

Inverted roof BetonStyr

Thermal-acoustic insulation systems of inverted roofs in BetonStyr coupled panels

Beton  **Wood**

Complete isolation systems for high performance wooden roofs



| DESCRIPTION

The complete insulation system for high-performance reverse roofs in concrete with an existing bituminous sheath. Inverted roof Solution BetonStyr is ideal for home wellness and comfort in all climatic zones.

The Inverted roof Solution BetonStyr system is characterized by excellent thermal, acoustic and breathability insulation values which better reduce the mold and moisture formation than traditional systems.

The materials used in this solution are all CE certified.

The stratigraphy is composed by coupled panels of high quality cement bonded particle boards and extruded polystyrene panels BetonStyr with thickness 16+100 mm or 22+100 mm, or even with double layer of cement bonded particle boards to increase the thermal displacement (16+16)+100 mm or (22+22)+100 mm. The two solutions are explained with stratigraphy on the following two pages. BetonStyr panels rest on a 3 cm layer of gravel with a particle size of 3 to 5 cm. The BetonNet 360 glass fiber net is laid on the concrete roof already covered with a bituminous sheath.

The system is applicable for flat and inclined roofs.

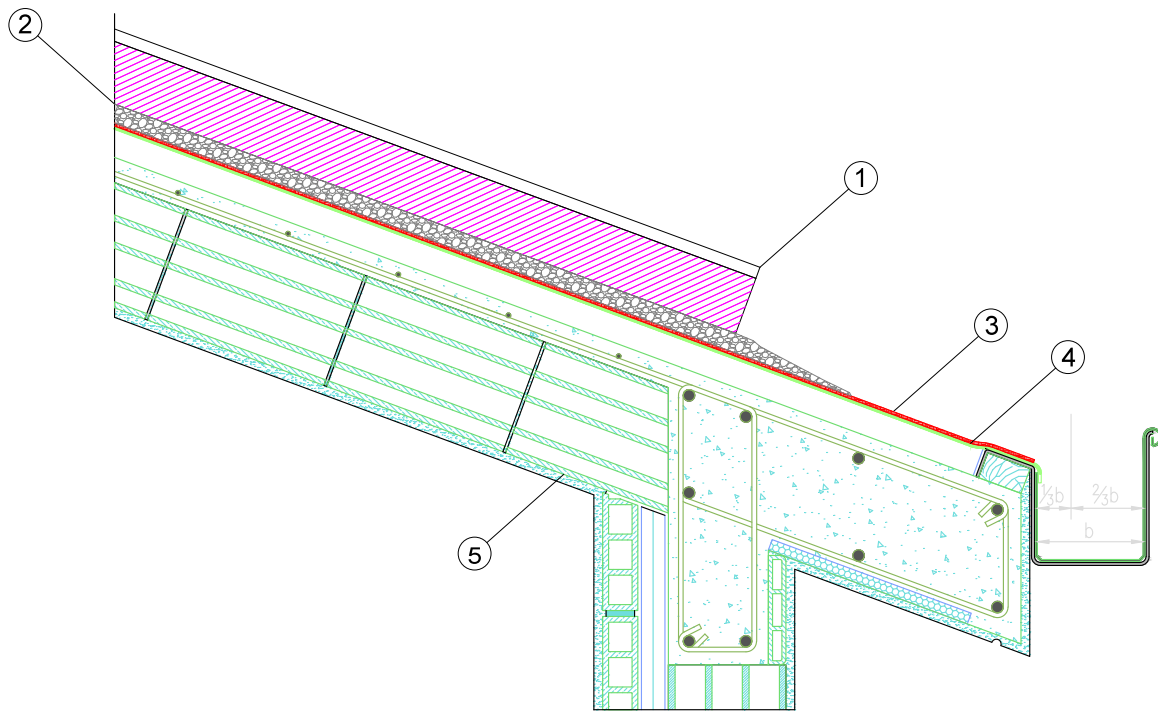
Advantages

- Construction permeable to steam and resistant to driving rain
- For flat and inclined roofs, constant resistance to UV rays
- Complete system: insulation, under cover and waterproofing without condensation
- Excellent protection against cold and summer heat, improved acoustic insulation thanks to the porosity of the panels
- High performance thanks to rational installation and without waste

For more informations about the uses and the installation, our offices are ready to answer your questions on www.betonwood.com



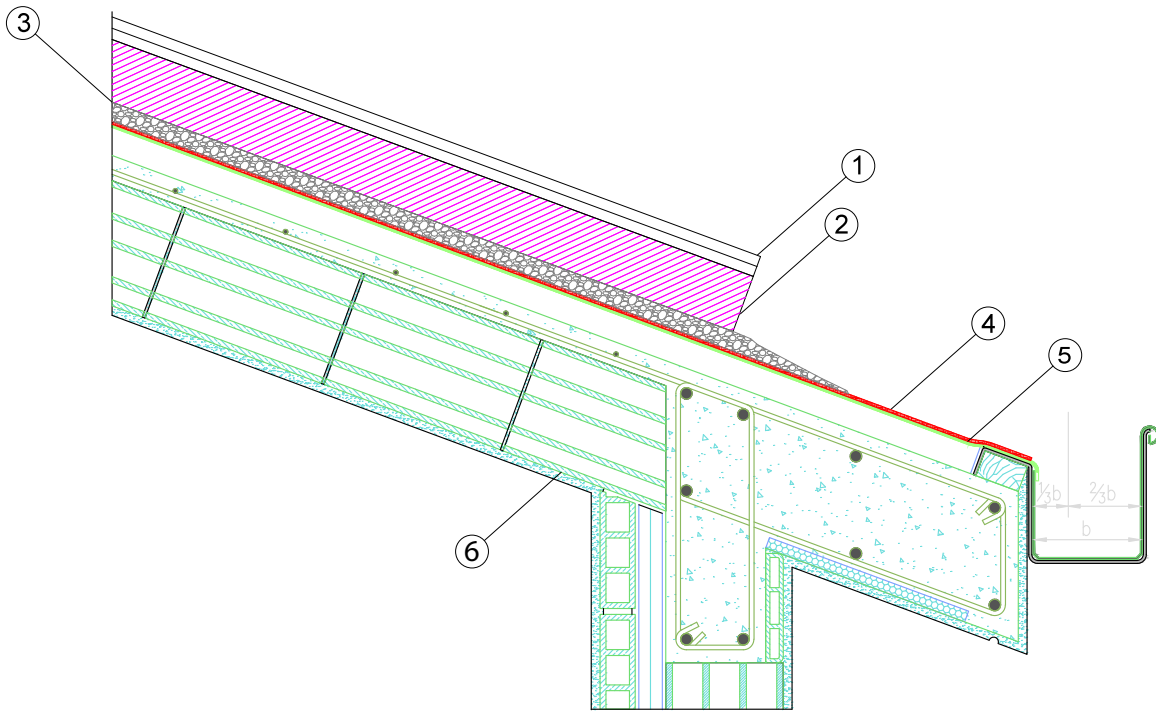
STRATIGRAPHY inverted roof with BetonStyr



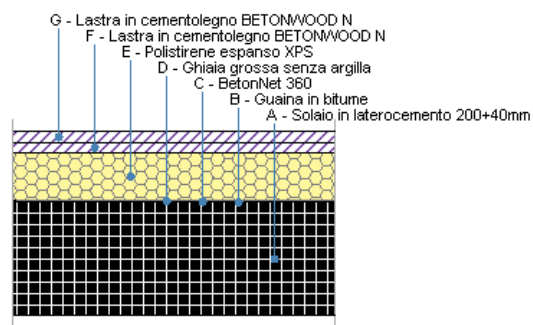
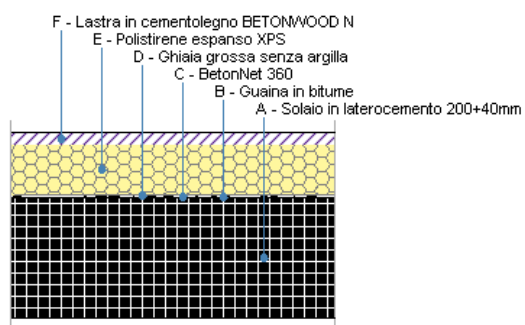
- 1 **BetonStyr** | thickness 22+100 mm Insulated panels coupled for sloping roofs and/or tops in cement bonded particle board (thickness 22 mm) and extruded polystyrene (thickness 100 mm). BetonStyr XPS is suitable for any use in the field of thermal insulation and is particularly suitable for all cases where there is a strong moisture component and the need for a material with considerable compressive strength (compressive strength of the cement is equal to 9,000.00 Kpa).
- 2 **Gravel** | thickness 3 mm Gravel 3-5 is a stone aggregate of siliceous nature in a granulometric curve from 3 to 5 mm.
- 3 **BetonNet 360** Glass fiber mesh 360 g/m³ warp-proof and alkali resistant, used in insulation systems.
- 4 **Bituminous sheath** elastoplastomeric compound waterproofing membrane (BPP), characterized by a cold exibility of -5°C / -10°C / -15°C, reinforced polyester reinforced. The product has a good mechanical strength, considerable dimensional stability and is not sensitive to seasonal climatic variations.
- 5 **Concrete structure roof** | thickness 200+40 mm In the case of a roof with reinforced concrete structure suspensions must be possibly bound to the joists and not to hollow bricks.



STRATIGRAPHY inverted roof with BetonStyr + BetonWood



- 1 **Cement bonded particle boards BetonWood** | thickness 22 mm High density panels (1.350 Kg/m³), with high compressive strength (9.000,00 KPa) and A2 fire resistance class; the panels are made of Portland-type concrete conglomerate and high-density debarked Pine wood fiber. Depending on the needs of thermal displacement, the thickness can be varied with 20 mm thick panels.
- 2 **BetonStyr** | thickness 22+100 mm Insulated panels coupled for sloping roofs and/or tops in cement bonded particle board (thickness 22 mm) and extruded polystyrene (thickness 100 mm). BetonStyr XPS is suitable for any use in the field of thermal insulation and is particularly suitable for all cases where there is a strong moisture component and the need for a material with considerable compressive strength (compressive strength of the cement is equal to 9,000.00 Kpa).
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ZONE C

Solution BSTY - type C1

BetonStyr 22 +100 mm

Transmittance $U=0,273 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,659 (\text{m}^2\text{K}) / \text{W}$
 Displacement 12,45 hours
 Climatic zone C

Solution BSTY+ - type C2

BetonWood 22 mm
 BetonStyr 22 +100 mm

Transmittance $U=0,268 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,736 (\text{m}^2\text{K}) / \text{W}$
 Displacement 14,37 hours
 Climatic zone C

ZONE D

Solution BSTY - type D1

BetonStyr 22 +100 mm

Transmittance $U=0,277 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,609 (\text{m}^2\text{K}) / \text{W}$
 Displacement 12,42 hours
 Climatic zone D

Solution BSTY+ - type D2

BetonWood 22 mm
 BetonStyr 22 +100 mm

Transmittance $U=0,271 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,686 (\text{m}^2\text{K}) / \text{W}$
 Displacement 14,34 hours
 Climatic zone D

ZONE E

Solution BSTY - type E1

BetonStyr 22 +100 mm

Transmittance $U=0,273 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,659 (\text{m}^2\text{K}) / \text{W}$
 Displacement 12,45 hours
 Climatic zone E

Solution BSTY+ - type E2

BetonWood 22 mm
 BetonStyr 22 +100 mm

Transmittance $U=0,271 \text{ W} / (\text{m}^2\text{K})$
 Resistance $R=3,686 (\text{m}^2\text{K}) / \text{W}$
 Displacement 14,34 hours
 Climatic zone E

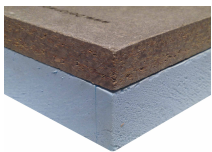


| SYSTEM'S PRODUCTS



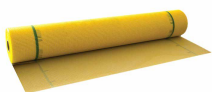
BetonWood Pressed cement bonded particle boards with high compactness, density and hardness, resistant to fire, to atmospheric agents, with excellent thermal and acoustic insulation characteristics. The panels are made of Portland-type concrete conglomerate and high-density debarked Pine wood fibre ($\delta=1350 \text{ Kg/m}^3$) and with the following thermodynamic characteristics: coefficient of thermal conductivity $\lambda=0,26 \text{ W/mK}$, specific heat $c=1.88 \text{ KJ / Kg K}$, coefficient of resistance to vapor penetration $\mu=22,6$ and fire reaction class A2-fl-s1, according to EN 13501-1.

The dimensions of the panel correspond to ... mm for a thickness of ... mm. The wood used in panel processing comes from forests controlled by FSC reforestation cycles and pressed with water and hydraulic binder (Portland cement) with high cold compression ratios.



BetonStyr XPS BetonStyr rigid insulating panel, 22+100mm thick, made up of two layers coupled in the factory consisting of a BetonWood cement bonded particle board, high density (1350kg/m^3), made of Portland cement mix and barked pine wood fiber thickness 16 or 22 mm and an insulating layer of extruded polystyrene with a thickness of 100 mm.

The cement bonded particle board has the following thermodynamic characteristics: coefficient of thermal conductivity $\lambda=0.26 \text{ W/mK}$, specific heat $c=1.88 \text{ KJ/Kg K}$, coefficient of resistance to vapor penetration $\mu=22.6$ and reaction class to A2 fire, according to EN 13501-1. The polystyrene is characterized by the following thermodynamic characteristics: coefficient of thermal conductivity $\lambda=0,026\div0,036 \text{ W/mK}$, specific heat $c = 1,450 \text{ J/Kg K}$, coefficient of resistance to vapor penetration $\mu=50\div100$. Both materials are CE certified.



BetonGlass 360 The network has 360 g/m^3 density and complies with the ETAG004 Guideline for ETICS (External Thermal Insulation Composite System), as certified by IFBT GmbH-MFPA Leipzig GmbH. Suitable for internal and external armored thermal insulation (suitable for all Beton-Therm products). Rolls of 50 square meters

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| CERTIFICATIONS

The Solution Betonstyr inverted roof insulation system is produced with CE certified materials in accordance with the regulations in force.

The certificates of the individual products are available on request.

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