

CONCRITBOARD

Builders' Solution

ALL-IN-ONE CLADDING BOARD



ID No:- 041-007

Made from 32%
Recycled Materials

Product Introduction

In 1974, post-cured concrete in the form of a thin hard board was invented in USA. In 2005, **ConcritBoard** was introduced to Singapore.

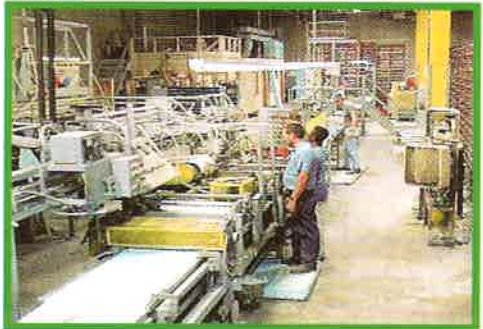
ConcritBoard is a versatile all-in-one cladding board that can be used for internal & external wall, wet & dry usage, floor, ceiling & roofing applications. It is designed for light to severe duty application.

Unlike most wall-boards which have limitations due to inherent problems such as staining, moulding, joint cracking etc., **ConcritBoard** does not display such weaknesses.

ConcritBoard's full range of test results will attest to the superior properties of this product... which also comply with Singapore Building & Construction Authority (BCA) standards.

ConcritBoard is flexible to design and easy to construct. Using simple tools and even untrained labour, a crew of only a few workers can typically erect any structure simply and quickly. This add up to fewer delays and a quicker overall construction cycle. Buildings constructed with **ConcritBoard** are structurally sound, fast, and easy to build. It is also energy efficient, resistant to moisture, and environmentally sound.

It is simply. . . built to last.



Benefits:

- Internal & External Usage
- Dry & Wet Usage
- Indoor & Outdoor Storage
- Light & Strong
- Withstands Strong Impact
- Cut & Patch Repair
- Better Housekeeping
- Board Can Curve
- Weatherproof
- Anti-Termite
- Anti-Fungal
- Anti-Swelling
- High Tile Bonding Strength
- Sound Acoustic Values of STC 51 & 58
- 1.5 & 2.5 Hour Fire Rating

Weather Resistant



Fire Resistant



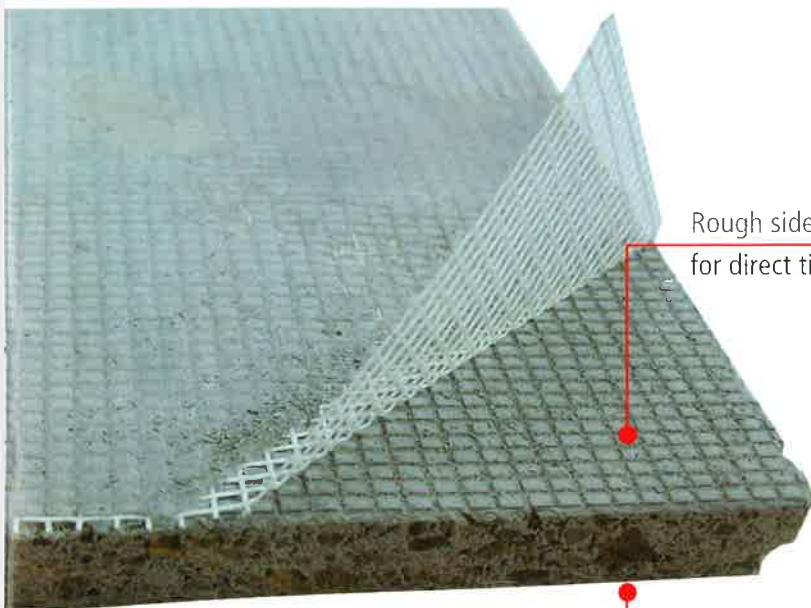
Impact Resistant



Acoustic Noise Control

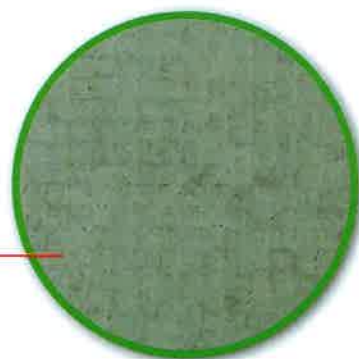
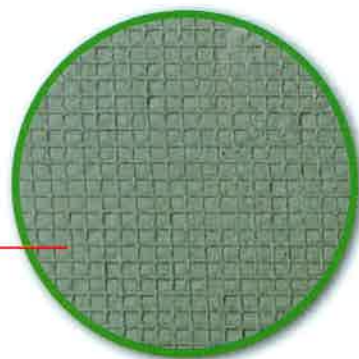


Termite Resistant



Rough side (Back)
for direct tiling

Smooth side (Front)
for direct painting



ALL-IN-ONE Cladding board... catering to... interior... exterior... dry... wet...

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Applications

Internal Wall Structures

Dry Area



Singapore - Curve Wall Partition



Singapore - Landed Housing Internal Wall



Taiwan - Oxford Kindergarten Room Partition



Taiwan - Training Center Wall Partition (Sound Acoustic Value STC 51)

Wet Area



Singapore - Enclose W.C. System



Singapore - Cover PVC Drainage Pipe



Taiwan - California Fitness Gym Shower Room



Singapore - Enclose Water Tank



Singapore - Bathroom Wall Partition

External Wall Structures



Singapore - Crab Farm Warehouse Construction



Singapore - Warehouse Extension



Singapore - Construct New High Wall Above Rooftop



Singapore - Woodlands Church Façade Wall



Taiwan - Xin Dian Clubhouse



China - Lan Zhou Hospital – 3rd Floor Extension



Singapore - Factory Façade Wall (Replace Aluminium Cladding Façade)



China - Tanjin Logistic Base Exhibition Center



China - ConcritBoard Overlay on Old Façade Wall (School Project)



China - ConcritBoard Clad onto Brickwall

Applications

Floor & Ceiling Structures



Singapore - ConcritBoard Overlaying on Old Tiled Floor



Singapore - Raised Floor Construction



New Floor Construction



False Ceiling Construction



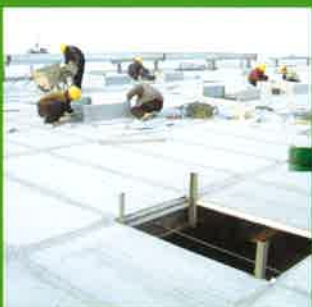
Roof Systems



Taiwan - Overlay ConcritBoard on Existing Zinc Roof



Taiwan - Temple Curve Roof



Taiwan - ConcritBoard Roof with Skylight



New Roof Construction



Other Special Applications



Singapore - Cover External Drain Pipe



Singapore - Viewing Window



Singapore - Parapet Wall



Raise Platform Stage



Singapore - Cover I-beam Section Steel



Singapore - Boundary Wall



Singapore - ConcritBoard used as Cast-in formwork

Installation Guide



1 Fixing of steel studs



2 Cutting of steel stud using simple cutting tool



3 Completed steel stud frame



4 Cutting of ConcritBoard using electric cutting tool



5 Alternatively cutting ConcritBoard using pen-knife



6 Fixing of ConcritBoard onto steel stud using battery drill & self-drilling screws



7 Running electrical services inside wall partition



8 Install RockWool (if requiring acoustic & fire rating properties)



9 Patching up joints with cementitious-based mortar



10 Reinforcing joints with a layer of fibremesh



11 Smoothing the surface using recommended skim coat material



OR Laying tiles on ConcritBoard using normal tile adhesive (Fibremesh and skim coat can be obseleted for wall-tiled surface)

Additional Features

How To Repair Dented ConcritBoard



1 Damaged ConcritBoard caused by strong impact



2 Cut and remove fibremesh



3 Patch dented area with cement + sand + water mixture



4 Overlay new fibremesh



5 Skim coat the surface to smoothen it

Cutting of ConcritBoard To Receive Other Services



1 ConcritBoard can be easily cut on site to conceal services and pipes



2 Cut-outs can be easily patched back by using cement + sand + water mixture

Product Properties

Properties	Results	Report
Density	1150 kg/m ³	
Weight	15 kg/m ² per 12.5mm thick board	
Curvature Radii	<ul style="list-style-type: none"> • 6.5mm thick – approx. R 550mm • 9.5mm thick – approx. R 650mm • 12.5mm thick – approx. R 750mm (Size of board 1830mm by 920mm)	
Material Composition	<ul style="list-style-type: none"> • Portland Cement (~ 31% by weight) • Lightweight aggregates (~ 27% by weight) • Fly ash (~ 13% by weight) • Bottom ash (~ 19% by weight) • Water (~ 8% by weight) • Fibreglass mesh on board (~ 2%by weight) 	
Non-Combustibility Test	Pass	B.S. 476: Part 4
Fire Propagation Test	Class 0	B.S. 476: Part 6: 1989
Surface Spread Flame Test	Class 1	B.S. 476: Part 7: 1997
Fire Rated Test (100mm thick wall)	Passed 1.5 Hour	B.S. 476: Part 22: 1987
Fire Rated Test (155mm thick wall)	Passed 2.5 Hour	B.S. 476: Part 22: 1987
Sound Acoustic Test (100mm thick wall)	STC 51	ASTM E90 & ISO 140 Part 3
Sound Acoustic Test (155mm thick wall)	STC 58	ASTM E90 & ISO 140 Part 3
Resistance to Axial Withdrawal of Screw at Each Point	38kg	B.S. EN 320: 1993
Moisture Content	4.48%	B.S. EN 322: 1993
Swelling in Thickness After Immersion in Water	0.31%	B.S. EN 317: 1993
Fungus Resistance	No Growth	ASTM G21-96
Tile Bonding Strength Test (Pull Out Test)	0.15 N/mm ²	PSB Report: 54S055394/1F/NLH
Impact Strength Test	16 mm/mm	B.S. 5669: Part 1: 1989
Flexural Strength Test	Longitudinal Axis: 7.75 N/mm ² Right Angle: 11.68 N/mm ²	B.S. EN 310: 1993
Strength & Robustness Test (100mm thick wall) Stiffness test, small hard body impact test, large soft body impact test & door slamming test Crowd pressure 3 KN/m, lightweight anchorage (pull out 10kg & pull down 25kg) & heavy weight anchorage (wash basin 150kg & wall cupboard 400kg)	Pass (Note: No crack line observed between board to board joints)	B.S. 5234: Part 2: 1992 & SS 492: 2001
Heat & Rain Test (100mm thick wall)	No sign of water penetration and crack lines on the surface	ASTM C1185
K – value (12.5mm thick)	0.39 m ² K/W	
Linear Variation Test Submersion in Water 24hr	0.01%	ASTM D1037 – 96a
Emission Rate Test	Pass (accredited Singapore Green Label mark)	ASTM D5116 - 06

How To Specify

Extruded lightweight concrete board containing:

- portland cement (~ 31% by weight)
- lightweight aggregates (~ 27% by weight)
- fly ash (~ 13% by weight)
- bottom ash (~ 19% by weight)
- water (~ 8% by weight)
- fibreglass mesh on board surface (~ 2% by weight)

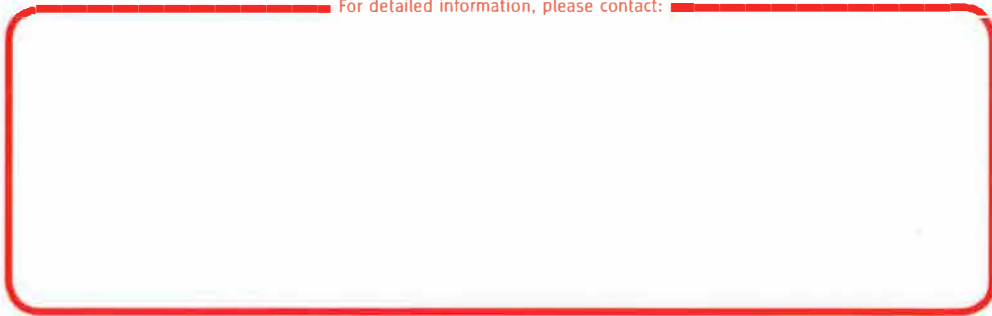
And complying with the following -

- **Average Weight** of 15kg/m²/12.5mm thickness & Density of 1150kg/m³
- Passed **Mechanical Test** for stiffness, hard body impact, large soft body impact, door slam, crowd pressure, lightweight & heavyweight anchorage in accordance with SS492:2001 & BS 5234: Part2: 1992
- **Fire Rating** of at least 1.5 hour for 100mm thick cladded wall and at least 2.5 hour for 155mm thick cladded wall in accordance with BS 476: Part22: 1987
- Minimum **Sound Acoustic** value of STC 51 for 100mm thick cladded wall and STC 58 for 155mm thick cladded wall in accordance with ASTM E90 & ISO 140 Part 3
- **Heat & Rain Test** for external wall usage with no visible sign of surface cracks in accordance with ASTM C1185-1996
- Minimum average resistance to axial **Withdrawal of Screws** of 497 N in accordance with BS EN320:1993
- **Average Swelling** in thickness, after immersion in water, is not more than 0.31% in accordance with BS EN317:1993
- Maximum average **Moisture Content** of 4.48% in accordance with BS EN322:1993
- Minimum average **Impact Strength** of 16mm/mm in accordance with BS5669: Part1: 1989
- Minimum average **Flexural Strength** of 11.68 N/mm² for right angles and 7.75 N/mm² for longitudinal axis in accordance with BS EN310:1993
- Minimum average **Bonding Strength** to ceramic tile of 0.15N/mm² in accordance with SAC accredited procedure
- The board is **Non-combustible** in accordance with BS476: Part4: 1970
- **Surface Spread Flame** is Class 1 in accordance with BS476: Part7: 1997
- The board is **Fungal Resistant** in accordance with ASTM-G21-96
- **K value** for ConcritBoard at 12.5mm thickness is 0.39 m²·K/W
- Maximum **Linear Variation** is 0.01% in accordance with ASTM D1037 – 96a
- **Emission Rate Tests (Green Label)** in accordance with ASTM D5116 - 06

Questions & Answers

1. What type of infill jointing compound should I use for the board to board joint?
50 - 75mm wide fibremesh and cement + latex + sand + water mixture.
2. Where can I place the ConcritBoard when it's delivered to the site?
ConcritBoard can be stored indoor and outdoor because water absorption into the board will not affect the performance of the board.
3. Is it difficult to fix ConcritBoard?
No. Fixing procedure and tools used are the same as any other wall-board in the market.
4. Can ConcritBoard be used for external & wet areas?
ConcritBoard is best suited for such applications.
5. Can I mount heavy objects on the wall surface (e.g. LCD TV, wall cabinet, etc.)
Yes. Please refer to test report for an indication of ConcritBoard high anchorage capacity.
6. Is it easy to cut?
Yes. It can be cut by pen-knife or hand-held electric rotary cutter.
7. Is it easy to repair?
Yes. Just patch the dented areas using normal cement-sand-water mixture.
8. How long does it take to construct a 3m by 3m ConcritBoard partition wall as compared with brick wall?
ConcritBoard partition wall – less than 1 day to complete including finished coating.
Brick wall – at least two days including plaster & skim coat.
9. Do we need specialists to construct a ConcritBoard partition wall?
No. People who can operate simple electric hand tools will suffice.
10. Can ConcritBoard be curved?
A piece of 0.92m x 1.83m board can be curved to form a circular structure. Please refer to product properties for its curvature radii.
11. Is ConcritBoard toxic or environment friendly?
ConcritBoard is 100% toxic free and environment friendly. It has obtained "Singapore Green Label" mark.
12. How is ConcritBoard's acoustic performance?
ConcritBoard can achieve up to STC 58 for wall thickness under 155mm. Very few wall-boards can achieve this value for the same wall thickness.

For detailed information, please contact:



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