

HPB TECHNOLOGY CO., LTD.

Green Building Material
**Wood
Mineralized
Board**

LIGHT WEIGHT WALL / PARTITION / ROOF SYSTEM





Introduction

The material is derived from fir, after cutting, slicing, then "mineralize" it (Means after special process together with additive can eliminate the wood nature and become ore-like material). Also stir with cement, and then press it via the mode to make it has the function of fire proof, acid resisting, anti-corrosive, won't have shape changing, against humidity, low heat conducting, high sound absorption, a kind of everlasting material.

The fir grows up rapidly, easily to get it, actually it belongs to a man-made plantation which was encouraged and arranged to be planted by the government (Not those type of forest prohibiting on cutting and chopping timber), it will take only 15 years from seeding to growing up for being used. Can be repeatedly grows to match with world advocated concept of "Green Building". The very little left part of sapwood after cutting can be re-used as filler for the light concrete to reach the goal of zero garbage.

Dimension

For Light Weight Wall and Roof System:

Model No.	Weight (kg/pc)	Dimension (mm)	Loaded Quantity	
			pcs/20' Cntr.	pcs/40' Cntr.
WMBS-15	10~12	1800 × 900 × 15	804	1,742
WMBS-25	20~22	1800 × 900 × 25	480	1,040
WMBS-45	26~30	1800 × 900 × 45	264	572

For Acoustic Wall and Ceiling:

Model No.	Weight (kg/pc)	Dimension (mm)	Loaded Quantity	
			pcs/20' Cntr.	pcs/40' Cntr.
WMBA-15	2.3~2.7	600 × 600 × 15	3,618	8,040
WMBA-25	4.5~4.9	600 × 600 × 25	2,160	4,800
WMBA-45	5.8~6.7	600 × 600 × 45	1,188	2,640

Features



Fire Resistance

Above 2 hours fire testing is approved for wall system with incombustibility grade 2 materials and no toxic gas released.



Durability

After the chemical processing together with additive can eliminate the nature of the wood and become ore-like material. Cement is also derived from the mineral, therefore both with same nature. So don't have to worry about shape changing problems no matter in the environment of hot or cold even humid.



High Strength

Compress strength 10 kgf/cm²; Max. load of static bending strength 62 kgf and max. Load 195 kg



Heat Insulation

With high thermal resistance which is approved to be the best heat insulation material, reducing the electricity cost for air-conditioner or heater.



Fire Expansion Control

Passing 2 hours fire expansion control testing, with its super low thermal conductivity modulus and high heat broken coefficient, can efficiently control the fire and prevent expanding to other area, diminish the damage.



Sound Absorption

According to ASTM C423 (CNS A3165) test, the result of NRC is 0.65. It was approved to be the best sound absorbing building material, debase the noise.



Nimble Type

Can easily assemble the board or amend any sizes according to current situation at the construction site. Its maneuverability is as high as by means of wood working methods. The wall can obtain RC wall sense after finishing with cement mortar or applying with cement fiber board and then can freely choose any kind of surface adhesive materials for decoration.



Time & Labor Saving

It takes very short time from material preparing to assemble at work site, can shorten the period of construction, cut down management fee and reduce bank interest burden. Each person per day can finish 30 m² for the board, but only 8 m² for the brick.



Shock Proof

The board is consist of irregular mineralized wood pieces with features of strong tenacity & anti-resistance, can prevent people being hurt by wall crack and crashes made by strong shock.



Light Weight

Reduce the consumption of steel bar, meanwhile cut down the cost. The inner wall is 90 kg/m², the outside wall is 130 kg/m², brick wall is 240 kg/m², RC wall is 300 kg/m².



Extend Space

Extend 4% space more than traditional brick wall, the thickness of wood mineralized board light wall is 9 cm, brick wall after finishing is 15 cm.



Vivid Style

Match with any structure material; meet the requirements for any style building. Like: Chinese style pagoda, round roofing, canopy... etc.

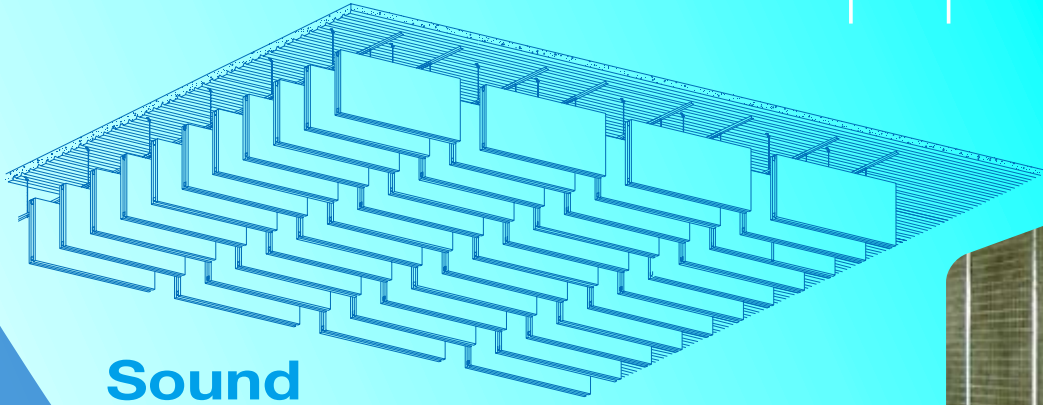
Technical Data

SUBJECT	THICKNESS			REMARKS
	15mm	25mm	45mm	
Specific Density (kg/m ³)	< 500			ASTM D1037-99 Modified
Compressive Strength (kg/cm ²)	9	10	10	ASTM D1037-99 Modified
Max. Load of Static Bending (kgf)	15	41	62	ASTM D1037-99 Modified
Falling Ball Impact Test (mm)	625	900	1275	ASTM D1037-99 Modified (Impact Resistance)
Thermal Conductivity (W/m.K)	0.09	0.08	0.08	ASTM C518-04
Thermal Resistance (m ² .K/W)	0.29	0.41	0.56	ASTM C518-04
Fire Resistance	2 Hours			CNS 12514/A3305 (no toxic gas released)
Incombustibility	2 nd Grade			CNS 6532 (2003)
Sound Absorption	NRC = 0.65			ASTM C423
Acid Resistance	No chap, No color changed			Immersed in 5% Acetic acid after 24 hours
Chemical Resistance	No Damage			ASTM D543-06, 5%NaOH, 5%KOH, 5%Na ₂ CO ₃
Mold Resistance	Yes			ASTM G-21-96
TVOC (mg/m ² .hr)	0.106			ASTM D5116-97 (<0.19 mg/m ² .hr)
Formaldehyde HCHO (mg/m ² .hr)	No			ASTM D5116-97 (<0.08 mg/m ² .hr)
Percentage change of Dimension (%)	Longitudinal: 0.29/Transverse: 0.09			ASTM D570-98 Immersion in water for 23°C, 72 hrs

Comparison Chart Of Various Partition Materials

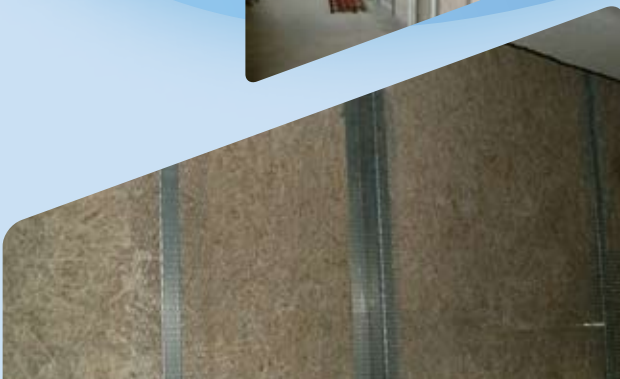
Item	Wood Mineralized Board	1/2B Red Brick Wall	Cement Fiber Board	White Brick Wall	RC Wall	Steel Net Wall	3D Wall Stuffing Polyfoam	Concrete wall	Grouting wall
Weight	85-90 kg/m ²	240 kg/m ²	90 kg/m ²	85 kg/m ²	290 kg/m ²	250 kg/m ²	80 kg/m ²	90 kg/m ²	110 kg/m ²
Wall Thickness	9 cm	13-15 cm	10 cm	11 cm	13 cm	12 cm	10 cm	10 cm	10 cm
Wall Surface Smooth	Good	Not easy to control	Difficult to control	Not easy to control	Not easy to control	Not easy to control	Good	Not easy to control	Not easy to control
Fire Proof	2 Hours	1 Hour	1 Hour	2 Hours	1 Hour	1 Hour	1 Hour	1 Hour	1 Hour
Compressive Strength	> 9 kgf/cm ²	Strong	Strong	Weak	Strong	Strong	Weak	Strong	Strong
Max. Load of Static Bending	62 kgf	Weak	Weak	Weak	Weak	Weak	Strong	Weak	Weak
Sound Absorption	High (NRC ≥ 0.65)	Weak	Weak	O.K.	Weak	Weak	Weak	O.K.	Weak
Thermal Conductivity	Super Low < 0.09 W/m.K	High	High	High	High	High	High	High	High
Anti Humidity	Good	Good	O.K.	Weak	Good	Good	Good	Good	Good
Hanging Ability	O.K.	O.K.	O.K.	Not Allowed	O.K.	O.K.	Not Allowed	Not Allowed	O.K.
Anti Shock	Good	Weak	O.K.	Weak	Weak	Weak	Good	Weak	Weak
Finishing	Easy	Easy	Difficult	Difficult	Not Easy	Not Easy	Difficult	Difficult	Difficult
Working Speed	30 m ² /day/person	10 m ² /day/person	20 m ² /day/person	20 m ² /day/person	15 m ² /day/person	20 m ² /day/person	20 m ² /day/person	15 m ² /day/person	15 m ² /day/person
Empty wall	Easy	Difficult	Difficult	Difficult	Difficult	Difficult	Easy	Difficult	Difficult
Construction Method	Semi-dry	Wet	Semi-dry	Semi-dry	Wet	Wet	Semi-dry	Dry	Wet
Remarks	Wood working	Heavy pollution	Wood board and inner material can not match completely	Wall will turn yellow when absorbing humidity from the air	Heavy pollution at work site	Pollution at work site	Not easy to cut	Not easy to cut	10 cm to the ceiling can not have grouting

Application

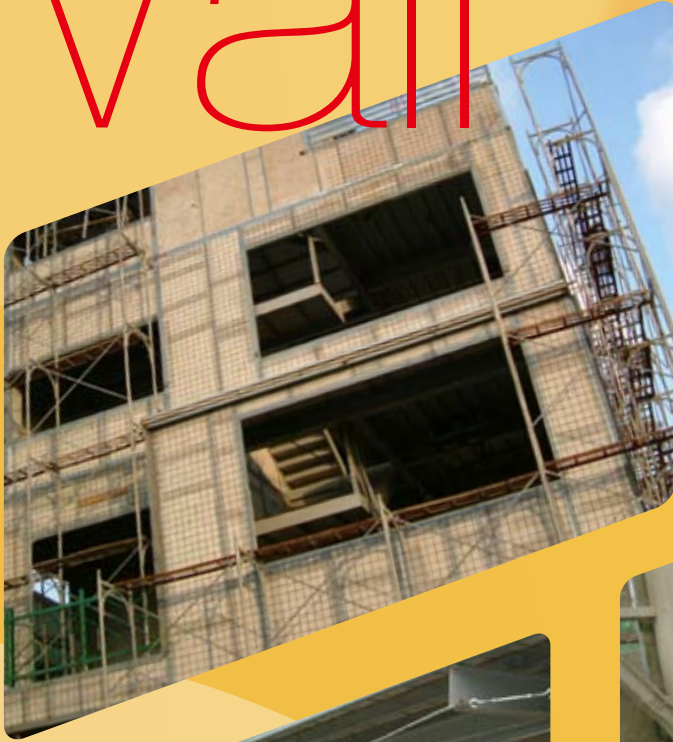


**Sound
Absorption**

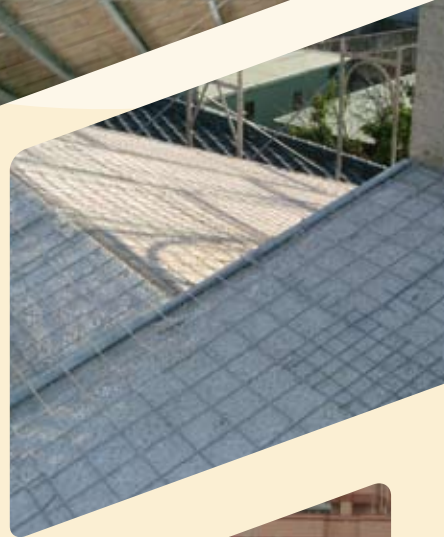
Interior Wall



Exterior Wall



Roof



Safe / Healthy / Economical / Sustainable / Environmental



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