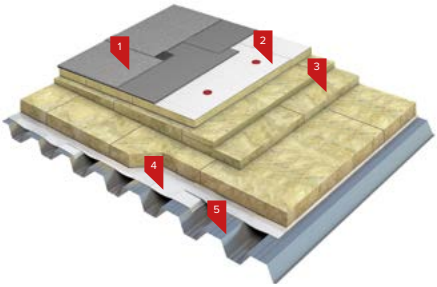
MIDA

Installation of roof vapor barrier system.

1. Installation of roof vapor barrier system.

1.1. General information

Roof is a multi-layer system consisting of waterproofing membrane (1, 2), slope-forming layer (3), thermal insulation (4), vapor barrier (5) and load-bearing construction of the roof (6).



ATTENTION! Laying the roofing membranes is the final step in the installation of the roof system, be careful about installing the previous layers. Mistakes are hard to fix.

1.2. Installation of vapor barrier layer

1.2.1. What is a vapor barrier for?

Vapor barrier protects constructive layers (thermal insulation, roof decking, slope-forming layer) from saturation of moisture from interiors. When there are no vapor barrier or it is damaged, thermal insulation becomes saturated with moisture, which leads to decreasing of heat insulating ability and freezing of a roof construction.

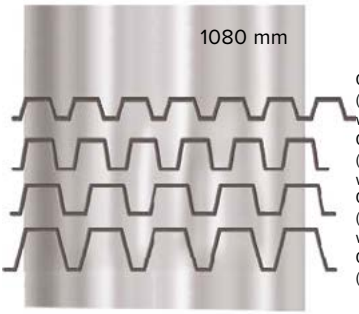
Select reliable vapor barrier for mechanically fastened roofing systems. The vapor barrier in these systems turns out to be leaky due to the fact that the mechanical fasteners are fixed in the load-bearing decking of the roof (profiled sheet) directly through the vapor barrier. Due to the special properties of the bitumen binder, the area where the fasteners are fixed in through the bitumen vapor barrier is tightened and becomes sealed. Therefore, MIDA VB 1500 is recommended for use as a vapor barrier — **MIDA VB 1500**.

1.2.2. The device of vapor barrier on a profiled sheet

MIDA VB 1500 is a foiled vapor barrier self-adhesive bitumen material. High tensile performance allows withstanding the weight of a person standing between the corrugations of the profiled sheet on the vapor barrier, while the material does not tear or stretch.

MIDA VB 1500 is used in public and industrial buildings with normal temperature and humidity conditions (shopping centers, warehouse complexes, sports facilities, etc.).

MIDA VB 1500 1.08 m wide is suitable for all types of profiled sheets:



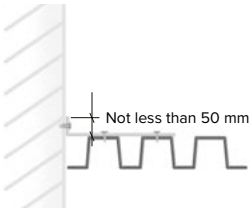
Corrugated profiled steel sheet (height of the waves 75mm, width of the sheet 750mm)
Corrugated profiled steel sheet (height of the waves 114mm, width of the sheet 600mm)
Corrugated profiled steel sheet (height of the waves 114mm, width of the sheet 750mm)
Corrugated profiled steel sheet (height of the waves 158mm, width of the sheet 750mm)

Clear the surface of the corrugated steel sheet from dirt, dust, foreign objects, ice, snow, puddles, oil.

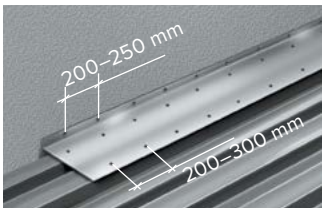
At the places where expansion joints are applied, in the areas of junction of a profiled sheet to walls, ventilation shafts, skylights, roof access hatches, fill the empty corrugations of profiled sheets with non-flammable stone wool materials.

Corrugations are filled with insulation slabs not less than 250 mm from the edge of the profiled sheet. Insulation is also placed where openings and joints of the profiled sheet are made without overlapping (around the places where pipes pass, in the places where funnels are installed, on the ridge and in the valley of the roof).

ATTENTION! It is not allowed to fill the empty corrugations with bulk insulation.



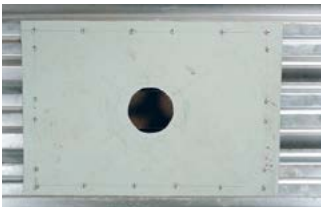
In places where the roof is adjoined to vertical constructions (parapets, walls, ventilation shafts, roof access hatches, etc.), install and fix a L-element made of galvanized steel. The steel thickness must be at least 0.8 mm.



The vertical part of the L-element should be about 50 mm, and the horizontal part should overlap at least two upper flanges of the corrugated steel sheet.

Fastening should be made to the wall with a span of 200–250 mm. Fastening to the corrugated steel sheet is made on the upper flanges of the 2 nearest corrugations with a span of 200–300 mm, in a checkerboard pattern.

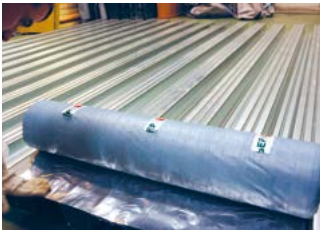
ATTENTION! The upper edge of an L-shaped element must be sealed with butyl-rubber sealant when installing a roof over rooms with humidity conditions and if the height of the flange of the L-shaped element adjacent to vertical structures is more than 50 mm.



In places of penetrations of engineering communications, drainpipes, install a reinforcement sheet made of galvanized steel, at least 0.8 mm thick.

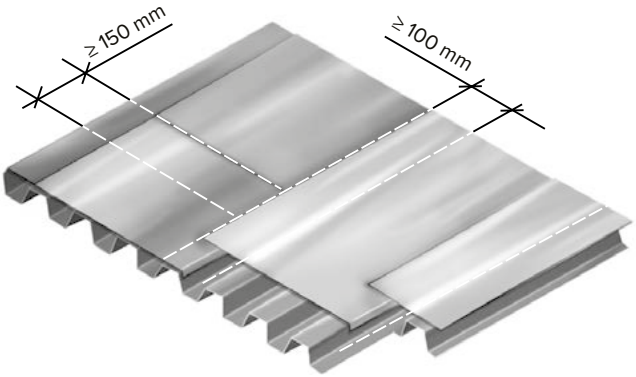
The size of the reinforcement sheet depends on the location of the cutting and must be fastened to at least 3-4 corrugations of the profiled flooring.

Laying of vapor barrier on a common plane



Place the material along the upper flanges of the corrugated steel sheet.

ATTENTION! If there is poor adhesion to the decking, cover the upper corrugated flanges with a primer for metal surfaces. If the surface of a profiled sheet is oiled, it is necessary to first remove the dirt and cover the upper corrugated flanges with a primer for metal surfaces.



Lateral overlaps of adjacent sheets must be at least 100 mm and be located on the upper flanges of the corrugated steel sheet.

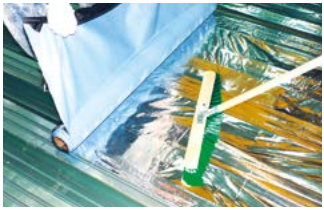
End overlaps must be at least 150mm. Adjacent sheets are laid with end seams spacing.

Before laying the material, roll out the roll to 2 m, form all the necessary overlaps and glue the beginning of the roll:

Using a roofing knife, cut the protective film from the bottom side of the material at a distance of 30–40 cm from the edge of the roll.

Carefully remove the protective film and glue the beginning of the roll.

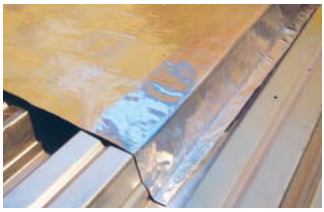
Roll the place of gluing with a silicone roller.



Glue MIDA VB 1500 to the decking:

One worker pulls the release film towards himself, the other smoothens the material with a brush.

Smoothing the material to the decking is carried out with a brush from the middle of the roll to the edges of the material.



If the side of the vapor barrier is placed on the upper flange of the corrugated steel sheet less than 50 mm, then glue the material to the corrugated steel sheet as shown.

The lateral overlap of the subsequent roll should be formed on the glued material on the upper flange of the corrugated steel sheet.

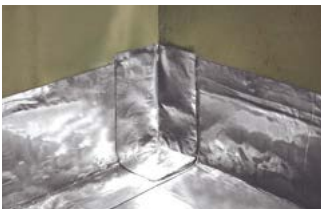
Attachment of vapor barrier to internal angle

When rolling out the roll along a vertical construction (walls, parapet, ventilation shafts, etc.), lay MIDA VB 1500 close to the vertical surface.

When bringing material to a vertical construction, glue the material directly onto the vertical surface. The material is placed 25 mm above the thermal insulation layer.

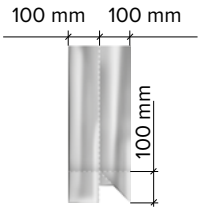
In places where it was not possible to place the material directly onto a vertical surface, glue an additional reinforcement layer.

The additional layer should overlap the edge of the vapor barrier material by 100 mm on the horizontal surface.



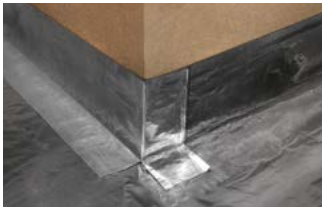
Prepare a patch as shown and glue it into the internal angle.

Strip width 200 mm.



Attachment of vapor barrier to external angle

When laying the material on the horizontal side, roll the material also on the vertical surface where possible. The material shall be placed on the vertical part 25 mm above the thermal insulation layer.



In places where it was not possible to place the material directly onto a vertical surface, glue an additional reinforcement layer.

The additional layer should overlap the edge of the laid material by at least 100 mm on the horizontal surface. In the angle, fold the additional layer to the other side and form an overlap of at least 100 mm.

Cover the cut of the material in the angle with a patch:

Attachment of vapor barrier to pipe penetrations

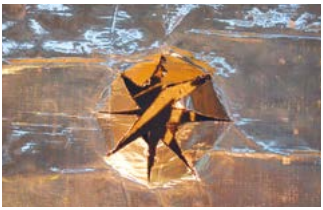
The pipe can only be glued with a vapor barrier material while rigidly connected to the load-bearing structural elements of the building (beams or roof purlines), and the corrugated steel sheet is laid along them.

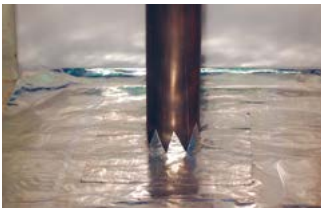
This method is used only for cold pipes with a pumped liquid or gas temperature not higher than +45 °C. In other cases, it is necessary to mount a sleeve with a flange sliding along the pipe around the pipe and connect the vapor barrier to the sleeve in the manner described below.

Place the vapor barrier on the decking by cutting off the vapor barrier around the pipe.

Prepare a reinforcement layer from MIDA VB 1500 in the shape of a square:

- The sides of the square should cover the pipe for 300 mm from each side.
- Draw a circle in the middle of the reinforcement layer equal to the outer diameter of the pipe.
- Cut the material from the edge of the drawn circle to the center of the circle. Glue a reinforcement layer.





Glue the resulting teeth on the pipe.

Prepare a strip from MIDA VB 1500:

- The length of the strip must be 100 mm longer than the circumference of the pipe.
- The width of the strip hall be calculated on the basis that the material should be glued to the pipe 25 mm above the thermal insulation layer and overlap the horizontal surface of the decking by 50 mm.
- Cut into strips a part of the material that will be glued to the horizontal surface of the decking.

Glue the patch onto the pipe.

Performing of a junction of the roofing to water intake funnels

When installing an internal drain, it is recommended to use a two-level funnel.

The funnel consists of a lower part with a flange (Fig. 1), which is installed on the vapor barrier layer and a put-on element (Fig. 2), inserted into the funnel (Photo 1). Tightness between the parts is provided by a rubber gland and a locking ring.

Fig. 1

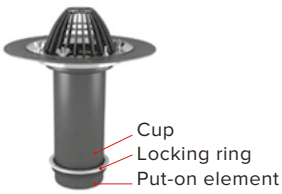


Fig.2

The photo shows a general view of a put-on element and a funnel installed on a vapor barrier layer, without a thermal insulation and waterproofing layer of the roof.

Remove the funnel flange before installing.

Install the funnel in accordance with the project and fasten the water intake funnel to the reinforcement sheet from galvanized steel.

Glue the vapor barrier membrane over the entire area of the load-bearing decking, in accordance with para. 1.2.2. of the section “Laying of vapor barrier on a common plane”.

Push the bolted connections of the funnel through the membrane.

Use a roofing knife to cut the vapor barrier along the inside diameter of the funnel.

Install the rubber gland first and then the locking ring into the funnel.

To increase the tightness of the flange connection with the vapor barrier material, apply a sealing bitumen-polymer mastic.

It is more convenient to apply the mastic in an S-shaped way directly from the cartridge.

Insert the flange and fasten with screws.

Peculiarities of works with MIDA VB 1500 membrane at low temperatures.

The ambient temperature and the temperature of the material itself must be higher than the MIDA VB 1500 flexibility at -25 °C.

MIDA VB 1500 must be kept in a warm room for at least 24 hours at a temperature of +15 °C. The material must be brought to the work site from the warm room immediately before laying on a corrugated steel sheet.

To improve the adhesion of the material to the cooled corrugated steel sheet, it is necessary to additionally warm up the decking from corrugated steel sheet with a burner flame or a hot air dryer before rolling the roll out. Damage to the protective zinc layer on the corrugated steel sheet is not allowed.