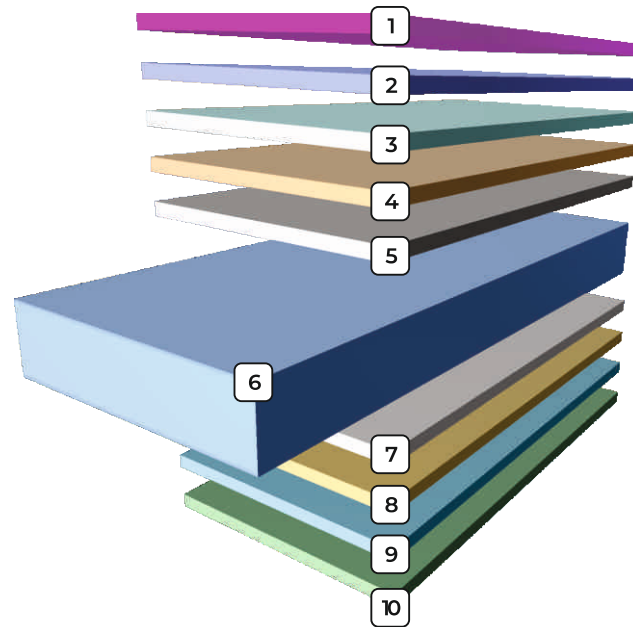


RETRO PANEL

INSTALLATION GUIDE

MATERIAL COMPOSITION - LAYER SYSTEM:



MATERIAL COMPOSITION - LAYER SYSTEM: MATTE

- 1 - PVC protective film: thickness 50 - 200 μm
(application according to the order)
 - 2 - surface varnish: polyester (PE) 35 μm^*
- surface varnish: polyester (PE), GrandeMat finish 50 μm
 - 3 - base layer: polyester (PE) min. 5 μm
 - 4/8 - passivation layer
 - 5/7 - zinc coating: 225 - 275 g/m^2
 - 6 - steel sheet
 - 9 - base layer: polyester (PE) min. 7 μm
 - 10 - anti-condensation layer (application according to the order)
- * upon request, the paint layer can be of 200 μm ,
with a delivery deadline of maximum 60 days

MATERIAL COMPOSITION - LAYER SYSTEM: GLOSSY

- 1 - PVC protective film: thickness 50 - 200 μm
(application according to the order)
- 2 - surface varnish: polyester (PE) 25 μm
- 3 - base layer: polyester (PE) min. 5 μm
- 4/8 - passivation layer
- 5/7 - zinc coating: 225 - 275 g/m^2
- 6 - steel sheet
- 9 - base layer: polyester (PE) min. 7 μm
- 10 - anti-condensation layer (application according to the order)

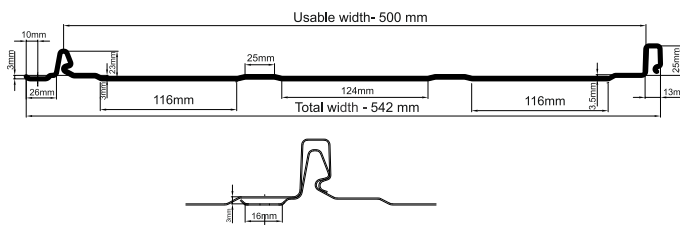
BILKA RETRO PANEL



Folded sheet roof panels with 'click' joint are a modern roofing solution and a quick and easy alternative to traditional roofs. This type of metal roofing can be chosen to cover rustic houses or ordinary roofed houses, requiring refurbishment, but also for new and modern buildings.

The flexibility of the RETRO PANEL covering allows for the coverage of large slope buildings, ensures coverage of atypical buildings such as heritage buildings, keeping the architectural line of the building.

“ Also, RETRO PANEL can be used to cover office buildings and shopping centers without interfering negatively on the aesthetic aspect of the building.

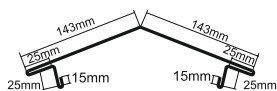


TECHNICAL CHARACTERISTICS	Material	Steel sheet zinc-plated on both sides and protected with a polyester coating
	Nominal thickness	0,45 mm - 0,60 mm
	Total width	542 mm
	Usable width	500 mm
	Corrugation height	25 mm
	Weight per area	4 - 5 Kg / m ²
	Warranty for glossy finishing	10-year warranty for color characteristics and corrosion
	Warranty for matte finishing	15-year warranty for color characteristics and corrosion
	Warranty for GrandeMat finishing	30-year warranty for color characteristics and corrosion
	Estimated life cycle	60-year lifespan, resistance to temperature changes

COLOR RANGE	Glossy shades	Matte shades	GrandeMat shades
	<p>RAL 3000 candy apple red, RAL 3005 cherry red, RAL 3009 brownish red, RAL 3011 red, RAL 5010 blue, RAL 6005 green, RAL 7024 grey, RAL 8003 brass, RAL 8004 brick-red, RAL 8017 chocolate brown, RAL 9002 white, RAL 9005 black, RAL 9006 silver</p>	<p>RAL 3005 cherry red, RAL 3009 brownish red, RAL 6020 green, RAL 7024 grey, RAL 8004 brick-red, RAL 8017 chocolate brown, RAL 8019 dark brown, RAL 9005 black</p>	<p>RAL 3005 GrandeMat, RAL 3011 GrandeMat, RAL 6005 GrandeMat, RAL 7024 GrandeMat, RAL 8004 GrandeMat, RAL 8017 GrandeMat, RAL 8019 GrandeMat, RAL 9005 GrandeMat</p>

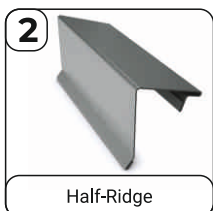
*Color shades may differ from the real ones. In order to be sure, do not hesitate to ask the color chart from the BILKA representative.

RETRO PANEL ACCESSORIES



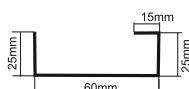
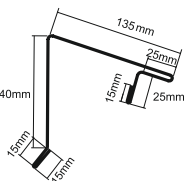
ANGULAR RIDGE

It closes the roof to the top at the intersection of two slopes, acting as a shield against seepage.



HALF-RIDGE

It closes the roof at the top and prevents seepage under the cover. It is used for one slope roofs.



RIDGE SUPPORT

It is mounted under the angular ridge in order to facilitate and mask the ridge fastening points.



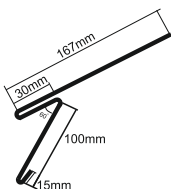
VALLEY

It is mounted under the cover at the junction of two slopes and it directs the water towards the rainwater system.



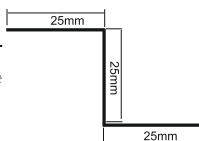
LARGE RAIN SHADOW BORDER

It connects to the drainage system allowing water to drain from the cover to the gutter.



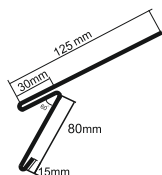
BIG OVERLAPPING ELEMENT

It is used at the junction of the RETRO PANEL with the slope breaking.



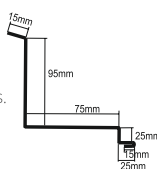
SMALL RAIN SHADOW BORDER

It connects to the drainage system allowing water to drain from the cover to the gutter.



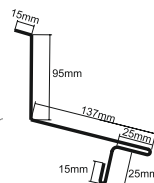
SIDEWALL BORDER

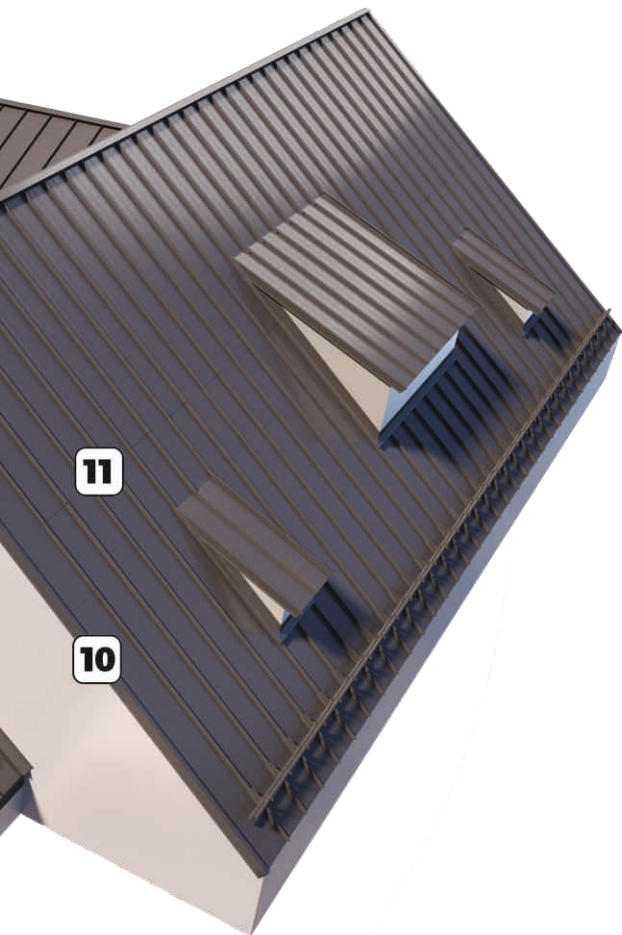
It is used at the intersection of the slopes with fire walls, dividing walls. It prevents water to seep on the wall.



HORIZONTAL WALL BORDER

It is used at the intersection of the slopes with fire walls, dividing walls. It prevents water to seep on the wall.



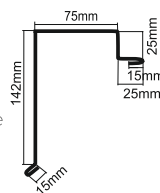


10

Gable Border

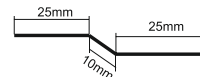
GABLE BORDER

It closes the sides of the roof covering the roof structure edges. It is assembled over the fascia board, after the fastening of the tile plates.



11

Small Overlapping Element



SMALL OVERLAPPING ELEMENT

It is used to join two Retro Panel sheets if the roof is longer and requires the use of two panels.



12

Snow Stopper

SNOW STOPPER

It is assembled on the cover and prevents snow slides off the roof.



13

Universal Sealing Tape

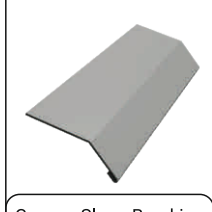
UNIVERSAL SEALING TAPE

It is used on the valley and under the ridge. It has a sealing role.



14

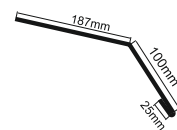
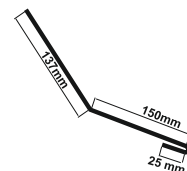
Concave Slope Breaking



Convex Slope Breaking

CONCAVE AND CONVEX SLOPE BREAKING

It is used in areas where roof slopes change their pitch.



15

Butyl Tape

BUTYL TAPE

Flexible self adhesive waterproofing tape, recommended for insulation and anti-moisture protection.



16

Woodcrew

WOODSCREW

It fastens the sheet plates and accessories on the wood lath.

* Any other sheet-metal works are available upon request. For details, please do not hesitate to contact your BILKA representative.

RULES FOR HANDLING, TRANSPORT, ACCEPTANCE AND STORAGE OF THE PRODUCTS

Transport and Handling

- The RETRO PANELS are shipped on wooden pallets, which are recommended to be moved using a crane or forklift/ledge. If the panels are moved by hand, it is recommended to grip the panels at the edges along their longer sides by the required number of people in order to prevent any damage to the edges and any deformation of the panel. Products shall not be moved by dragging. The covers shall be transported using tarpaulin lorries. The pallets shall not overhang the loading area and must be fastened using proper devices. Furthermore, the fastening means must not damage the metallic panels.

Acceptance of the products

- Upon delivery it is recommended to check the products received against the shipping bill for any product defects or any missing products from the order placed by the customer.

Storage of the products

- It is recommended to store the RETRO PANELS indoors, in dry and well ventilated locations, without any major temperature fluctuations. For short periods of time the products may be stored outdoors, but the pallets must be placed on supports, at a suitable distance from the floor to allow draining and venting. If the panels are stored outdoors for periods exceeding 45 days and 180 days indoors, it is considered a breach of the warranty conditions, and no further claims shall be accepted regarding the quality of the surface finishing.

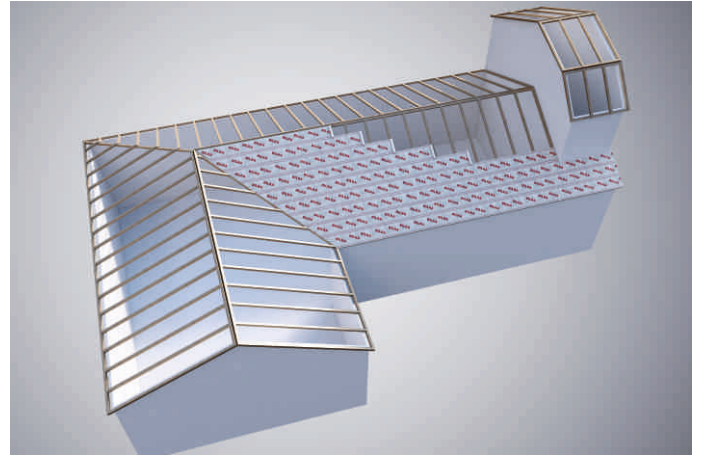
General installation principles

- The installation of the roof involves working at heights and risk of injury, therefore it is important for the fitters to wear protective equipment - fixed cords, hats, gloves. In addition tinner tools are required to cut the panels and the accessories - scissors for straight cuts, cutter, coated wire, lines for the alignment of the gutters, tinner marker, wedge hammer, grooved prism, folding pliers, pliers, screwdriver machine and proper bits for it.
- It is prohibited to cut the products using abrasive blades or other cutting tools that cause excessive local heating of the processed parts (*failure to comply with this requirement is considered a breach of the warranty conditions*).
- Use shoes with soft soles when stepping on the cover, and only step on the area where the wood laths are placed (*the sole must always be checked for any trimmings*).
- During the installation the trimmings must be removed from the surface of the sheet using a soft brush.



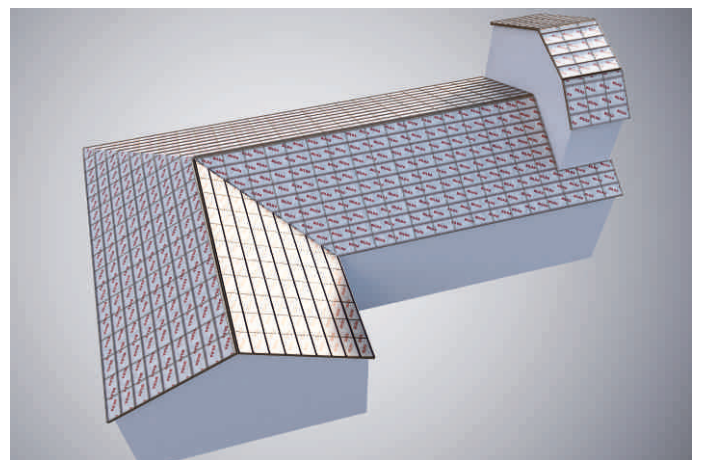
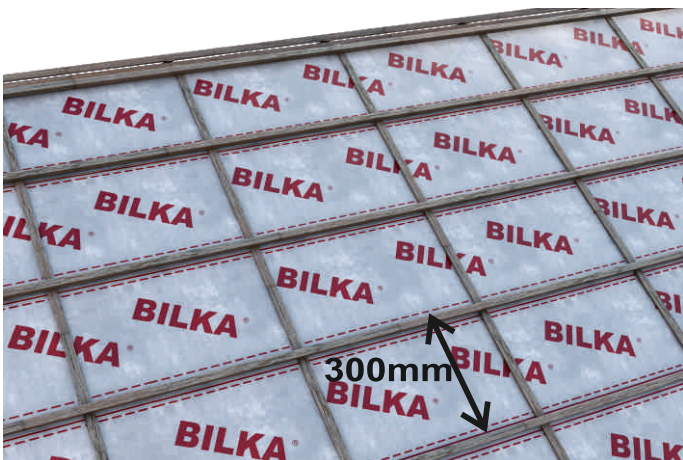
1. Installation of the anti-condensation film

- The anti-condensation film must be installed from bottom to top, as the first row must be installed parallel with the line of the rain shadow. It must be installed considering the direction of the water flow, and may cross over the ridge of the roof. It must be laid horizontally (without any wrinkles) over the rafters or the heat insulation and under the cover.
- From the second row it is recommended to allow an overlap based on the colored stripe (min. 10 cm) on the sides of the film reel.
- It must be fastened to the roof boarding using 30/50 mm battens along the rafter. The batten and the wood lath must be fastened using 100 mm nails or wood screws. For roofs with a slope exceeding 20 degrees that can be created without roof boarding, the anti-condensation film must be installed parallel with the line of the rain shadow directly on the rafters.



2. Installation of the wood lath

- The most commonly used supporting structure for the roof cover is the wooden roof framing. If this is improperly installed, the installation of the entire roof system will be difficult. The installation of the wood lath must start from the rain shadow towards the ridge. The first row of wood laths must be fastened at the level of the roof boardings or rafters, as applicable.
- The second row and the subsequent rows of wood laths shall be installed parallel with the first row, at a distance of approximately 300 mm. For roofs with a slope exceeding 20 – 25 degrees wood laths may be laid every 350 mm.



3. Installation of the rain shadow border

The installation of the rainwater system must be followed by the installation of the rain shadow border, whose purpose is to create a joint between the metallic panels and the gutter, allowing the water to flow from the cover into the gutter.

The rain shadow border must be installed over the entire length of the rain shadow. The fastening shall be made using flat-head self-tapping screws, every 250 -300 mm, see fig.1.

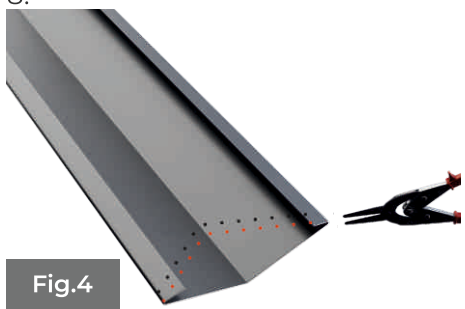
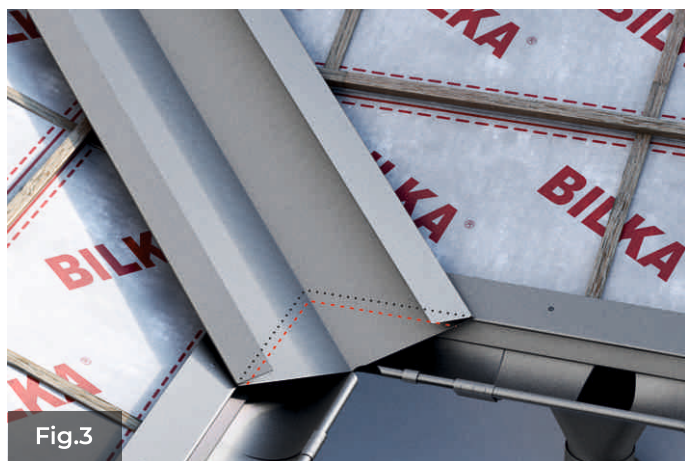


4. Installation of the eaves

It is installed under the cover at the junction of two slopes and directs the water towards the rainwater system. It must be installed over the horizontal wood lath and over the rain shadow border, as follows:

1. At the junction with the rain shadow border, the eaves must be cut as seen in fig. 3 and 4. This is how you mark the junction of the eaves with the rain shadow border, by adding 25mm, then it must be folded over the rain shadow border as seen in fig. 8.

2. The eaves must be fastened to the wood lath using clips made of sheet metal, as seen in fig. 5, 6, 7, 8.



3. In order to fasten the RETRO PANEL at the level of the eaves, the accessory called small overlapping element is used, as seen in fig. 6 and 7. At the contact area between the small overlapping element and the eaves use butyl sealant tape for sealing. The small overlapping element must be fastened to the horizontal wood lath using flat-head self-tapping screws fig.6,7.



5. Installation of the RETRO PANEL panels

The RETRO PANEL panels must be installed from right to left and perpendicular to the rain shadow's line. The panel must be installed with its foldable end towards the rain shadow (each RETRO PANEL is manufactured with such a 25 mm foldable end) following the steps below:

- 1.** Before the panel is fastened to the roof, it is recommended to fold the foldable end of the panel (25 mm) since this operation is impossible at height, on the roof, see fig. 9. After the end is folded, the panel must be fastened to the roof in a perfect perpendicular position to the line of the rain shadow, see fig. 9, 10.
- 2.** The left side of the first panel must be fastened to the wood lath with flat-head self-tapping screws using the holes on the panel as delivered from the factory. It is recommended to fasten the panels to each wood lath, as seen in fig. 10.
- 3.** The second panel and the subsequent ones must be aligned with the joining edge of the previous panel (as already fastened), then the folded end must be inserted in the drip edge of the rain shadow border fig.11. The panels can be clicked into position by pushing (or using a rubber hammer), see fig.12. The panel must be fastened to the wood lath with flat-head self-tapping screws, similarly to the first panel, see fig.10.

6. Joining of the RETRO PANEL panels

For long roof slopes, where the joining of two or more RETRO PANEL panels is required, it is recommended to have an interlaid overlapping of the panels, see fig. 17.

In order to join two panels over the length of the slope, the small overlapping element accessory must be used.

Thus:

- 1.** At the contact area between the overlapping element and the panel use butyl sealant tape for better sealing, see fig. 13. The small overlapping element must be fastened to the horizontal wood lath using flat-head self-tapping screws, see fig. 13.
- 2.** In order to ensure a better overlapping of the panels, both joining edges of the already fastened panel (with which the joining will be made) must be cut. It must be cut up to the level of the overlapping element, see fig. 14.

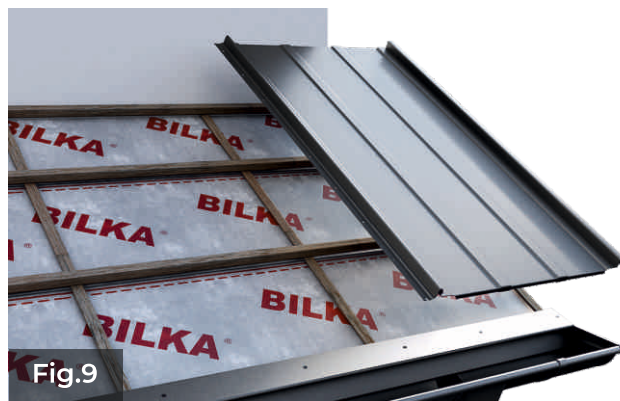


Fig.9



Fig.10

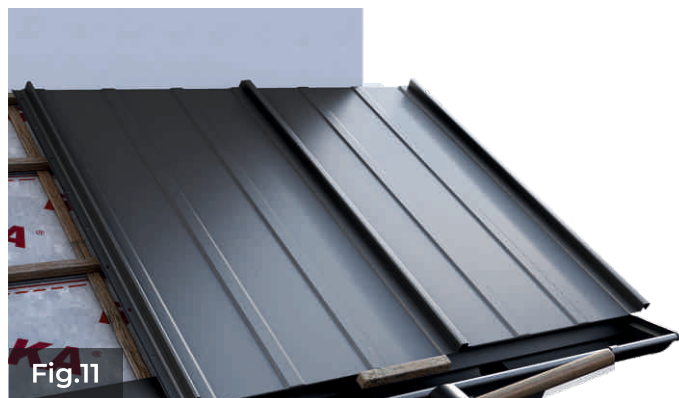


Fig.11



Fig.12

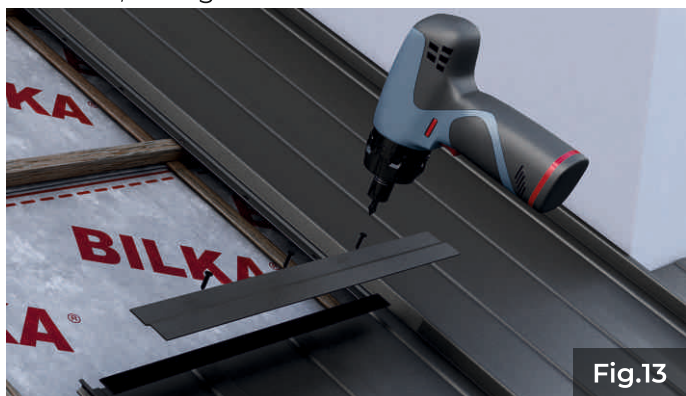


Fig.13



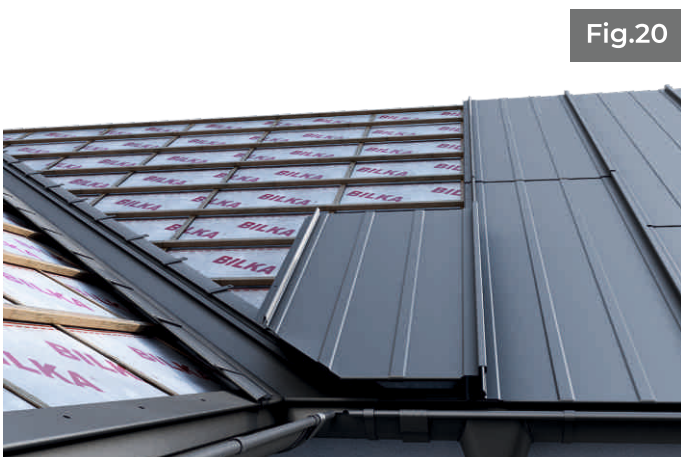
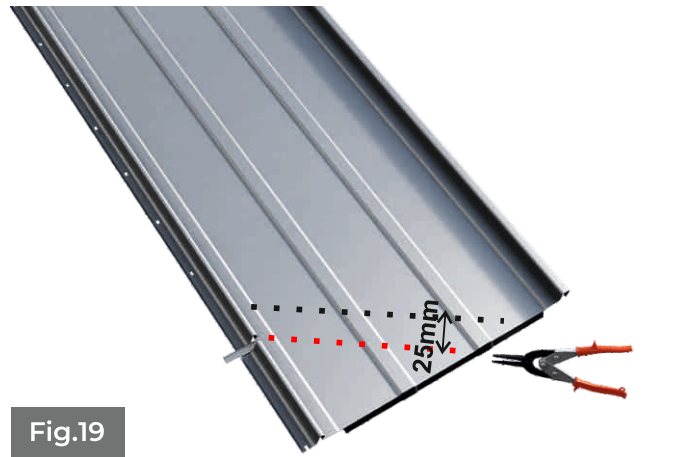
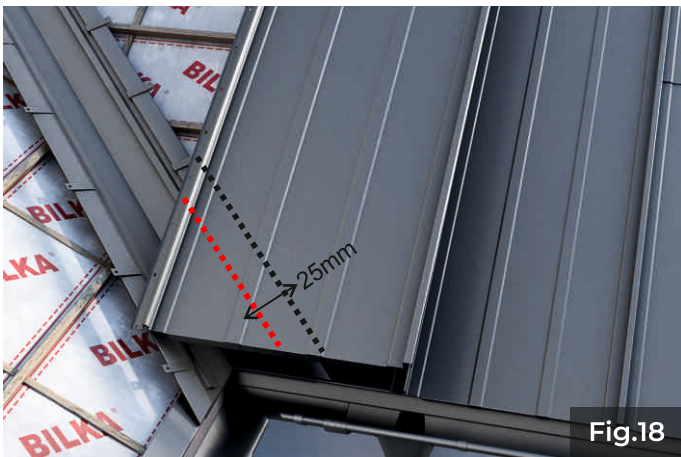
Fig.14

3. Similarly to the panels at the rain shadow, these must be aligned with the joining edge of the previous panel and the folded end must be inserted in the overlapping element already fastened, see fig.15,16.



7. Joining panels at the eaves

- The panel must be aligned with the joining edge of the previous panel, see fig.18.
- The panel must be marked and cut following the line of the overlapping element already installed, see fig.18, 19 (see also the installation of the eaves), by adding 25 mm, and the foldable end must be folded over the overlapping element, see fig.19, 20.



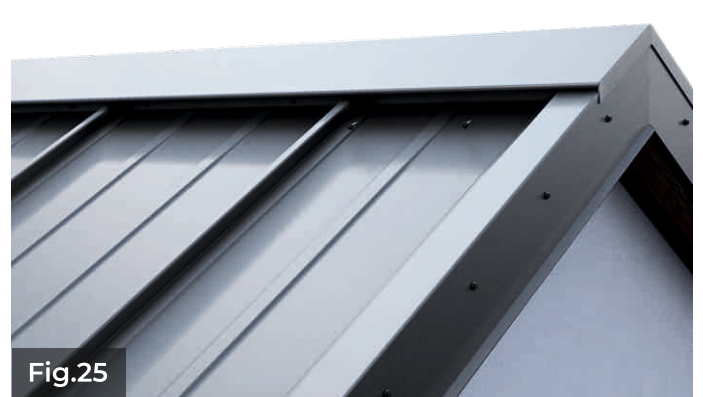
8. Installation of the ridge

1. Before the fastening of the ridge, on the upper part of the Retro Panels already installed on the roof, mark and cut the ridge support accessory so that it fits within the joining edges of the sheet metal panels, see fig.22, 23. Fasten it on both sides of the roof so that the ridge covers both supports.

2. At the contact area between the ridge support and the panel use butyl sealant tape for better sealing, see fig.23. The ridge support must be fastened to the horizontal wood lath using flat-head self-tapping screws (in this case you may also use packed self-tapping screws), see fig.23.



3. The ridge must be marked and cut over the entire length of the ridge, at each joining edge of the RETRO PANELS, see fig. 24. The ridge must be fastened to the ridge support using packed self-tapping screws (4.8 x 35), at approximately every 250 mm, see fig. 24, 25.

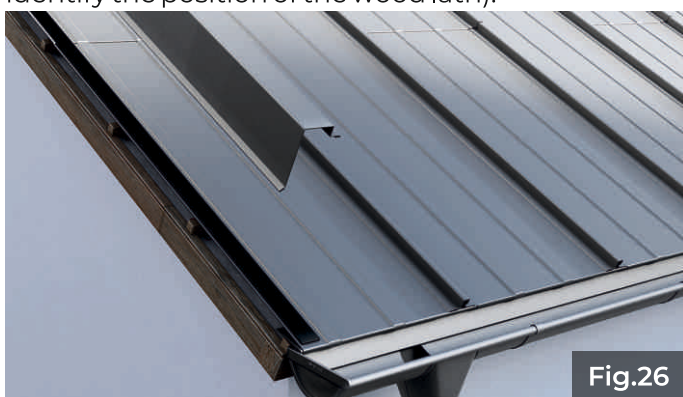


9. Installation of the gable border

It closes the sides of the roof while covering the edges of the roof framework. It must be installed over the fascia board, after the fastening of the Retro Panels.

At the contact area between the gable border and the panel use butyl sealant tape (see fig.26), then the ridge must be fastened to the panel and the wood laths using packed self-tapping screws (4.8x35) at approximately every 250 mm, see fig.27.

It is recommended to mark the wood laths on the panel before the fastening of the gable border, since fastening is performed by drilling the panel and the wood lath (once the gable is fastened, it is impossible to identify the position of the wood lath).



10. Installation of the side wall border

It is used at the intersection of the slopes with fire walls, dividing walls. It prevents water from seeping on the wall.

At the contact area with the RETRO PANEL use butyl sealant tape, see fig. 28. The side wall border must be fastened to the wood lath using packed self-tapping screws, see fig. 30, after the wood laths were marked on the panel (once the border is fastened it is impossible to identify the position of the wood lath).



Fig.29



Fig.28

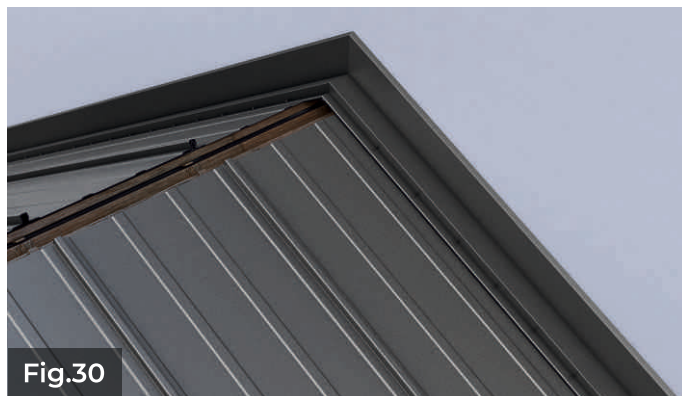


Fig.30

11. Installation of the horizontal wall border

It is used at the intersection of the slopes with fire walls, dividing walls. It prevents water from seeping on the wall.

1. Before the fastening of the horizontal wall border, mark and cut the ridge support accessory so that it fits within the joining edges of the RETRO PANELS, see fig. 31.

2. At the contact area between the ridge support and the panel use butyl sealant tape, see fig. 31. The ridge support must be fastened to the horizontal wood lath using flat-head self-tapping screws, see fig. 31.



Fig.31



Fig.32

3. The horizontal wall border must be marked and cut at each joining edge of the panel, see fig.32, 33. The border must be fastened to the ridge support using packed self-tapping screws (4.8x35), see fig.33, 34.



Fig.33



Fig.34

12. Installation of the convex / concave slope breaker

Before the fastening of the slope breaker accessory, mark and cut the LARGE overlapping element at the joining edges of the sheet metal panels already installed, then fasten it following a straight line, see fig. 35.

1. At the contact area between the LARGE overlapping element and the panel use butyl sealant tape. The LARGE overlapping element must be fastened to the horizontal wood lath using flat-head self-tapping screws, see fig. 36.



2. The slope breaker must be inserted from the lower part of the LARGE overlapping element (see fig. 37), and at the upper part it must be fastened to the wood lath using flat-head self-tapping screws, see fig. 37, 38.

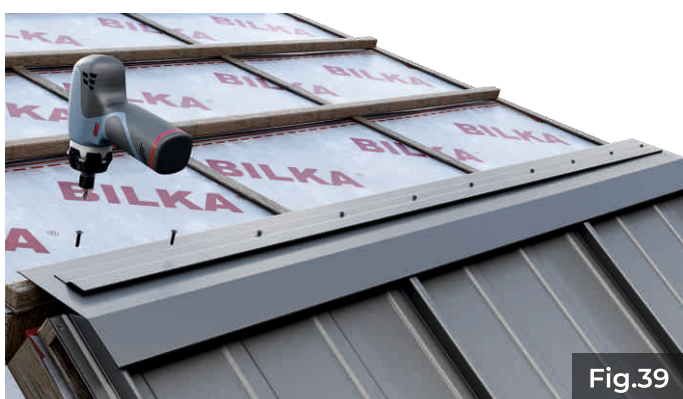


13. Joining of the panels with the slope breaker

1. Before the fastening of the metallic panel, the SMALL overlapping element must be installed over the entire length of the upper side of the slope breaker already installed. The SMALL overlapping element must be fastened to the horizontal wood lath and the slope breaker using flat-head self-tapping screws, see fig. 39.

2. The panel must be fastened to the roof in a perfectly perpendicular position to the line of the SMALL overlapping element, and the folded end of the panel must be folded over the SMALL overlapping element, see fig. 40. The left side of the first panel must be fastened to the wood lath with flat-head self-tapping screws using the holes on the panel as delivered from the factory.

3. The second panel and the subsequent ones must be aligned with the joining edge of the previous panel (as already fastened), then the folded end of the panel must be folded over the overlapping element. The panels can be clicked into position by pushing (or using a rubber hammer). Follow the same procedure as for the panels at the rain shadow.



14. Installation of the snow stopper

For Retro Panel roofs we recommend bar type snow stoppers. A stopper consists of: 2 bars with a length of 2 meters, 4 supports, 4 bar caps, 4 locking parts.

- 1.** The snow stoppers must be installed on a straight line or interlaid and parallel with the rain shadow. In areas with heavy snowfalls and for roofs with a large slope several rows of snow stoppers must be installed every max. 3 meters.
- 2.** Begin the installation by fastening the supports to the joining edges of the panels, as seen in fig. 41, 42, 43.
- 3.** Then fasten the bars, the locking parts and the caps, as seen in fig. 44.





S.C. BILKA STEEL S.R.L.
Braşov, Str. Henri Coandă nr.17
Phone: 0733.30.30.30 office@bilka.ro

WARRANTY CERTIFICATE

EN-BLK 00001

BILKA STEEL hereby guarantees that the products subject matter of this certificate are manufactured and certified by the manufacturer in accordance with the applicable standards and parameters, and that they comply with the European quality standards. The warranty is granted pursuant to Law No. 449/2003.

The guarantee granted by BILKA STEEL for **COLOR and CORROSION** characteristics is:



GENERAL WARRANTY TERMS & CONDITIONS



GENERAL WARRANTY TERMS AND CONDITIONS

covers the products delivered by BILKA STEEL in . BILKA STEEL shall not be held liable for any direct or indirect damages as a result of the facts or omissions below:

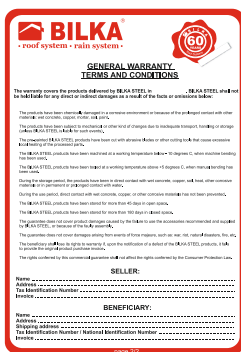
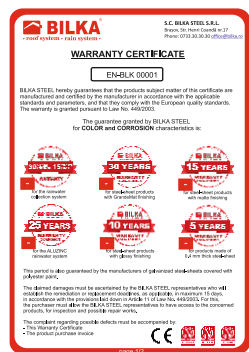
have been chemically damaged in a corrosive environment or because of the prolonged contact with other materials (concrete, copper, mortar, soil, paint).

have been subject to mechanical or other kind of changes due to inadequate transport, handling or storage (unless BILKA STEEL is liable for such events).

BILKA STEEL products have been cut with abrasive blades or other cutting tools that cause excessive local heating of the processed parts.
The BILKA STEEL products have been machined at a working temperature below -10 degrees C, when machine bending has been used.
The BILKA STEEL products have been tooled at a working temperature below +5 degrees C, when manual bending has been used.

The warranty covers the products delivered by BILKA STEEL. BILKA STEEL shall not be held liable for any direct or indirect damages as a result of the facts or omissions below:

- The products have been chemically damaged in a corrosive environment or because of the prolonged contact with other materials: wet concrete, copper, mortar, soil, paint.
- The products have been subject to mechanical or other kind of changes due to inadequate transport, handling or storage (unless BILKA STEEL is liable for such events).
- The pre-painted BILKA STEEL products have been cut with abrasive blades or other cutting tools that cause excessive local heating of the processed parts.
- The BILKA STEEL products have been machined at a working temperature below -10 degrees C, when machine bending has been used.
- The BILKA STEEL products have been tooled at a working temperature below +5 degrees C, when manual bending has been used.
- During the storage and mounting period, the products have been in direct contact with wet concrete, copper, soil, other corrosive materials or in permanent or prolonged contact with water.
- During the use period, direct contact with wet concrete, copper, or other corrosive materials has not been prevented.
- The BILKA STEEL products have been stored for more than 45 days in open space.
- The warranty does not cover product damages because of the beneficiary's failure to use the accessories recommended and supplied by BILKA STEEL, or because of the faulty assembly.
- The warranty does not cover damages arising from events of force majeure, such as: war, riot, natural disasters, fire, etc.
- The beneficiary shall lose its rights to warranty if, upon the notification of a defect of the BILKA STEEL products, it fails to provide the original invoice related to the purchase of the goods.





BILKA STEEL SRL

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