BetonWood

High density cment bonded particle boards (1350Kg/m³)

Cement bonded particle boards

| DESCRIPTION

The cement bonded particle boards BetonWood is the product that gives the name of our company and it's a material which suits a great variety of applications in the building industry. Realized in Portland cement and wood fibers, this particular panel provides an excellent solution for interventions designed to achieve high levels of thermal lag, due to its high density which makes it also suitable for self-supporting dry screeds, radiant floors and stiffening structures.

| MATERIAL

Cement bonded particle board BetonWood in Portland cement anche wood fibers. The BetonWood panel has a great density (1350 Kg/m³), it is a multiple-use material for green building.

The BetonWood cement bonded particle boards combines the advangates features of the cement with the wood properties. The panel structure is realized with wood fibers, fragments and chips which are uniformly agglomerated by Portland cement. The surfaces are smooth, with the gray color typical of cement; however the product can undergo sanding operations becoming more brown.

- it has a lighter color than other traditional material for building;
- it is resistant to climatic changes and freezing;
- fungi and insects are not able to attack or damage it;
- thanks to its physical and mechanical features, the product is considered one of the better material for green building with light weight;
- it is incombustible (A2 according to Standard DIN 4102);
- it is formaldehyde-free and free from asbestos, ecc.;
- it is free from recycled inks (found in recycled cellulose materials);
- it is weather resistant;
- it can be processed with woodworking tools;
- it has high load capacity.

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



USES

The BetonWood cement bonded particle boards can be used alone or with other materials, in order to provide a perfect response to most of the building needs. Used as a building panel BetonWood is suitable for the realization of:

- radiant floors BetonRadiant and pre-armed floors;
- roofs with high thermal lag;
- ceilings, false ceilings and fire-resistant walls;
- fire and fire-resistant walls, self-supporting and sound-absorbing walls;
- floors and floating floors structures;
- load support for floors and walls;
- dividing walls for offices;
- fixtures;
- external and internal cladding;
- running boards benches, platforms and chutes;
- exhibitions and installations prefabricated boxes;
- road and railway noise barriers;
- formworks.

SPECIFICATIONS

High density cement bonded particle board BetonWood. The panels is realized in cement mixing Portland cement type and debarked Pine wood fiber, with high density (δ=1350 Kg/m³) and the following thermodynamic properties: coefficient of thermal conductivity λ=0,26 W/mK, specific heat equal to c=1,88 KJ/Kg K, steam penetration resistance coefficient μ=22,6 and the reaction to fire class A2-fl -s1, according to the standard EN 13501-1. The panel sizes correspond to ... mm for a thickness equal to ... mm. The wood used in the processing of the panel comes from FSC controlled forests with reforestation cycles and it is pressed with water and hydraulic binders (Portland cement) with high cold compression ratios.

AVAILABLE DIMENSIONS AND THICKNESSES BetonWood

Thickness (mm)	Dimensions (mm)	
8	3200 x 1250	2800 x 1250
10	3200 x 1250	2800 x 1250
12	3200 x 1250	2800 x 1250
14	3200 x 1250	2800 x 1250
16	3200 x 1250	2800 x 1250
18	3200 x 1250	2800 x 1250
20	3200 x 1250	2800 x 1250
24	3200 x 1250	2800 x 1250
28	3200 x 1250	2800 x 1250
40	3200 x 1250	2800 x 1250

The BetonWood cement bonded particle boards are available also in the Sanded version, these panels comes from standard panels appropriately smoothed and calibrated with appropriate machinery, to bring the thickness of the panels to lower dimensional tolerances. These particular panels have the characteristic of being aesthetically pleasing, as the wood contained inside stands out in the upper and lower part, compared to the standard panel, which has the particularity of having a totally cement-like appearance.

The BetonWood cement bonded particle boards can be processed on the edges in order to facilitate the joints during installation:

- stepped edge for thicknesses less than 14 mm
- tongue and groove edge for thicknesses greater than 18 mm

STORAGE/TRANSPORT BetonWood

Dimension 3200 x 1250 (mm)

Thickness (mm)	m³ / Panel	Weight(Kg/m²)	Weight/Panel	Panels/ Pallet
8	0,032	10,8	43,2	70
10	0,040	13,5	54,0	60
12	0,048	16,2	64,8	50
14	0,056	18,9	75,6	40
16	0,064	21,6	86,4	35
18	0,072	24,3	97,2	30
20	0,080	27,0	108,0	30
24	0,096	32,4	129,6	25
28	0,112	37,8	151,2	20
40	0,160	54,0	216,0	15

Dimension 2800 x 1250 (mm)

Thickness (mm)	m³ / Panel	Weight(Kg/m²)	Weight/Panel	Panels/ Pallet
8	0,028	10,8	37,8	70
10	0,035	13,5	47,3	60
12	0,042	16,2	56,7	50
14	0,049	18,9	66,2	40
16	0,056	21,6	75,6	35
18	0,063	24,3	85,1	30
20	0,070	27,0	94,5	30
24	0,084	32,4	113,4	25
28	0,098	37,8	132,3	20
40	0,140	54,0	189,0	15

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COMBINATIONS

Available in combination with other materials, we can obtain coupled products specific for multiple-use in green building:

- BetonEco for thermo-acoustic insulation, combines the BetonWood panel to a layer of wood wool;
- BetonCork for thermo-acoustic insulation, combines the BetonWood panel to a layer of breathable and ecological cork;
- BetonKenaf for thermo-acoustic insulation, combines the BetonWood panel to a layer of vegetal fiber;
- BetonStyr for thermal insulation, unisce al combines the BetonWood panel to a layer of extruded polystyrene;
- BetonWall self-supporting sandwich block for dry dividing walls, combines two BetonWood panels and a layer of mineralized wood-wool inside them;
- BetonStone exterior or interior finishes, combines the panel BetonWood with a natural stone cladding;
- BetonRadiant for insulation of floor heating systems, available in the standard version or with bonded insulation.

APPLICATIONS

The installation is closely linked to the type of use of the panel according to what will be appropriate to adopt the most suitable method of application.

The BetonWood N cement bonded particle boards are also:

- outdoor resistant
- antifreeze
- free from formaldehyde, asbestos

STORAGE/TRANSPORT BetonWood N

Dimension 1220 x 520 (mm)

Thickness (mm)	m^3 / Panel	Weight(Kg/m^2)	Weight/Panel	Panels/Pallet
20	0,63	27,0	17,0	56

- delivering the material is normally done by trucks, considering the high mass of the pallet is advisable that the recipient has suitable equipment and mechanical lifting devices with minimal flow rates of 35-40 quintals per unloading of the goods;
- it is advisable to deposit the panels overlapping one another and maintain them in a horizontal position, with supports with a square section and a minimum of 80 cm spacing;
- the transport of the individual sheets must take place never in horizontal way;
- avoid direct exposure to sunlight and adequately cover the material to prevent an excessive accumulation of dust;
- the pallets are provided with a top plate of protection, which must be repositioned from time to time above the other tables and ballasted superiorly to prevent distortion of the plates below it.

TECHNICAL CHARACTERISTICS BetonWood

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	l/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

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CERTIFICATIONS

BetonWood cement bonded particle board is CE certified according to the standard UNI EN 13501-2.

STRUCTURE CHARACTERISTICS panels loading power BetonWood

		Uniformly distributed load (kN/m²)							
		1,00	1,50	2,00	2,50	3,00	4,00	5,00	6,00
		Supporting space (cm)							
Thickness (mm)	8	36	30	26	24	22	19	17	16
	10	45	37	33	29	27	24	21	20
	12	55	46	40	36	33	29	26	24
	14	63	52	46	41	38	33	30	27
	16	72	60	53	48	44	38	34	31
	18	80	67	59	53	49	43	39	35
	20	88	74	65	59	54	48	43	39
	24	103	88	78	70	65	57	51	47
	28	118	101	89	81	75	66	59	51
	40	178	148	130	117	108	95	85	79

ACOUSTIC INSULATION BetonWood

		Soundproofing power (dB)					
		100	200	400	800	1600	3150
		Frequency (hz)					
Thickness (mm)	8	12,1	16,9	21,9	27,2	32,5	37,8
	10	13,7	18,6	23,7	29,0	34,4	39,7
	12	14,6	19,6	24,7	30,0	35,5	40,8
	14	15,8	20,8	26,0	31,4	36,8	42,2
	16	16,9	21,9	27,2	32,5	38,0	43,3
	18	17,5	22,6	27,8	33,2	38,7	44,0
	20	18,3	23,5	28,7	34,1	39,6	45,0
	24	19,6	24,7	30,0	35,5	40,9	46,4
	28	20,8	26,0	31,4	36,8	42,3	47,7
	40	23,5	28,7	34,1	39,6	45,1	50,6

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