

LAYERS ON A FLAT ROOF

1. Hydroinsulation membrane
2. Roof wedge
3. BALEXTHERM SOFT panel
4. Vapor-insulation membrane
5. BALEX BTR trapezoidal (structural) metal sheet

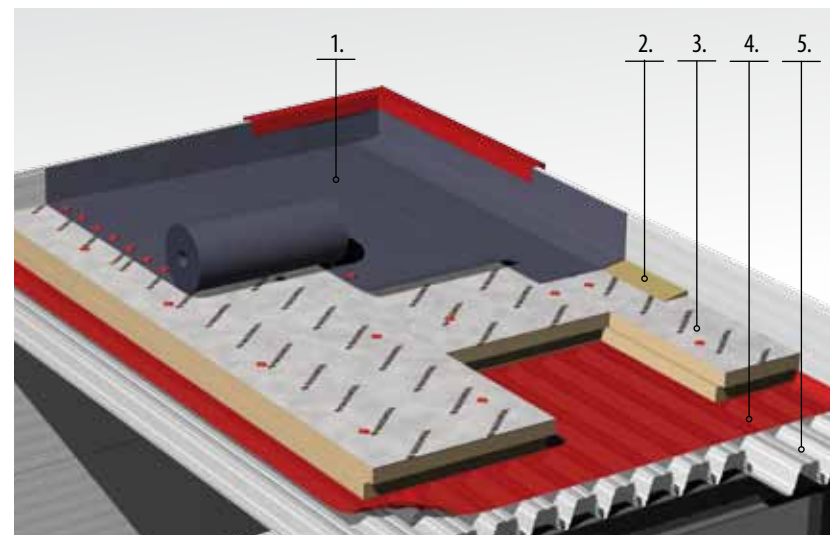


FIGURE NO. 3. LAYERS ON A FLAT ROOF

CROSS-SECTION OF A FLAT ROOF

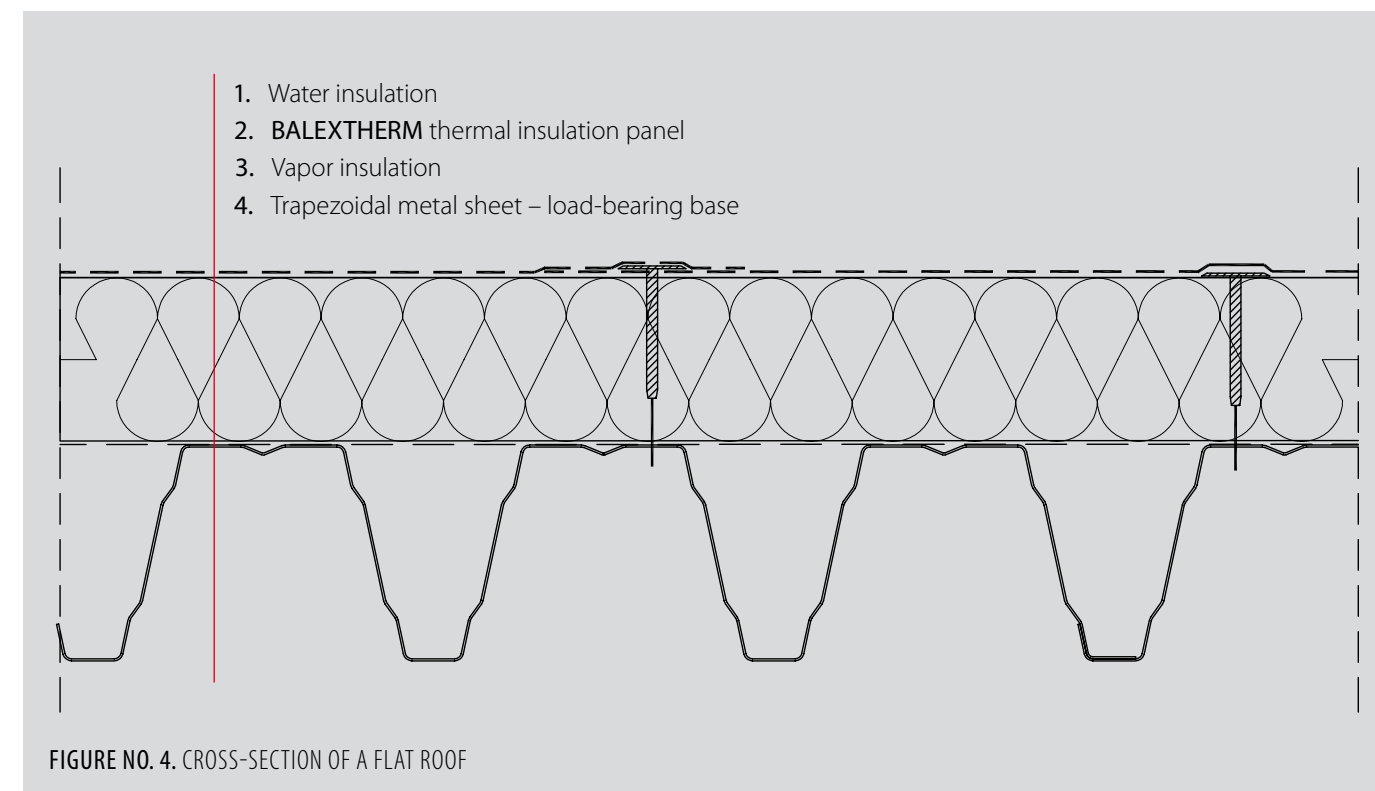


FIGURE NO. 4. CROSS-SECTION OF A FLAT ROOF



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# BALEXTHERM SOFT

THERMAL INSULATION PANELS – FLAT ROOF INSULATION



Wicemistrz  
Eksportu  
2008



**Balex Metal Sp. z o.o.** is a leading manufacturer of construction materials in Poland. The offer of the company includes complete solutions and steel roof and wall systems for residential, commercial and rural constructions. The products gained trust and appreciation in Poland, Belorussia, Lithuania, Latvia, Estonia, Ukraine, Czech Republic, Slovakia, Sweden and Norway. Consultancy and sale is being realized by own net of regional branches, cooperating distributors and a team of professional advisers.



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Index 2009-12-15 01



BASIC INFORMATION ABOUT THE PRODUCT

Insulation material	PIR polyurethane foam
Thickness [mm]	40, 50, 60, 80, 100, 120, 160, 180, 200
Length [m]	from 2.50 to 18.00, as ordered
Total width	1165 mm
Modular / coverage width	1150 mm
Standard finish	overlap 15 mm on the perimeter
Thickness	30 kg / m <sup>3</sup>
Heat transfer coefficient λ	0,022 W / mK*
Fire reaction class	E – acc. to EN ISO 11925-2
Compressive strength	min. 100 kPa at 10% deformation
Lining	aluminum laminate
Packing	suitable for unenclosed transport
Technical requirements	acc. to PN-EN 13165
Marking code	PIR-EN13165-T1-DS(TH)9-CS(10)100-TR70-FW2-WL(T)2

\* not taking into account ageing tests

Roof insulation directly affects the costs of heating the building. Products made from polyurethane foam have the best thermal insulation parameters of all the thermal insulation products which are currently available in the construction materials market. Moreover, these products are water-resistant and light, and their properties do not deteriorate with time.

BALEXTHERM SOFT polyurethane panels have all these properties and are a perfect solution for insulation of flat panels. BALEXTHERM SOFT panels can also be used in pitched roofs, walls, ceiling slabs, and floors.

BALEXTHERM SOFT PANELS:

- **Are lighter than mineral wool** – this leads to easier assembly and less load on the roof structure (1 sq. meter of a 120 mm thick panel weighs only 3.6 kg).
- **Have high compressive strength** – this makes the insulation layer more durable.
- **Do not soak water** – which means no rotting, no mold growth, no increase in weight. Their assembly can be performed regardless of the weather conditions.
- **Have the best insulation properties** of all the thermal insulation materials available in the market
- **Have a notch for overlap connections** to eliminate thermal bridges.

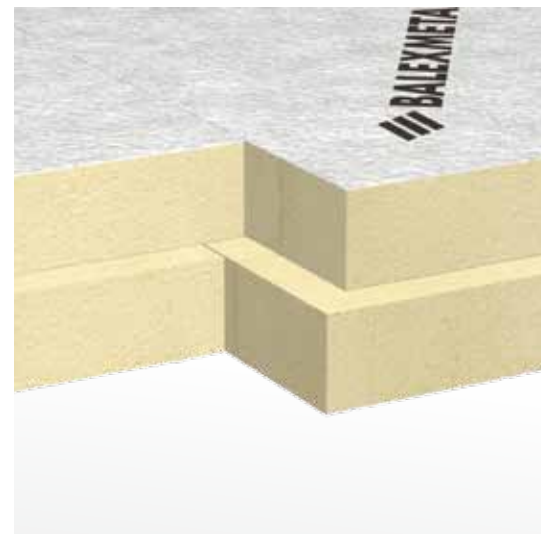


FIGURE NO. 1. BALEXTHERM SOFT THERMAL INSULATION PANEL

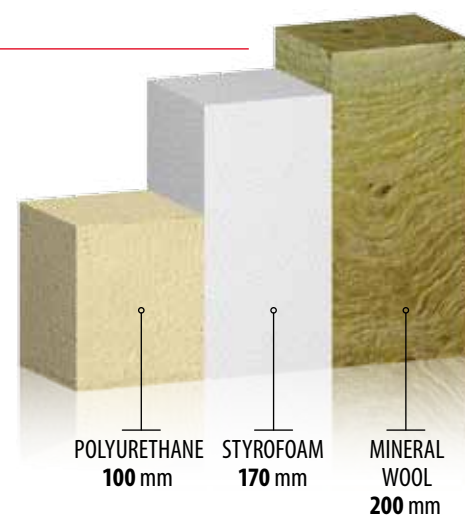


FIGURE NO. 2. THE THICKNESS OF THE INSULATION LAYER MADE FROM VARIOUS MATERIALS TO ACHIEVE THE HEAT TRANSFER COEFFICIENT OF 0.18 W/M<sup>2</sup>K.

BASIC PRINCIPLES OF ASSEMBLY

BALEXTHERM SOFT panels have specially profiled edges with a notch allowing for overlap connections. This solution makes the thermal insulation layer completely free of thermal bridges which may be present when panels with straight edges are used.

FIGURE NO. 5. CONNECTING MILLED BALEXTHERM SOFT PANELS

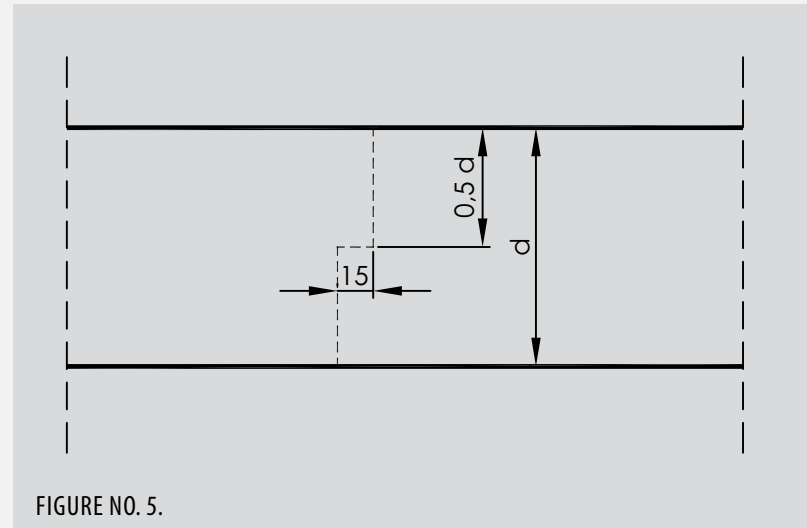


FIGURE NO. 5.

BALEXTHERM SOFT thermal insulation panels can be applied in one layer or in two layers. If two layers are applied, the panels in the different layers must be staggered so that the connections between the panels are not on top of one another. In both cases, the panels in the rows must also be staggered, as shown in Fig. no. 6. BALEXTHERM SOFT panels can be installed in combination with mineral wool panels.

FIGURE NO. 6. ASSEMBLY OF STAGGERED BALEXTHERM SOFT PANELS

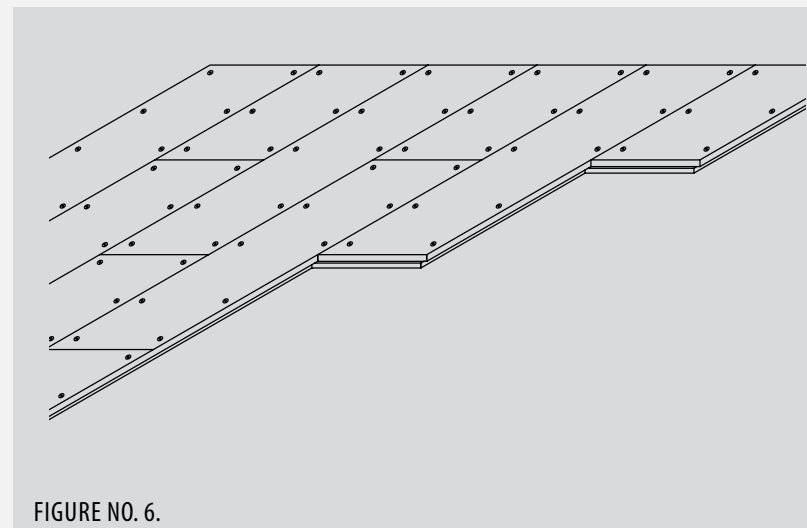


FIGURE NO. 6.

The panels must be placed on a load-bearing base covered with a vapor insulation layer. The base must be even and dry and any refuse remaining after construction works (such as screws, nails, metal burrs, etc.) must be removed prior to the assembly.

BALEXTHERM SOFT panels on a trapezoidal metal sheet base must be laid perpendicular to the corrugations of the sheet. When laying the panels, make sure there are no gaps in the thermal insulation layer. Any discontinuities may be filled with polyurethane foam.

The panels can be fixed with a set comprising a telescopic joint and a proper screw (Drawing no. 7). These components can be purchased from Balex Metal. The minimum number of joints used to fix the thermal insulation panels to the base is 2 per 1 sq. m.

FIGURE NO. 7. A TELESCOPIC CONNECTION AND A SCREW

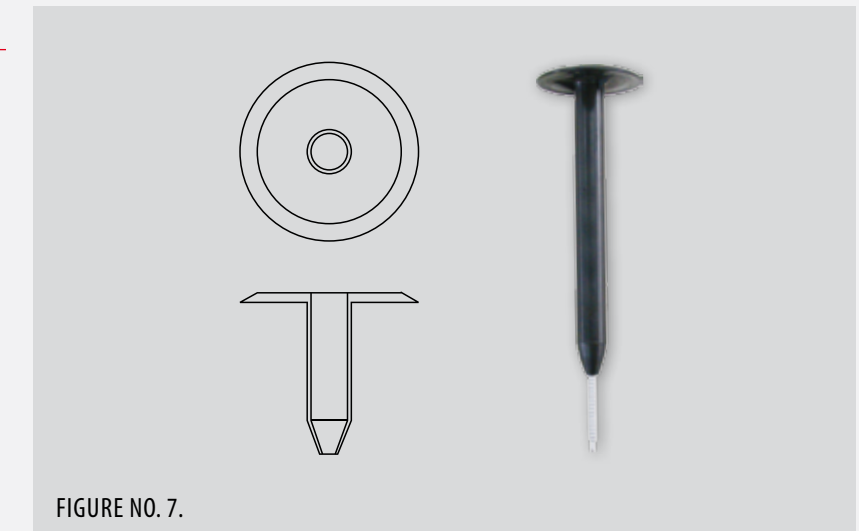


FIGURE NO. 7.

After all the BALEXTHERM SOFT insulation panels are installed, they must be covered with a hydroinsulation layer. The hydroinsulation layer, made from bituminous roofing paper or roof membranes must be fixed to the base with mechanical joints in accordance with the roof cover manufacturer's instructions.

Depending on the shape and complexity of the roof, BALEXTHERM SOFT panels can be easily cut with tools such as cutters, saws, sharp knives, etc.