



Cement Bonded Particleboard
Your Idea Your Style



Smile Board

Cement-Bonded Particleboard

“Your Idea Your Style”

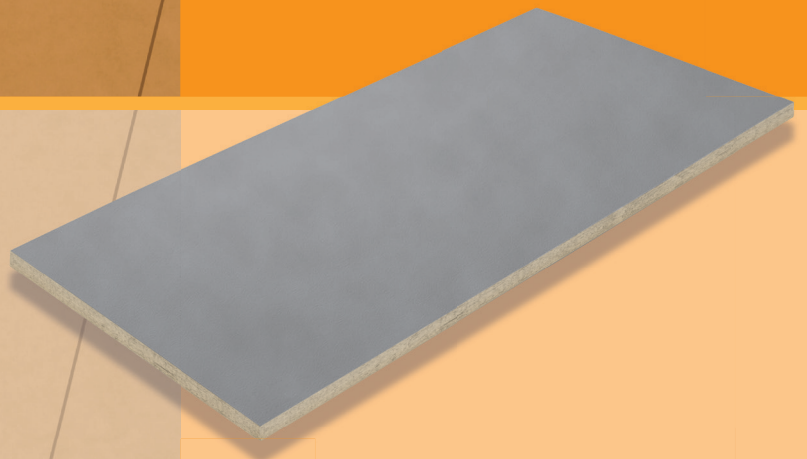
Product for Sub-Roof/ Ceiling/External Wall-Wall System

External-Internal Floor / Internal Wall Internal wall with Covering / Floor Coverings



Wood Cement Bonded Particleboard
Your Idea Your Style





Smile Board

- Smile Board possesses its wood-like properties and attribute of cement materials to the highest extent. Smile Board is strong, lightweight, waterproof and fire-resistant material. The surface shields against insect, termites and fungal growth.
- Smile Board manufactured to meet the requirement of ISO 9001:2015, ISO 14001:2015, EN 19386 : 2004 +A1:2015 and Thai Industrial Standard 878-2537

Product Characteristics

- Attractive with cement-based loft style surface
- Simplified for different installations
- Durable for high load bearing in accordance with international standard
- Asbestos free

Size , Thickness and Weight

Standard

Thickness (mm.)	8	10	12	16	18	20	24
1200 x 2400 mm. Weight (kg. / Sheet)	32	40	48	65	73	81	97
1220 x 2440 mm. Weight (kg. / Sheet)	33	42	50	67	75	83	100
Weight (kg. / Sq.m.)	11.1	13.9	16.7	22.6	25.2	28.1	33.7

Uses for different thicknesses of Smile Board

Thickness (mm.)	8	10	12	16	18	20	24
Sub-Roof			✓	✓	✓		
Ceiling	✓						
External Wall / Wall System		✓	✓	✓	✓	✓	✓
External / Internal Floor				✓	✓	✓	✓
Internal Wall	✓	✓					
Internal Wall with Covering			✓				
Floor Covering	✓	✓	✓				

Features and Advantages of Smile Board



Soundproof



Thermal insulation



Fire resistance



Weather durability



Insect resistance



Asbestos free



Saving cost



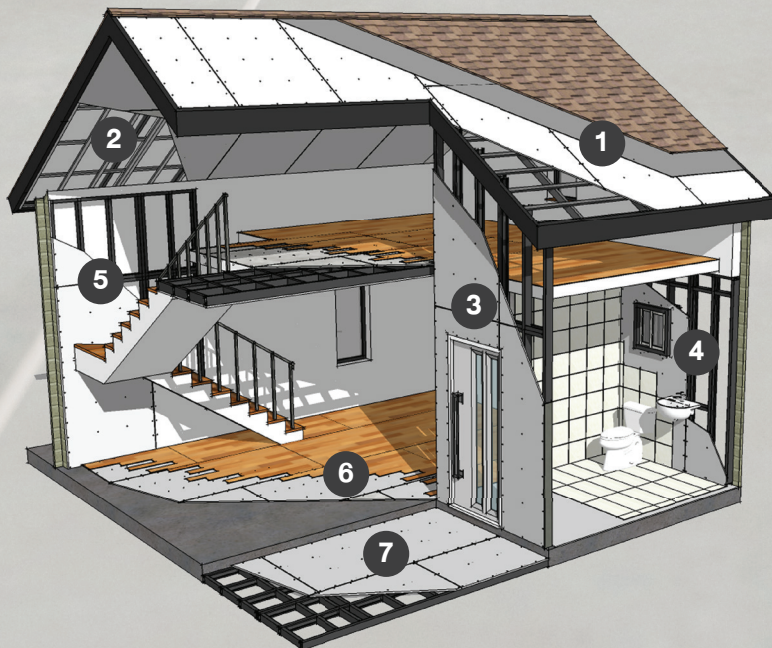
Practical installation



Eco friendly



View or complete project at Smileboard



- 1. Sub-Roof**
Thickness 12 - 16 mm.
- 2. Ceiling**
Thickness 8 mm.
- 3. External Wall / Wall system ***
Thickness 10 - 24 mm.
- 4. Internal Wall with Covering**
Thickness 12 mm.
- 5. Internal Wall**
Thickness 8 - 10 mm.
- 6. Floor Coverings**
Thickness 8 - 12 mm.
- 7. External / Internal Floor***
Thickness 16 - 24 mm.

*Surface coating following on page 13

Technical Data

Specific Properties	Unit	TIS.878-2537	Smile Board (Average value from test)
Density	kg. / m. ³	1,100 - 1,300	1,300
Modulus of Elasticity (MOE)	N / mm. ²	≥ 3,000	≥ 5,000
Modulus of Rupture (MOR)	N / mm. ²	≥ 9	12.5
Tensile Strength (perpendicular to surface)	N / mm. ²	≥ 0.5	≥ 0.6
Moisture Content	%	9 - 15	9 - 15
Thickness Swelling (after 24 hours immersion)	%	≤ 2	0.6
Thermal Conductivity (K)	W / m ^{°C}	≤ 0.25	0.1

Other properties

Specific information	Unit	Smile Board (Average value from test)
Water absorption rate (after 24 hours immersion in water)	%	10
Acoustic reduction rating	dB	30 - 35
pH Measure	pH	12

Special Features

Fire Resistance

Since Smile Board has a high ratio of cement components, it has resist to fire damage for 1 or 2 hours. The product has already passed BS 476 part 6 & 7 standards.

Soundproof

High density makes Smile Board efficient in lowering sound transmission, proved by STD 41, 50 and 55 tests.

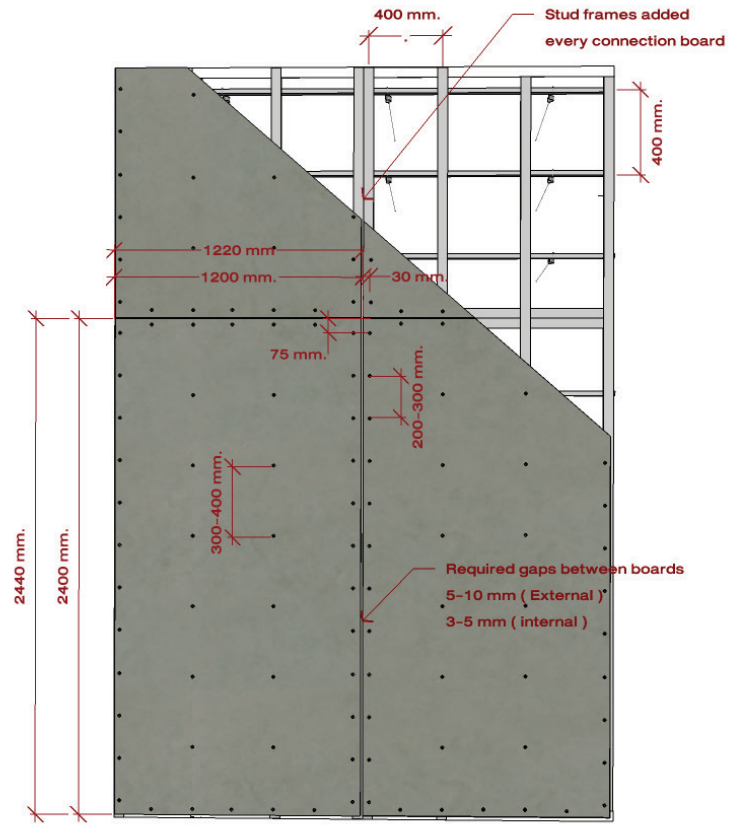
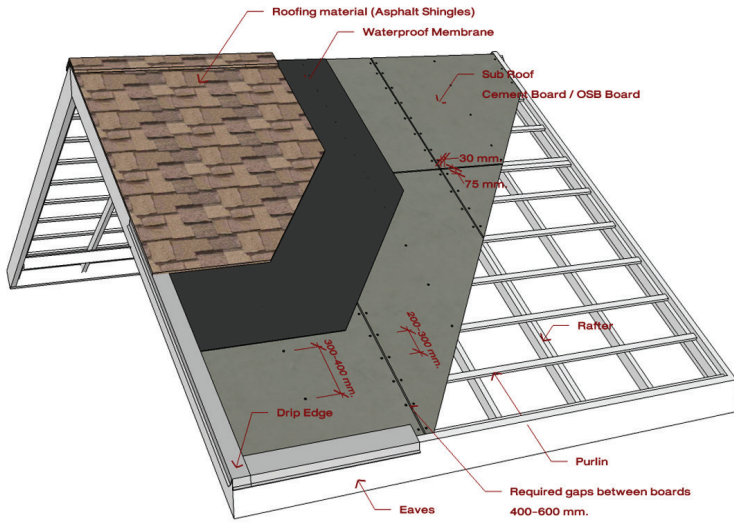




**CEMENT BONDED
PARTICLEBOARD**
“Your Idea Your Style”
Interior / Exterior
Water resistance / Heat Insulation
Termite Free / Asbestos free



Wood Cement Bonded Particleboard
Your Idea Your Style



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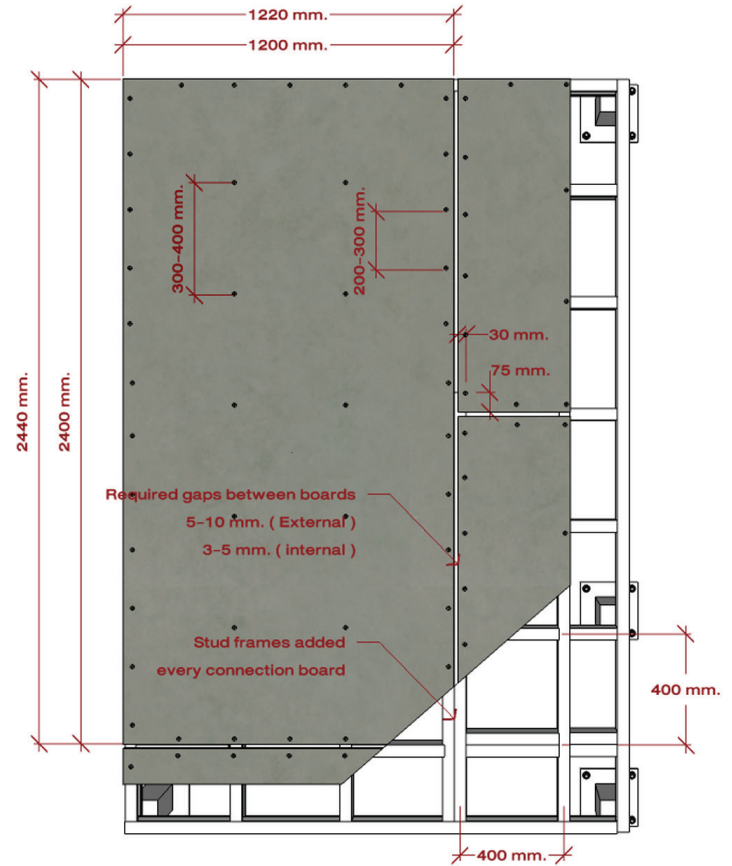
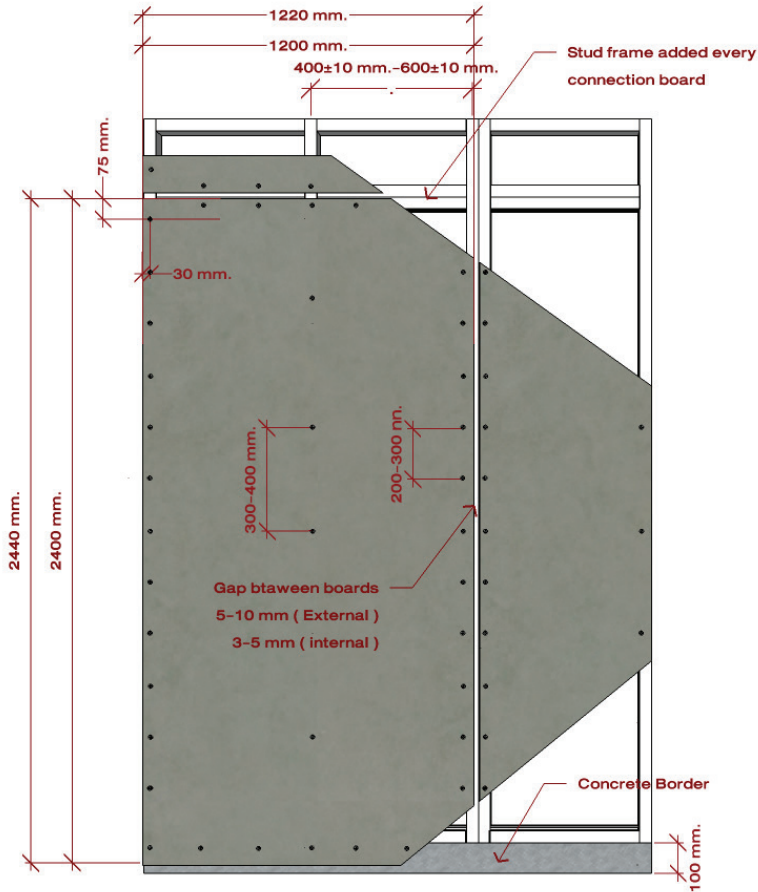
Sub-Roof

- Thickness ● 12-16 mm. thickness required
- Stud Framing ● Directions by Roof Tile Manual
- Spacing ● Directions by Roof Tile Manual
- Installation ● Roof shingle/Wood - board on purlins
● Roof shingle tile - board under purlins
● Required gaps for each board at 5-10 mm., covered with sealing substance
- Fastening ● 200-300 mm. space along the edge for each screwed point
● 300-400 mm. intervals along the central area of the board
● 75 mm. space from the corner while 30 mm. from the edge
- Surface Covering ● Apply water proofing substance coated membrane to prevent water and humidity before roof tile installation

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Ceiling

- Thickness ● 8 mm. recommended for general use
- Stud Framing ● Wooden stud frame with 1,5 x 3 inches
● Frames placed on every 400±10 mm. to 600±10 mm.
- Installation ● Board placed with balance on stud frame required gaps between boards at 3-5 mm.
● Stud frames added for every board connection
- Fastening ● Gaps and holes covered by polyurethane sealant
● Pilot holes done only by drilling
● 200-300 mm. space along the edge for each screwed point
● 300-400 mm. intervals along the central area of the board
● 75 mm. space from the corner while 30 mm. from the edge
- Painting and coating ● Clean with damp cloth before painting
● Apply primer at least one
● Paint with 100% acrylic color (recommended)
● For glossy look, apply semi-glossy acrylic / polyurethane at least twice



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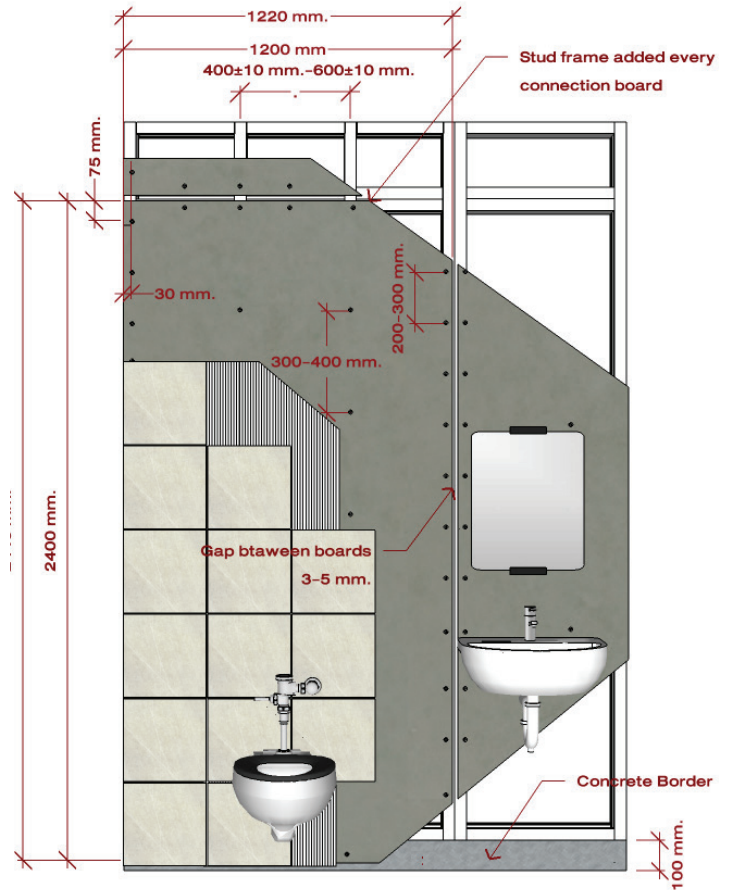
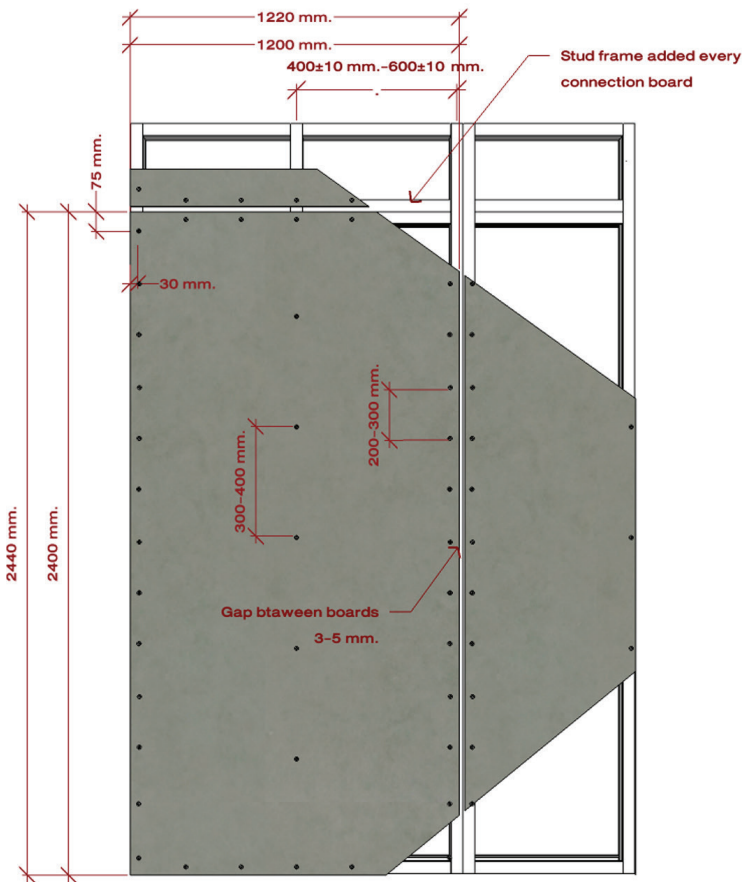
External Wall

- Thickness**
 - 10-12 mm. recommended for general use
 - More than 12 mm. recommended for free surface exposure
- Stud Framing**
 - Steel or steel-tubed frame with 3 inches required (and more than 2,3 mm. thickness)
 - Galvanized frames with 0,75 - 1 mm. thickness with at least 275 g/sq.m. for zinc coat
- Spacing**
 - Vertical frames with 400±10 mm. to 600±10 mm. while horizontal ones of 2440 mm. or 2400 mm.
 - 100 mm. wall height from the floor to keep boards and steel studs away from water which will make them rusty
 - Frames placed on every 400±10 mm. to 600±10 mm.
 - Stud frames added for every board connection
 - Board placed with balance on stud frame
 - Required gaps for each board at 5-10 mm.
- Fastening**
 - Gaps and holes covered by polyurethane sealant
 - Pilot holes done only by drilling
 - 200-300 mm. space along the edge for each screwed point
 - 300-400 mm. intervals along the central area of the board
 - 75 mm. space from the corner while 30 mm. from the edge
- Painting and coating**
 - Clean with damp cloth before painting
 - Apply primer at least one
 - Paint with 100% acrylic color (recommended)
 - For glossy look, apply semi-glossy acrylic / polyurethane at least twice

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External / Internal Floor

- Thickness**
 - 16-24 mm. for general use
 - More than 16 mm. recommended for floor underlay
- Stud framing**
 - Steel and Galvanized frame directions by site engineer technical specification
- Spacing**
 - Frames placed on every 400±10 mm. x 400±10 mm.
- Installation**
 - Board placed with balance on stud frame
 - Place the board in 1:2 pattern stack
 - Required gaps between boards at 5-10 mm. (External) and 3-5 mm. (Internal)
 - Stud frames added for every board connection
- Fastening**
 - Gaps and holes covered by polyurethane sealant
 - Pilot holes done only by drilling
 - 200-300 mm. space along the edge for each screwed point
 - 300-400 mm. intervals along the central area of the board
 - 75 mm. space from the corner while 30 mm. from the edge
- Painting and coating**
 - Clean with damp cloth before painting
 - Apply primer at least one
 - Paint with 100% acrylic color (recommended)
 - For glossy look, apply semi-glossy acrylic / polyurethane at least twice
 - In case of cover by ceramic tiles / laminate/ carpet e.g. (Directions by each materials product manual)



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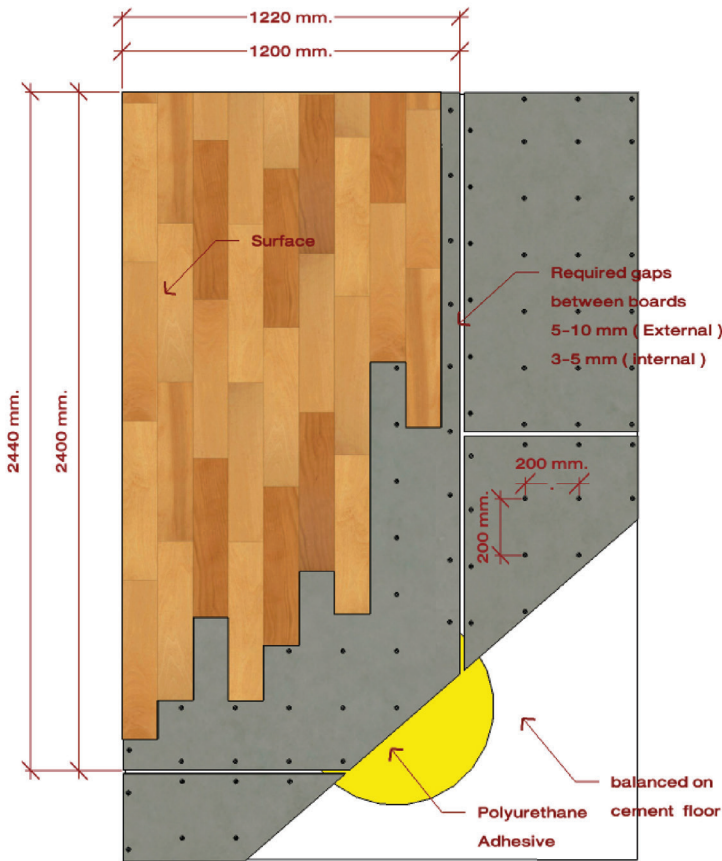
Internal Wall

- Thickness
 - 8-12 mm. for general use
 - More than 12 mm. recommended for underlaying wall
- Stud framing
 - Wooden stud frame with 1.5x3 inches
 - Steel stud frame with at least 1.2 mm. thickness
 - Galvanized frame in C74
- Spacing
 - Vertical frames with 400±10 mm. to 600±10 mm. while horizontal ones of 2440 mm. or 2400 mm.
- Installation
 - Stud frame added for each board connection
 - Board placed with balance on stud frame
 - Required gaps between boards at 3-5 mm
- Fastening
 - Gaps and holes covered by polyurethane sealant
 - Pilot holes done only by drilling
 - 200-300 mm. space along the edge for each screwed point
 - 300-400 mm. intervals along the central area of the board
 - 75 mm. space from the corner while 30 mm. from the edge
- Painting and coating
 - Clean with damp cloth before painting
 - Apply primer at least one
 - Paint with 100% acrylic color (recommended)
 - For glossy look, apply semi-glossy acrylic / polyurethane at least twice

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Internal Wall - Covering with Ceramic tiles

- Thickness
 - 12 mm. thickness require
 - Stud Framing
 - Steel or steel-tubed frame with 3 inches required (and more than 2.3 thickness)
 - Spacing
 - Vertical frames with 400±10 mm. to 600±10 mm. while horizontal ones of 2440 mm. or 2400 mm. put on wall with 100 mm.
 - Stud frames added for every connection and hanging point (e.g. basin, sanitary ware)
 - Board placed with balance on stud frame
 - Required gaps for each board at 3-5 mm.
 - Fastening
 - Gaps and holes covered by polyurethane sealant
 - Pilot holes done only by drilling
 - 200-300 mm. space along the edge for each screwed point
 - 300-400 mm. intervals along the central area of the board
 - 75 mm. space from the corner while 30 mm. from the edge
 - Surface Covering
 - Clean with damp cloth
 - Apply primary bonding and setting ready within 1-4 hours then apply adhesive cement plaster or ready-to-use acrylic bituminous membrane for sealings crack joint before tile installation
 - Attach the tiles firmly against the panel surface
- *Tiles not more than 600 x 600 mm.



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Surface and Covering (Ceramic tiles)

- Thickness ● 8-10 mm. recommended for general use
- Installation ● Board placed with balance on cement floor
● Place the board in 1:2 pattern stack
Required gaps between boards at 5-10 mm (External) and 3-5 mm (Internal)
- Fastening ● Every 200 mm. use concrete nail along the board to joint board with concrete
- Surface Covering ● Gaps and holes covered by polyurethane sealant
● Applying board with adhesive (e.g. polyurethane adhesive)
● Covering by ceramic tiles, laminate, carpet (installation by Product Manual)

Table of Frame Spacing for Maximum Load

Frame spacing (Cm.)	Load Compliance (Kg./Sq.m.)		
	16 mm.	20 mm.	24 mm.
40 x 40	610	960	1,440
40 x 60	410	650	950
40 x 120	-	550	790
60 x 60	-	410	600
60 x 120	-	230	330

Note

- The load in the table is calculated from installation where the load is equally distributed and does not include concentrated force impact load or vibrations
- Do not use the charger in a high moisture or wet environment.
- The framing that supports the boards must be strong . The entire pieces must be installed and the framing must support the piece on all four sides

Accessories



Electric screw



Cordless Nail Gun



Electric Cutting machine 1800 watt
(5800 rpm)



Circular Saw 7-1/4 "
(jigsaw for Cutting Wood 40 Teeth)



Needle point screw 10 mm.
Use for joint galvanize frame



Needle point screw 35-42 mm.
Use for joint galvanize frame with cement board



Wing screw 35-45 mm.
Use for joint steel frame with cement board



Concrete nail
Use for board lower than 10 mm.



Acrylic filler
Sealing defect & Hole



Polyurethane Sealant
Use for jointing the gap between board

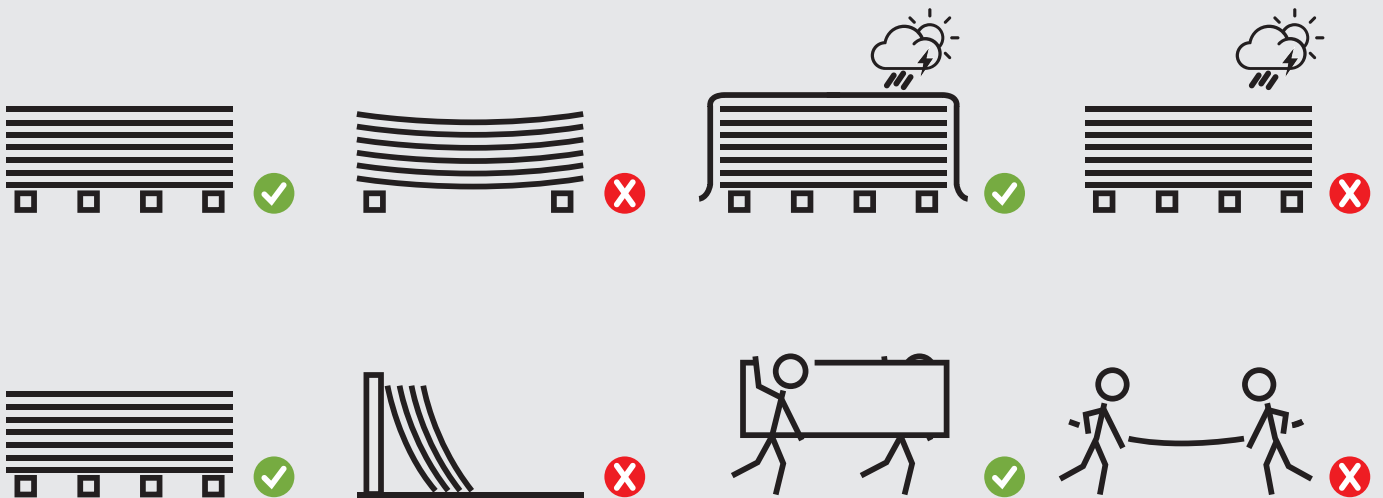
Note : Needle point screw 35-42 mm. for board 8-16 mm. / Needle point screw 42-45 mm. for board 20-24 mm. and Tapping screw for general use for Timber stud frame

Storage










- Smile Board need to be stored under a roofed area, dry environment and well protected from weather. Floor area should be leveled and solid.
- Maximum of 4 pallets can stacks and laid on top each other.
- Smile Board essential to be store in its original packing supplied.
- Do not store on edge or upright. Outdoor storage is not recommended.

Transportation

- Smile Board need to be be laid flat and be effectively protected during transportation by waterproof covering.
- Lifting the board from its stack should be done one piece at a time by sliding to the side. Never lift the board from its both ends because it may cause the boards to bend resulting in board breakage.
- Should be carry the board in vertical position



Surface Painting and Coating

Interior and Exterior Wall	Coating Type	Beger	Nippon Paint
Gloss (Water Repellent)	Transparent Coating (applied for 1-2 layer)	 Beger A-100 Repellent Gloss	-
Matte (Water Repellent)	Transparent Coating (applied for 1-2 layer)	 Beger W-006 Water Repellent	 Nippon Paint Water Repellent W-245
Acrylic Coating	Primer Coating (applied for 1 layer)	 Beger Pro Quick Primer B-1900	 Nippon Paint Excel Primer
	Acrylic Painting (applied for 2-3 layer)	 Beger Cool UV Shield (Exterior)  Beger Shield PhotoClean (Interior)	 Nippon Paint Color Shield Plus (Exterior)  Nippon Paint Vinilex Hybrid Care (Interior)

Interior and Exterior Floor	Coating Type	Beger	Nippon Paint
Glossy chemical	Transparent Coating (applied for 1-2 layer)	 Epoxy Beger C-Guard Penetrating Sealer	-
Epoxy/Polyurethane Painting	Epoxy Primer Coating (applied for 1 layer)	 Epoxy Beger C-Guard Penetrating Sealer	 Nippon Hi-pon 30-06
	Epoxy / Polyurethane Painting (applied for 2-3 layer)	 Beger Durathane (Exterior)  Beger Duraguard (Interior)	 Nippon Hi-pon 50-06 (Exterior)  Nippon Hi-pon 40-03 (Interior)
Acrylic Painting	Primer Coating (applied for 1 layer)	 Beger Pro Quick Primer B-1900	-
	Acrylic Painting (applied for 2-3 layer)	 Beger Synotex Roof Paint (Exterior / Interior)  Beger Synotex Decking Fiber Cement (Exterior / Interior)	

Remark: For external or high humidity used area must be coating/Painting all side of surface

Installation specification

- Do not use as structure of any building, nor use in other purposes. Users must strictly follow either installation manual, or equipment which are only in accordance with the standards of procedure
- Do not eat, Avoid the smelling
- Do not use as floor which installed higher than 50 metre, or more from ground level
- Do not use in the area that are always wet and moistening

Recommendation for Safety Operation

- Application of products which are not in the application purposes shown in this installation manual shall be direct responsibility of designer, and construction supervisor.

For designer

- Any Properties specified in this document are the average values from Testing of product which followed the specified standards, by sampling from the products during the period before distribution only
- Specifications for installation are only the fundamental recommendation for residential houses
- For any other buildings, or buildings with higher risk shall consider the wind load for design of structures and fixing methods as well. If it is necessary to calculate while lack of certified document from reliable institute, the unit wind load following Item 17 Of the Ministry Regulation Vol.6 (1884), Which announced in the act of Building Control 1979

For installer and User

- Specifications for installation are only the fundamental recommendation for general operation. Correct method of installation and structures to be used shall consider from the Standard of Structural Steel building E.I.T 1015-40 and Specification for Design of the Ministry Regulation Vol.6 (1884), Which announced in the Act of building Control 1979
- In any case that the users require Applying the product for Uses in other Purposes which are not specified in this Installation Manual, Consult with architect and engineer.



uon. 878-2537



ISO 9001 : 2015



ISO 14001 : 2015

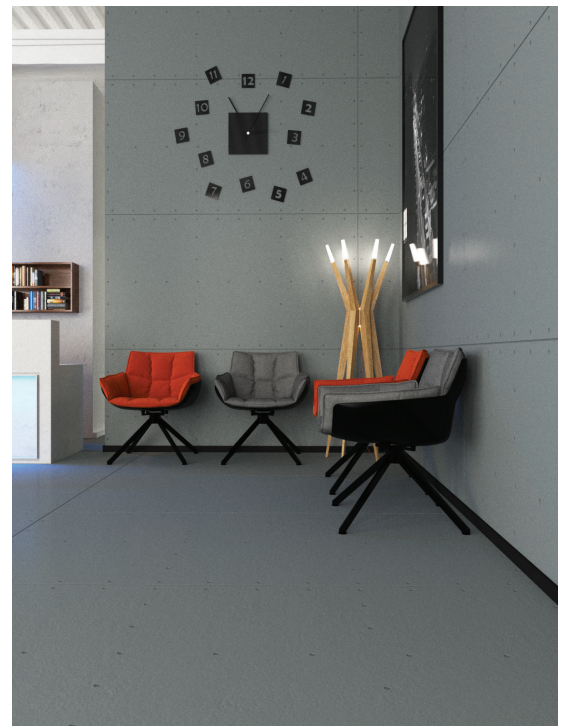


EN 19386 : 2004 + A1 : 2015



Product Tolerance

- Smile Board has Tolerance value about Diagonal ± 4 mm.
- Width/Length ± 2 / Thickness 8 -12 mm. ± 1 mm.
- Thickness 16 -20 mm. ± 2 mm.
- Thickness 24 mm. ± 2 mm.



Recommended safe work method

- Smile Board is designed and its application is designed and its application is specified to suit work condition in Thailand only . Application in other countries is considered as direct responsibility of the designer, Construction Supervisor, and installer.
- During use, Standardized personal protection equipment shall be used. After finished the work, close the containers tightly and keep out of children.
- If feel irritated after have skin contact , wash with clean water for several times, and immediately see the doctor.
- If swallow or eat , do not make the patient vomit but drink a lot of clean water for several times and immediately see the doctor.
- Specification for installation are only the fundamental recommendation for general operation , Correct method of installation and structures to be used shall consider from the Standard of Structural Steel Building E.I.T. 1015-40 and Specification for design of the Ministry Regulation Vol.6 (1884), Which announced in the Act of building control 1979.
- The Smile Board Products compose of the silica, Cutting grinding drilling or polishing of the products may cause the distributing dust. If those are accidentally eaten or inhaled to human body in considerable amount and over a long period, This may case danger to human body and the respiratory system.
- Cutting, grinding, drilling or polishing of the products shall be carried out in well ventilated area . Avoid using the machine for cutting grinding drilling or polishing of the products that may cause high amount of dust
- Do not work during bad climates such as, during storm or raining or on the wetting roof.
- Always wear Personal Protection Equipment which is in accordance to the Standards or any unauthorized person who does not involve to the work must not go near to the working area, in order to avoid dangerous circumstance with may occur.
- Lifting or transportation of products shall be performed with special attention. It is prohibited to bow oneself for lifting. Do not twist the body or change direction during lifting, Moreover, avoid long period of continuous work in order to prevent injury or fatigue
- Every time of lifting, ones must lower their body and hold the product firmly, then apply strength from their legs in order to lift up.
- For Cleaning the working area after complete the works of cutting grinding ,drilling or polishing of the products, use vacuum machine and seal the dust containing bag tightly, or use the cleaning liquid. Do not sweep the dust since it can make dust spread out
- Separate and collect the debris of material resulted from installation, reparation, dismantling f products with special attention, then those shall be disposed by corrective means in accordance to the sanitary regulations specified by the government
- Clean the body using clean water after Cutting, Grinding, Drilling, or polishing of the products.





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