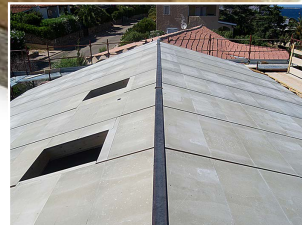


Betonroof

Building insulating coupled panels for backside roofs with cement bonded particle board and wood fiber

Beton Wood

Natural backside roof with coupled panels



| AREAS OF APPLICATION

Betonroof is a 3 layers coupled panels with two external cement bonded particle boards BetonWood and one internal insulating panel in wood fiber FiberTherm top.

In a single panel the advantages of wood fiber, a natural insulator with high thermal performance, are combined with those of cement bonded particle boards, high density natural material, which allows excellent results in thermal displacement, sound insulation and mechanical resistance.

All the materials used for the production of Betonroof panel are obtained with the use of wood obtained solely from forests managed in a responsible manner, as attested by the FSC certification.

Betonroof proposes itself as a construction material intended for outdoor use due to its high thermal displacement due to its 3-level structure; in fact, having multiple levels in materials with different densities creates the "mass-spring-mass" effect that reduces thermal conductivity and therefore lengthens the times of heat transfer from the outside to the inside, thus creating a comfortable climate inside building. It can be easily installed on floors, walls and roofs; it has excellent versatility, fire resistance in class A2, and can effectively isolate every part of the building:

- it can be used as a thermal and acoustic insulation of roofs and floors that require a high mass to increase the thermal displacement and the acoustic abatement;
- it is also ideal for the insulation of both flat and sloped roofs as the bonding surface protects the wood fiber from atmospheric agents, humidity and fire. The panel is entirely walkable and therefore suitable for laying on horizontal surfaces;
- the panel is characterized by a high compressive strength of 9,000.00 kPa and is therefore suitable for use in public places such as schools, hospitals, libraries, offices, but also fire escape route and so on ..

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



| MATERIAL

Betonroof panels are realized in cement bonded particle boards and insulating wood fiber panels already coupled in a sort of sandwich. The hard layers in cement bonded particle boards have a high mechanical resistance and a high density equal to 1350 kg/m^3 ; the other panel is realized in natural insulating wood fiber FiberTherm top and it has a density equal to 140 kg/m^3 .

| SPECIFICATION

Coupled insulating panel realized in cement bonded particle boards and wood fiber panel Betonroof. The Betonroof panel has size ... mm and thickness of ... mm, is realized with three coupled panels.

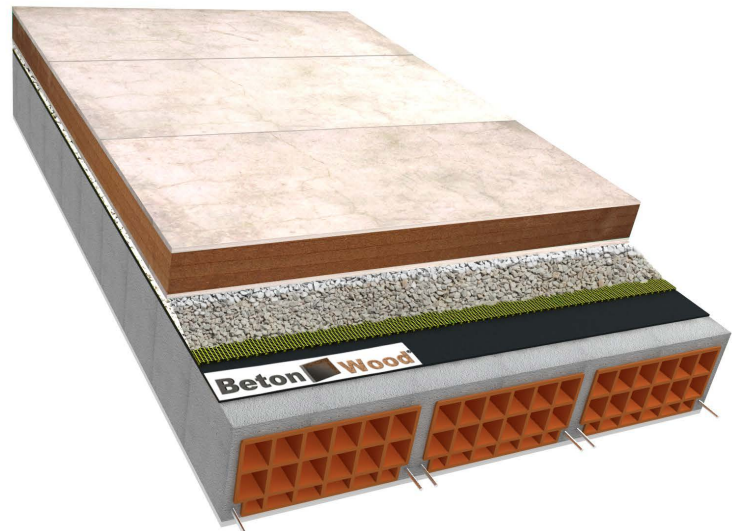
The two cement bonded particle boards BetonWood are realized in cement conglomerate Portland type and debarked Pine wood fiber, with high density ($\delta=1350 \text{ Kg/m}^3$) and with the following thermo-dynamics characteristics: declared thermal conductivity $\lambda=0,26 \text{ W/mK}$, specific heat $c=1,88 \text{ KJ/Kg K}$, water vapour diffusion resistance factor $\mu=22,6$ and fire reaction class A2-fl-s1, according to the standard EN 13501-1.

The wood used in the processing of cement is from forests controlled by FSC reforestation cycles and pressed with water and hydraulic binder (Portland cement) with high cold compression ratios.

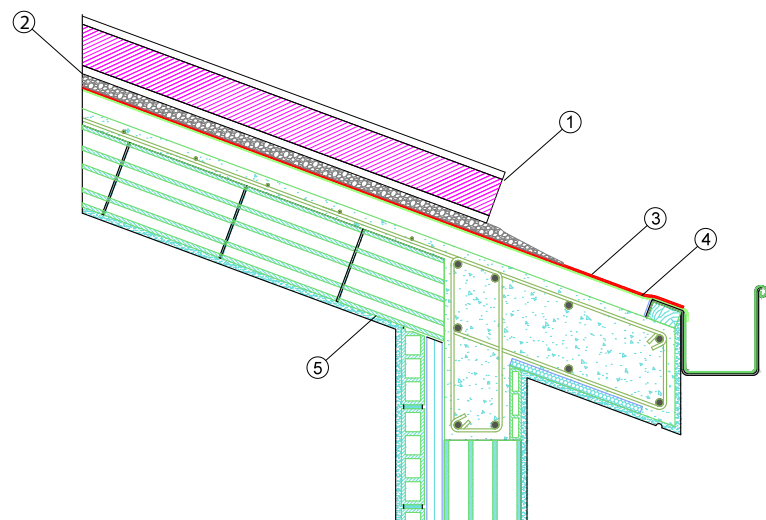
The other panel represent the insulating layer and is realized in wood fiber FiberTherm processed according to the standards EN 13171 and EN 13986 under constant quality control.

The material is characterized with the following thermo-dynamic characteristics: density $\delta=140 \text{ Kg/m}^3$, declared thermal conductivity $\lambda=0,041 \text{ W/mK}$, specific heat $c=2.100 \text{ J/Kg K}$, water vapour diffusion resistance factor $\mu=5$ and fire reaction class E, according to the standards EN 13501-1.

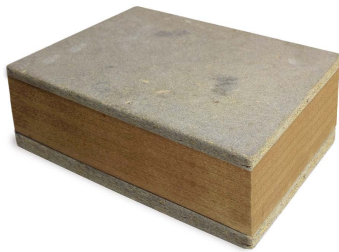
The wood used in the processing comes from forests controlled by FSC reforestation cycles.



| BACKSIDE ROOF STRATIGRAPHY



1. Betonroof panel - Coupled insulating panels for pitched and flat backside roofs in cement bonded particle boards and wood fiber panels FiberTherm top.
2. Gravel thickness 3 cm Aggregate of assorted granulometry. Aggregate size: in granulometric curve from 3 to 5 mm.
3. BetonNet 360 Glass fiber net with a density equal to 360 g/m^2 is warp-proof and alkali resistant, used in insulation systems.
4. Existing waterproof bituminous sheath
5. Existing concrete roof



| USES

The **Betonroof** insulating panel can be screwed to the wooden structures / frames in metal or tessellated on any type of masonry and floors. You can install the dry panel as a floating screed, simple dry screed, flat roofs or pitched.

| CERTIFICATIONS

The **Betonroof** panels are produced with CE certified materials in accordance with current regulations. Product certificates are available on request.



| TECHNICAL CHARACTERISTICS **Betontherm roof**

Cement bonded particle board

Density ρ [kg /m ³]		1350
Reaction to fire in order to the standard EN 13501-1		A2-fl-s1
Thermal conductivity coefficient λ_D [W/(m * K)]		0,26
Specific heat c [J/(kg * K)]		1.880
Steam penetration resistance μ		22,6
Coefficient of linear thermal expansion α		0,00001
Swelling in thickness after 24h of storage in water		1,5%
Superficial PH value		11
Flexural strength σ [N /mm ²]		min.9
Transversal tensile strength N [N /mm ²]		min.0,5
Air permeability I/min. m ² Mpa		0,133
Modulus of elasticity E [N /mm ²]		4500
Shear strength τ [N /mm ²]		0,5
Resistance to distributed load kPa		9000
Resistance to concentrated load kN		9

| TECHNICAL CHARACTERISTICS **Beton roof top**

Wood fiber panels FiberTherm top

Produced and supervised in accordance with	DIN EN 13171
Board Designation	WF-EN13171-T5-CS(10\Y)100-TR10-MU3
Fire classification according to EN 13501-1	E
Thermal Conductivity λ_D W/(m*K)	0,041
Declared Thermal Resistance R_D (m ² *K)/W	1,90 (80)/ 2,60 (100)
Density kg/m ³	approx.140
Water vapour resistance diffusion factor μ	3
sd value (m)	0,24 (80)/ 0,30 (100)
Specific Heat Capacity c J/(kg*K)	2.100
Compressive strength at 10% compression (N/mm ²)	0,07
Compressive strength (kPa)	70
Tensile strength perpendicular to the board \perp (kPa)	≥ 10
Length related flow resistance (kPa*s)/m ²	≥ 100
Raw materials	wood fibre, polyurethane resin,paraffin wax
Waste code (EAK)	030105/170201

Head office:
Via Falcone e Borsellino, 58
I-50013 Campi Bisenzio (FI)

T: +39 055 8953144
F: +39 055 4640609

info@betonwood.com
www.betonwood.com

BTROOF IR.18.02