

# BetonWood

High density cement bonded particle boards installed on wood frame structure



## Installation Instruction



### | PRODUCT DESCRIPTION

BetonWood is a cement bonded particle board with high density  $1350 \text{ kg/m}^3$  and high compression resistance (9000 kPa). It is realized in Portland cement and wood fibers, this panel guarantee an excellent solution for interventions aimed at achieving high levels of thermal displacement and acoustic abatements, thanks to its high density that makes it suitable also for self-supporting dry screeds, walls, counter-walls, radiant floors and stiffening structures. BetonWood is fire resistant and it is classified A2-fl-s1.

### | BETONWOOD WALL SYSTEM ON WOOD FRAME STRUCTURE

#### | PHASE 1 - INTERAXLE SPACING

Lay BetonWood cement bonded particle boards on the interaxle structure. The interaxle spacing'll depends on the panel's dimensions. The possible interaxles are indicates in the table below.

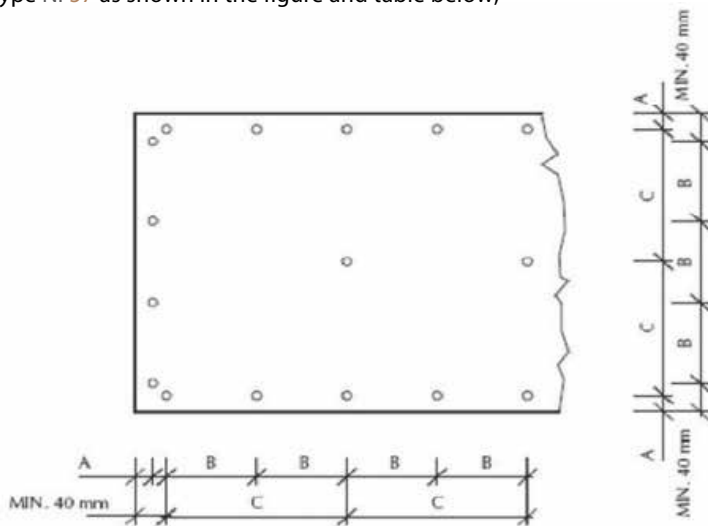
	Interaxle spacing (mm)		
Panel's dimensions (mm)	613	516	509
1012 x 515	.		
1025 x 515	.		
1220 x 515		.	
1220 x 520			.



## | PHASE 2 - PANEL'S FIXING

Lay and fix the BetonWood panels following the steps listed here:

- lay the BetonWood panels with staggered joints;
- fix the BetonWood panels with the quantity of self-countersunk screws type NF57 as shown in the figure and table below;



Panel thickness (mm)	Fixing points spacing (mm)		
	from edge A	from edge B	from edge C
8, 10, 12, 14	20	200	400
16, 18, 20	25	300	600
22, 24, 28	25	400	800
40	40	600	1200

## NF57

### SELF-COUNTERSUNK SCREWS



The self-countersunk screws for cement bonded particle boards are expressly designed to work in outdoor environments coupled with cement bonded particle boards and the particular surface treatment makes them more resistant to aggressive agents than standard screws.

- the figure and the table on the side show the distance needed to fix the BetonWood panels according to their thickness;
- the fixing points spacing of the NF57 screws from the edges of BetonWood panels must be respected in such a way as to avoid the excessive weakening of the cross section;
- it is recommended to use the fixing with self-countersunk screws NF57 for BetonWood panels with a thickness bigger than 16 mm;
- it is necessary to use corrosion resistant screws;
- adequate support must be provided for securing the BetonWood panels. It can be built with any assembly method.



- use self-countersunk screws type NF57;
- make sure to keep a distance of about 3 mm in the longitudinal and transverse direction between a BetonWood panel and the other. For simplicity, we recommend using a screw as a spacer;
- use screwdrivers with friction set to medium values to tighten the screws.

#### | PHASE 3 - JOINT REINFORCEMENT

When the fixing phase of the BetonWood cement bonded particle boards on the wood frame structure is completed, it is possible to proceed with the reinforcement of the joints (3 mm) between one panel and the other with the specific fiber glass mesh cover tape BetonNet Strip (which we see in the figure here beside).

### BetonNet Strip



GLASS FIBER STRIP  
JOINT PROTECTORS

Adhesive fiberglass mesh tape used as a joint cover near the joints between cement walls. Its use avoids the appearance of superficial cracks.



#### | PHASE 4 - GROUTING THE JOINTS

### Mapelastic



BICOMPONENT  
CEMENTITIOUS  
MORTAR

Mapelastic is used to make waterproof and protective coatings with high flexibility. Seal capillary cracks already present in the background. It is supplied in two pre-dosed components that must be mixed without adding water or other ingredients.

#### | PHASE 5 - JOINT REINFORCEMENT

Please pay close attention to the junctions between the BetonWood cement bonded particle boards near the building components on the wall (doors, windows, door frames, expansion joints, corners, etc.) and use the appropriate accessories, which we recommend, in order of a perfect execution (continues on the next page):





- cover the edges with specific aluminum profile **Betoncorner Alu** type to reinforce the corners;
- cover the edges of windows and doors with the preformed accessory profile **Betoncorner Shape** type;
- the **BetonWood** system on metal frame structure, installed on the internal side of the building, does not need thermal expansion joints, but if they are present in the building these must be respected.

#### | PHASE 6 - REINFORCEMENT PREPARATION

Before performing the skimming with a warp-proof fiberglass net with density 360 gr/m<sup>2</sup> **BetonNet Glass 360** (which we see in the figure alongside), it is advisable to prepare the support:

- check the surface planarity of the system and if necessary intervene using an orbital sander;
- moisten and clean the **BetonWood** cement bonded particle boards with a damp cloth so as to eliminate the super-fine powders which would make it difficult to keep the net in good condition.

#### | PHASE 7 - INCREASE THE MECHANICAL RESISTANCE

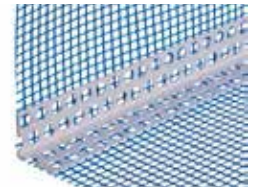
Once the joints have been grouted, the electrical boxes have been built, other accessory workings as described in PHASE 5, and a careful cleaning of the surfaces to be reinforced, proceed with the drafting of the network.



Starting from top to bottom, the high-density **BetonNet Glass 360** glass fiber mesh is unrolled (360 gr/m<sup>2</sup>); the overlap of the nets must be about 10 cm.

### Betoncorner Alu

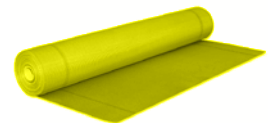
ALUMINUM CORNER WITH NET



Corner profile with glass fiber net density 165 gr/mq certified ETAG004 reinforced from the inside with aluminum profile forming a corner of 90°. Used for reinforcement of angles, sharp edges. Resistant to sliding, alkali and UV rays.

### BetonNet Glass 360

GLASS FIBER NET 360 gr/m<sup>2</sup>



Run-proof and alkali-resistant fiberglass net. It allows to increase the mechanical resistance, reducing the risk of damage and micro-cracking due to settling and earthquakes

### Mapetherm AR1

BONDING AND SKIMMING LAYER



Monocomponent cementitious mortar for bonding and skimming thermal insulation panels and for insulation systems. It is a gray powder, composed of cement, sand of selected fine particle size.



The buildings meet the quality standards of thermal, acoustic and mechanical resistance in Europe and are made with CE certified materials.

The **BetonWood** cement bonded particle boards, in addition to a high mechanical resistance, also have excellent fire resistance positioning in class A2-fl-s1.

#### | PHASE 8 - SKIMMING LAYER

Prepare the skimming support by applying an appropriate primer if necessary. Apply the **MapeTherm AR1** adhesive / leveling agent following the instructions:

- do not add to the water mixture or alter the mixing ratio;
- temperature of use +5°C ÷ +40°C;
- do not apply in the presence of direct irradiation in the central hours of the day or in the event of strong wind or heavy rain;
- do not apply on wet surfaces, ice creams, in the thawing phase or with risk of freezing in the next 24 hours of application.

#### | PHASE 9 - SKIMMING LAYER

Apply the second coat of adhesive / leveling compound **MapeTherm AR1** type according to secondo the indications of PHASE 8. It is advisable not to exceed the thickness of 3/4 mm for the smoothing layer.

#### | PHASE 10 - FINISHING

The whitening phase is to be carried out only after the armed skimming has set, the curing time varies from 1 to 3 days and is however dependent on climatic conditions (we recommend the use of a siloxane product).

BETONWOOD Srl

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

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

info@betonwood.com  
www.betonwood.com

BTW-IP R.18.9

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