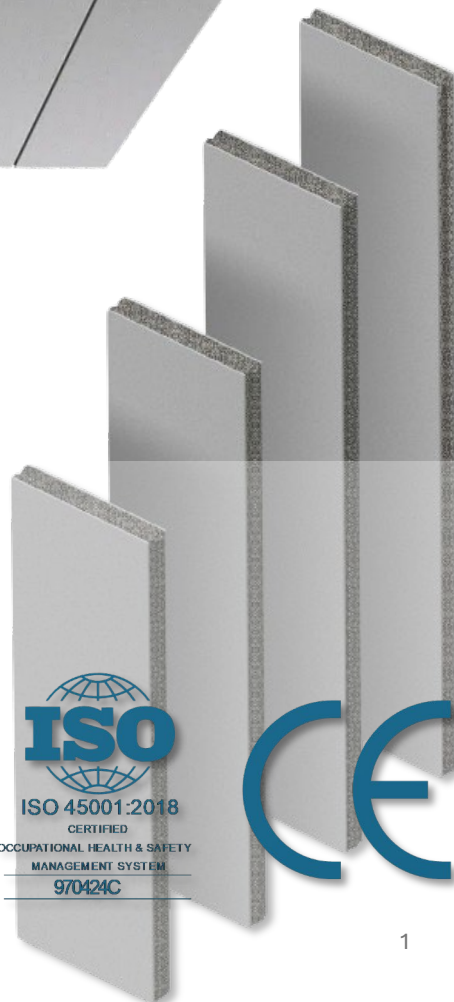
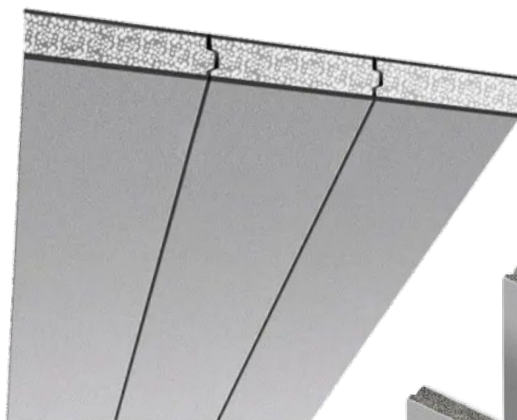
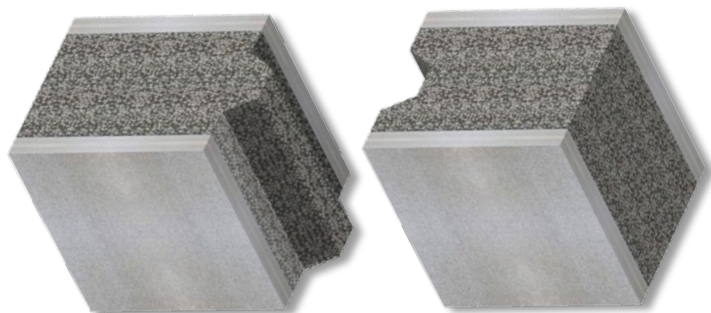


Compact Wall



Mada Trade co.



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CERTIFIED
QUALITY MANAGEMENT SYSTEM
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ISO 14001:2015
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ENVIRONMENTAL MANAGEMENT SYSTEM
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OCCUPATIONAL HEALTH & SAFETY
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Compact Wall

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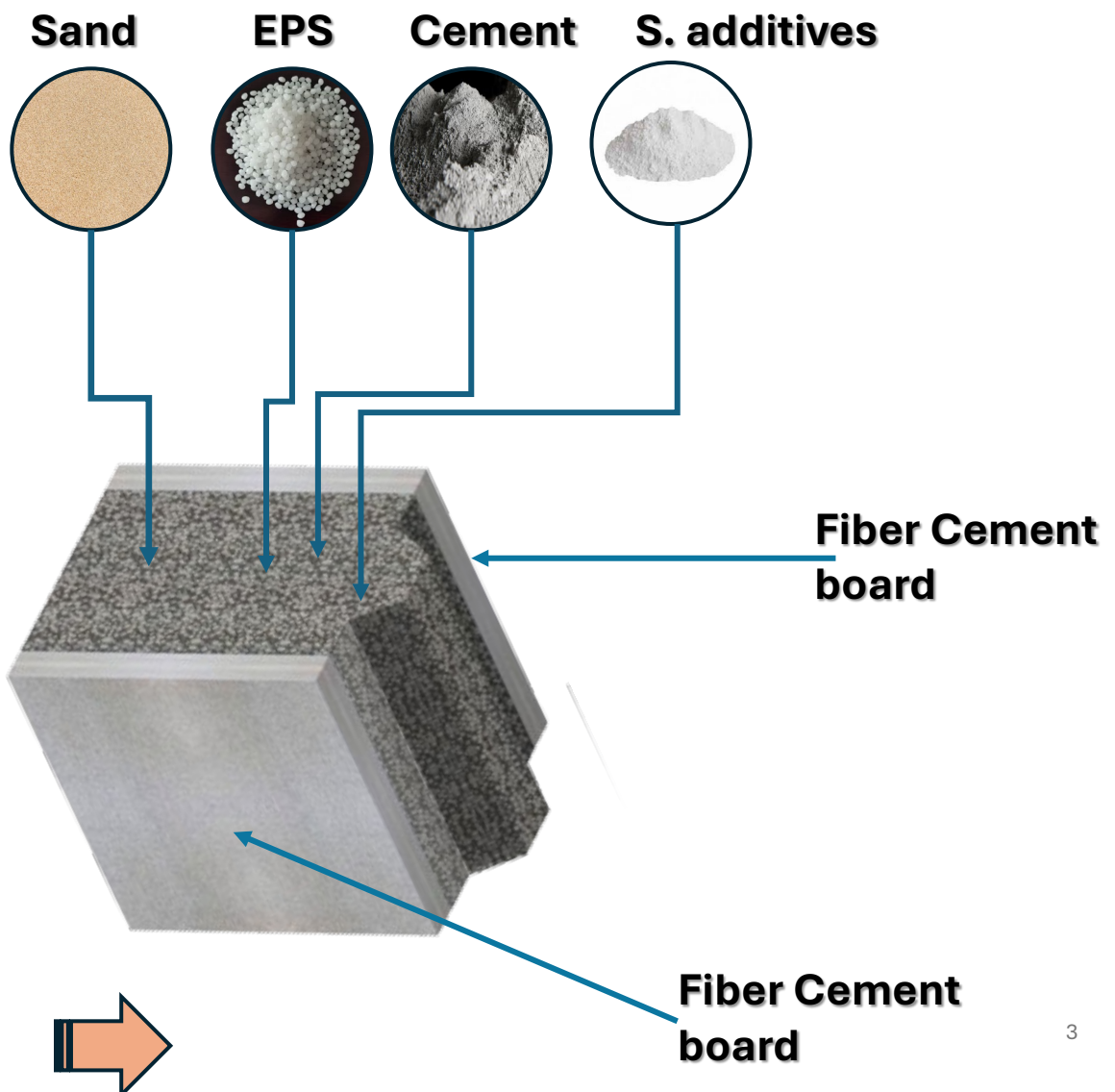
1. ABOUT Compact wall
2. Panel Composition
3. APPLICATION
4. Features
5. FINISHING
6. COST SAVING
7. ADVANTAGES
8. TECHNICAL SPECIFICATIONS
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11. Is EPS cement sandwich panel safe?
12. What Makes EPS Cement Sandwich Panels Ideal for Seismic Zones?
13. Can EPS Sandwich Panel be cut?
14. EXPORT PACKING
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◆ Compact Wall

□ ABOUT Compact wall

Compact wall is EPS Cement Sandwich Panel

EPS cement sandwich panel is an innovation of building construction. It is made of eco-friendly material. It consists of a lightweight cement EPS core sandwiched between two layers of fiber cement boards. Each panel provides thermal insulation. The core is EPS (expanded polystyrene), sand, cement, and surface is fiber cement board, compounded by one time, has many advantages.



Compact Wall

PANEL COMPOSITION

- Two layers of fiber cement boards with a thickness of 5 mm.
- Lightweight cement EPS core made of Portland Cement, additives, and expanded polystyrene. The core's density can vary according to the project's requirements.

APPLICATION

What separates compact wall from other types of building products and materials is the flexibility it provides. The method and technology that goes into manufacturing the panels makes them suitable for all types of wall applications. It is the ideal solution for interior and exterior wall systems, for single or multi-story buildings.

- Commercial buildings
- Hospitals
- Universities and schools
- Hotels
- Large scale residential projects
- Private homes
- Office spaces
- Industrial warehouses
- and manufacturing plants
- Airports
- High-rise buildings



Compact Wall

□ FEATURES



Sound insulation



Thermal insulation



Fire resistant



Moisture resistant



Durable



Energy efficient



Lightweight



Cost efficient



Eco-friendly



User-friendly



Time efficient

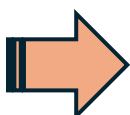


Premium finishing attributes



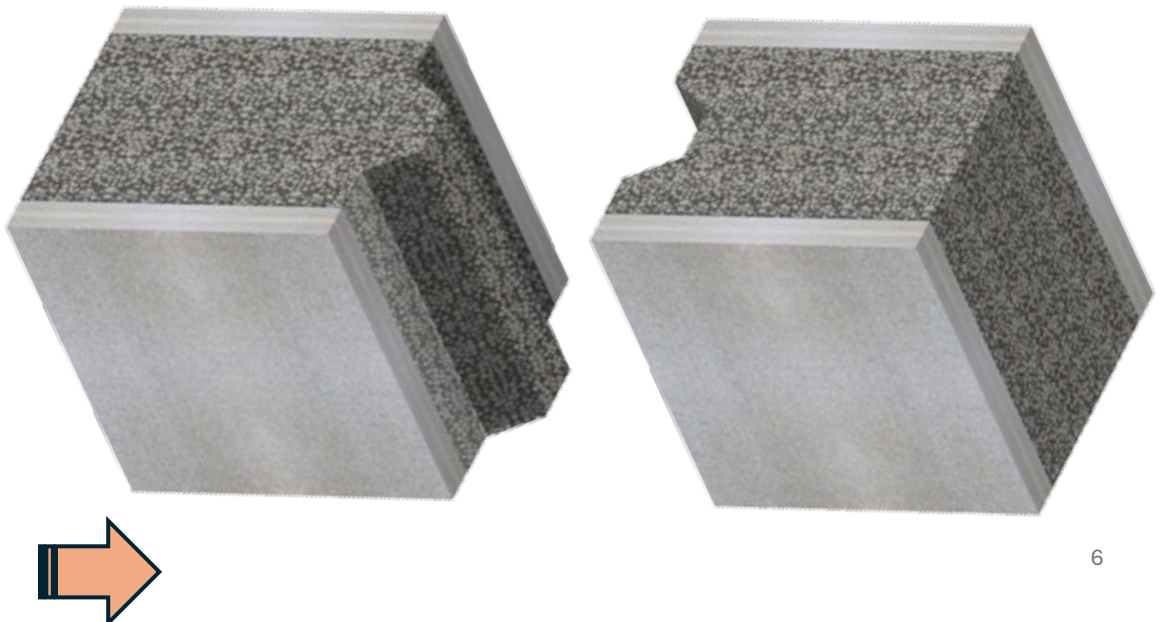
Low Carbon Print

- **User Friendly and Flexible Handling:** Compact wall panels are lightweight, easy to cut and lift. Additionally, they are supplied in a range of different lengths to fit the ceiling height.
- **Eco-Friendly:** Manufactured using the latest technologies for a reduced environmental impact. Compact wall panels greatly reduce waste on site since they provide the ability to re-use all previously cut parts in other sections of the wall.



◆ Compact Wall

- **Fire & Water Resistant:** Compact wall panels are non-flammable with Class A classification for Fire rating. Compact wall's 100 mm thick panels are certified for two hours of fire resistance.
- **Thermal Insulation:** Compact wall has ideal thermal insulation characteristics for all weather conditions with U-values reaching up to $0.2 \text{ W/m}^2 \cdot \text{K}$ (cavity system). The system stabilizes indoor temperatures by reducing heat losses and as a result costs associated with heating and cooling.
- **Sound Insulation:** The Compact wall system provides high sound insulation reaching a sound transmission class up to twice the value provided by conventional wall systems for the same thickness. For instance, the sound reduction provided by the systems can reach 60 dB.



◆ Compact Wall

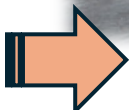
□ FINISHING

Considering the design of the panel, its flat surface, and the system's architecture, using Compact wall will eliminate on-site human error.

Eliminating the need to plaster is one of the main assets of Compact wall.

The smooth surface of the fiber cement board allows for direct paint application, removing the cost and time spent on plastering.

The system has a higher output capacity than traditional systems and can support all types of finishes such as marble, ceramics or stones in addition to being able to withstand great loads and heavy attachments. For values and limits see test results.



Compact Wall

COST SAVING

- Weight reduction, up to 60% lighter than traditional blockwork, meaning fewer loads to consider for structural design, therefore fewer structural components, and materials to be used
- Elimination of plastering
- Reduction in energy consumption due to the high thermal efficiency
- Reduction in labor
- Significant reduction in waste
- Faster project completion time
- Transport efficiency



Compact Wall

ADVANTAGES

1. Energy-saving
2. Light weight---1/6 of traditional brick
3. environment-friendly --- not asbestos
4. Area-saving --- save 4 m² / 100 m² (compare with tradition building materials)
5. Waterproof and damp proof
6. Fire-proof --- 4 hours 1000 degree.
7. Sound-insulation .
8. Best hanging force---single point hanging strength 50kg, embedded 150kg
9. Anti-seismic and impact resistance
10. Heat Insultation and preservation
11. Thermal insulation
12. Fast easy construction, Low Labor: two experienced workers 50-80 m²/day
13. Long life usage: 70 years





Compact Wall

❑ AIR-TIGHT BUILDING

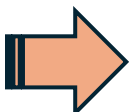
The expanded polystyrene (EPS) acts as a thermal insulation layer. This maintains the room's temperature by reducing the need to heat or cool the space for a prolonged time, consequently saving operational costs.

❑ FASTER INSTALLATION

Construction using Compact wall panels contributes to a much faster installation and a significant reduction in manpower. The ability to paint without plastering allows for much faster construction schedules, up to 8x faster than traditional methods.

❑ ENVIRONMENTAL CHARACTERISTICS

- Sustainable
- Manufactured using environmentally-friendly practices
- No toxic fumes
- Low carbon footprint
- Asbestos Free
- Free from odors
- VOC content complies with ASTM requirements
- Recyclable





Compact Wall

□ TECHNICAL SPECIFICATIONS

SPECS	PROPERTIES	UNIT	AVERAGE RANGE
Dimension	Thickness	mm	75, 100, 150, 200
Physical properties	Compressive strength (average values)	MPA	up to 7.5*
	Density	Kg/m ³	600-725 (+/- 5%)
	Cement Board thickness	mm	4.5
	U-value	W/m ² K	up to 0.2*
	Pullout	N	up to 2400
	Fire rating	Hour	Up to 4
	Sound Insulation	dB	up to 60*
	Water absorption	%	13.5*
Durability properties	Freeze resistance		Pass
	Heat/Rain resistance		Pass
	Soak dry resistance		Pass

* These values will depend on the parameters of the panel and the system in which it is installed.

□ STANDARDS

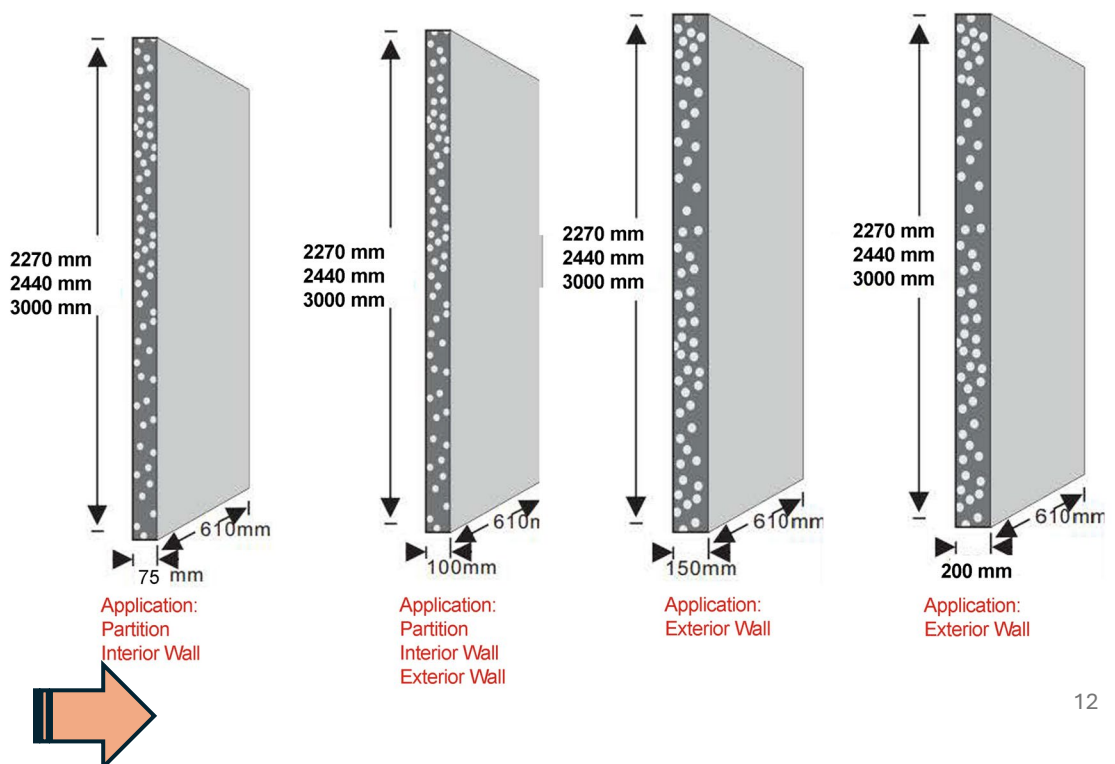
PROPERTIES	CODE
COMPRESSIVE STRENGTH	BS EN 12390-3:2009
TENSILE STRENGTH	BS EN 12390-6:2000
FLEXURAL STRENGTH	BS EN 12390-5:2000
DENSITY	BS EN 12390-7:2009
THERMAL TRANSMISSION PROPERTIES	ASTM C-518:2010
FIRE RATING	ASTM E84-12 BS476 EN 1364 ASTM E119
SOUND INSULATION	ASTM E90-09 ASTM E413:04 ASTM E423:09a BS EN ISO 140-3:1995
WATER RESISTANCE	ASTM C1186 BS EN 520
STRENGTH AND TOUGHNESS	BS 5234-2:1992



Compact Wall

PERFORMANCE COMPARISON

SPECIFICATIONS	DURAWALL PANELS	HOLLOW BLOCK PLASTER FINISHED	AAC BLOCKS
Compressive strength (N/mm ²)	7.5	1.3 - 3.5	3.0 - 4.0
Pullout (N)	up to 2400	Up to 710	up to 320
Density (Kg/m ³)	400 - 1000	1400 - 1900	400 - 1000
U-value (W/mK)	up to 0.2	2.3 - 2.8	0.3 - 0.4
Fire rating	Up to 4h	Varies	0-4 hours
STC rating (dB)	up to 60	up to 46	up to 39
Joint capacity (kN-m)	up to 4.66	2 - 2.5	2 - 2.5
Panel moment capacity (kN-m)	up to 2.96	N/A	N/A
Panel moment capacity (side) (kN-m)	up to 7.15	N/A	N/A
Axial load capacity (kN/m)	up to 283	N/A	N/A
Plaster requirment	Not required	Required	Required
Wet areas	Acceptable	Acceptable	Acceptable



Compact Wall

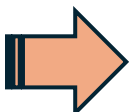
☐ TIME COMPARISON

Comparison of the time taken to build a finished wall (2 sides of plaster) ready to paint on both sides.

- Wall area = 16m² (as per BS 5628-1:2005)
- Length = 4.5m
- Height = 3.5m
- 2 points lateral support; 1 existing and 1 to be installed by the contractor



COMPACTWALL 600 x 3000 x 100 mm (W X L X T) TEAM OF 6 SKILLED WORKERS		HOLLOW BLOCK 200 x 400 x 100 mm TEAM OF 6 SKILLED WORKERS	
STEP	TIME (hours)	STEP	TIME (hours)
Location marking	0.50	Location marking	0.50
Bottom and top track cutting and setting	1.00	Mortar mixing and setting out	1.00
Installing the first panel with dowel bars	0.50	Block laying	48.00
Installing the vertical panels	1.00	Steel fixing for column support	2.00
Measuring and cutting of horizontal panels	1.00	Mixing and casting of column	1.50
Installing the horizontal panels	1.00	Curing time	24.00
Closing of head track	0.25	Manual plastering	48.00
Closing of joints	1.00	Curing time	48.00
Curing time	24.00		
Finishing of joints	1.00		
Note:		Note:	
Panels only require mobile scaffolding and are not restricted by height		Walls using blocks cannot be built higher than 6 rows without the mortar setting. At a height higher than 1.5m rigid scaffolding is required. COMPACTWALL assumes the scaffolding and the first 6 rows can be done in 24 hours.	
Total using Dowels / hrs	31.25		173.00



Compact Wall

Is EPS cement sandwich panel safe?

Yes, EPS cement sandwich panels are generally considered safe for use in construction,

Several factors contribute to EPS cement sandwich panels safety:

1. Fire Resistance

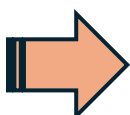
Cement Facings: The outer layers of cement or fiber-reinforced boards offer good fire resistance, helping to prevent the spread of fire. This makes them suitable for use in buildings where fire safety is a critical concern.

Modified EPS Core: Some panels use fire-retardant-treated EPS cores to further enhance their fire resistance, reducing the risk of ignition and the spread of flames.

2. Structural Integrity

High Strength: EPS cement sandwich panels are engineered to be strong and durable, providing good structural integrity for both load-bearing and non-load-bearing applications. They can withstand various loads and stresses, ensuring the stability and safety of buildings.

Impact Resistance: The cement outer layers provide good resistance to impacts, protecting the panels from damage and maintaining the structural safety of the building.





Compact Wall

3. **Weather Resistance**

Moisture Resistance: The panels are designed to resist moisture infiltration, which helps prevent Mold growth and water damage. This is important for maintaining indoor air quality and the overall health and safety of occupants.

Durability: EPS cement sandwich panels can withstand a range of weather conditions, including extreme temperatures, wind, and rain, contributing to the long-term safety and resilience of buildings.

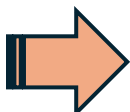
4. **Sound Insulation**

Acoustic Properties: The combination of EPS core and cement facings provides good sound insulation, which can contribute to a quieter and more comfortable indoor environment, reducing noise pollution and enhancing occupant well-being.

5. **Environmental Safety**

Non-Toxic Materials: The materials used in EPS cement sandwich panels are generally non-toxic and safe for indoor use. EPS does not emit harmful gases under normal conditions, making it safe for occupants.

Mold and Mildew Resistance: The panels are resistant to mold and mildew, contributing to a healthier indoor environment and reducing the risk of respiratory issues for occupants.





Compact Wall

6. Compliance with Building Codes

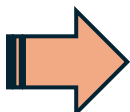
Standards and Certifications: Reputable manufacturers produce EPS cement sandwich panels in compliance with local and international building codes and standards. These panels are often tested for fire resistance, structural performance, and other safety criteria to ensure they meet required safety standards.

7. Installation Safety

Ease of Handling: The lightweight nature of the panels makes them easier to handle and install, reducing the risk of accidents during construction.

Proper Installation: When installed correctly by trained professionals following manufacturer guidelines, EPS cement sandwich panels can provide a safe and secure building envelope.

EPS cement sandwich panels are safe for use in various building applications, offering fire resistance, structural integrity, weather resistance, and sound insulation. As with any construction material, the safety of EPS cement sandwich panels depends on proper manufacturing, installation, and adherence to relevant building codes and standards.



Compact Wall

What Makes EPS Cement Sandwich Panels Ideal for Seismic Zones?



EARTHQUAKE

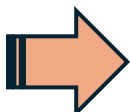
EPS cement sandwich panels are considered ideal for seismic zones due to their unique combination of properties that enhance the safety and performance of buildings during earthquakes.

Here are the key reasons why these panels are suitable for seismic areas:

1. **Lightweight Construction**

Reduced Seismic Forces: The lightweight nature of EPS cement sandwich panels means that buildings constructed with these materials experience lower seismic forces during an earthquake. This reduces the stress on the building's foundation and structural elements, minimizing the risk of damage or collapse.

Ease of Handling: The lightweight panels are easier to install and require less heavy equipment, which can be advantageous in seismic regions where transportation and logistics can be challenging.



Compact Wall

2. **High Flexural Strength**

Flexibility and Ductility: EPS cement sandwich panels have a certain level of flexibility due to the combination of EPS foam core and cementitious facings. This flexibility allows the panels to absorb and dissipate energy during an earthquake, reducing the likelihood of cracking or breaking.

Movement Accommodation: The panels can accommodate some movement and deformation without losing structural integrity, which is crucial in withstanding the dynamic forces of an earthquake.

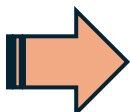
3. **Strong Shear Resistance**

Lateral Force Resistance: The panels exhibit strong shear resistance, allowing them to resist lateral forces caused by seismic activity. This helps in maintaining the stability of the building structure and prevents walls from buckling or tilting during an earthquake.

Enhanced Stability: The cement facings provide additional shear strength, enhancing the overall stability of the building in seismic conditions.



EARTHQUAKE



◆ Compact Wall

Can EPS Sandwich Panel be cut?

EPS (Expanded Polystyrene) cement

sandwich panels can be cut to fit specific dimensions and shapes required for a construction project.

Cutting these panels is relatively straightforward, thanks to the materials used in their construction.

Here's how EPS cement sandwich panels can be done:

Cut to EPS cement sandwich panels

EPS (Expanded Polystyrene) cement

sandwich panels can be cut to fit

specific dimensions and shapes

required for a construction project.

Cutting these panels is relatively

straightforward, thanks to the materials

used in their construction.

1. Tools for Cutting

Hand Saw: A fine-toothed hand saw can be used for smaller cuts or when precise, manual control is needed.

Circular Saw: For larger or straight cuts, a circular saw with a blade suitable for cutting cement board and EPS is commonly used.

Jigsaw: A jigsaw with an appropriate blade can be used for more intricate or curved cuts.

Hot Wire Cutter: For the EPS core, a hot wire cutter can make smooth and precise cuts without creating much dust.



Electrical Grinder Machine



Circular Saw



Coring Machine



◆ Compact Wall

2. Cutting Process

Marking: Start by marking the cutting line on the panel using a pencil or chalk and a straight edge or ruler to ensure accuracy.

Support the Panel: Place the panel on a stable surface with adequate support on both sides of the cut to prevent the panel from bending or breaking during the cutting process.

Cutting: Use the chosen tool to carefully cut along the marked line. If using a circular saw or jigsaw, maintain a steady hand and follow the line closely.

Smooth Edges: After cutting, the edges of the panel may need to be smoothed or sanded, especially if the cut is rough or uneven.

3. Safety Precautions

Personal Protective Equipment (PPE): Wear appropriate PPE, including safety goggles, gloves, and a dust mask, to protect yourself from dust and debris generated during the cutting process.

Ventilation: Ensure good ventilation in the work area to minimize inhalation of dust, especially when cutting cement facings.



Electrical Grinder Machine



Circular Saw



Coring Machine



◆ Compact Wall

4. Considerations

Minimizing Waste: Plan the cuts carefully to minimize waste and ensure the efficient use of materials.

Reinforcing Cut Edges: If necessary, reinforce the edges of the cut panels with additional adhesive or sealant to maintain structural integrity.

So, EPS cement sandwich panels can be cut to fit specific project needs using standard cutting tools. With proper techniques and safety measures, the cutting process is straightforward and allows for customization during installation.



Electrical Grinder Machine



Circular Saw



Coring Machine



Compact Wall

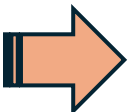
EXPORT PACKING

Packing: Pallets + Stretch film

Items mm			Single Board			no. of pallets	load by 40' dry			Application
Length	Width	Thickness	m3	Kg/pcs	Kg/m2		Qty / pcs	m2	Ton	
2270	610	75.00	0.10	67.00	48.00	30.00	312.00	432.03	28.95	Partition , Interior Wall□
2270	610	100.00	0.14	87.00	63.00	30.00	240.00	332.33	28.91	Partition ,Interior Wall ,Exterior Wall
2270	610	150.00	0.21	147.00	106.00	30.00	144.00	199.40	29.31	Exterior Wall
2270	610	200.00	0.03	195.37	141.09	30.00	110.00	152.32	29.76	Exterior Wall
2440	610	75.00	0.11	80.00	54.00	30.00	372.00	553.68	29.76	Partition , Interior Wall□
2440	610	100.00	0.15	100.00	67.19	30.00	299.00	445.03	29.90	Partition ,Interior Wall ,Exterior Wall
2440	610	150.00	0.22	160.00	107.50	30.00	185.00	275.35	29.60	Exterior Wall
2440	610	200.00	0.27	160.00	107.50	30.00	185.00	275.35	29.60	Exterior Wall
3000	610	75.00	0.14	87.84	48.00	24.00	216.00	299.10	26.27	Partition , Interior Wall□
3000	610	100.00	0.18	130.00	71.04	24.00	144.00	199.40	25.92	Partition ,Interior Wall ,Exterior Wall
3000	610	150.00	0.28	200.00	109.29	24.00	96.00	132.93	26.59	Exterior Wall
3000	610	200.00	0.37	265.00	144.81	24.00	72.00	99.70	26.42	Exterior Wall



◆ Compact Wall



◆ Compact Wall



◆ Compact Wall



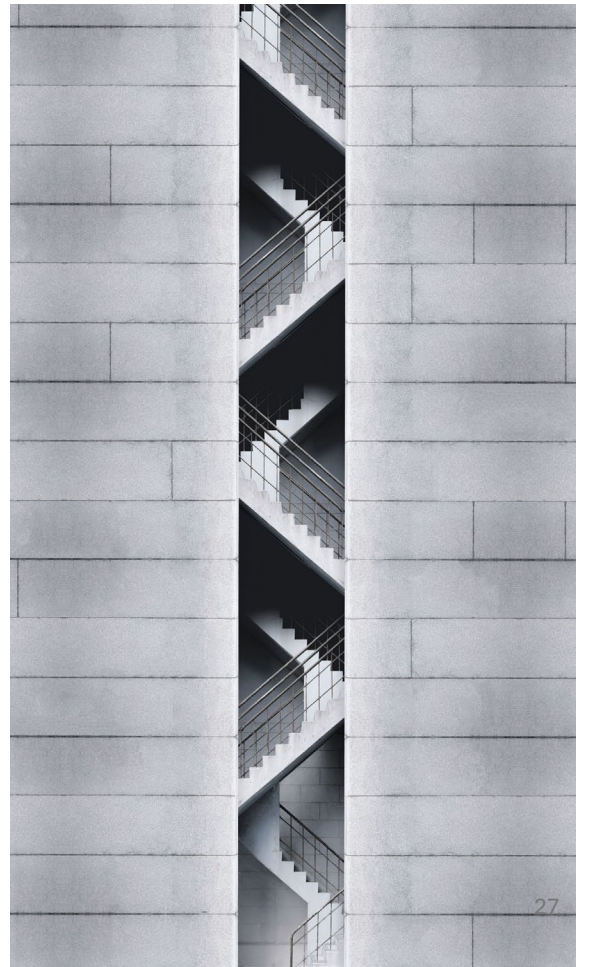
◆ Compact Wall



Compact wall is a flooring and ceiling option



Compact Wall



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