Version V7

FIBRE CEMENT BUILDING BOARD

CEMBLOC.

CEMPLATE

6, 9 & 12 mm

RENDER BOARD GUIDE

Innovators of Fibre Cement Products

CEMBLOC.

A1 Non-combustible Category A weather-proof building board and render carrier for interior and exterior applications

CemPlate Description.

Technical Datasheet

Cembloc CemPlate is a high performing multipurpose building board that's multi-purpose capacities cover four major areas; weather protection, sound reduction (54db), render application and fire protection. With its most prominent feature acting as a sheathing board to provide external weather protection to timber frame, modular and steel frame (SFS) constructions prior to the install of a finished external facade system. CemPlate offers exceptional dimensional stability creating a superior all round carrier panel system board. It's resistant to water, an A1 non combustible, is UV stable and fully weatherproof even at freezing temperatures.

CemPlate is superior building board with exceptional dimensional stability of (<0.19%) when compared to alternatives such as chipboard, gypsum fibre and cement bonded particle board.

Advantages Of Use.

Protects sub-construction system.
Dirt proof.
Environment friendly.
Does not contain any harmful substances to health.
100% Asbestos free.
A1 Fire Class
Does not release toxic gas during the fire.
Resistant to moisture and water.
Resistant to the effects of sunlight.
Resistant to seasonal changes.
Easy assembly and modification procedures.
Easy to cut.
A finishing material, eliminates drying times of wet screed.
Extends and protects the life of insulation material when used in heat and sound insulation systems.

Extremely high dimensional stability (<0.19%) when compared to chipboard, gypsum and cement particle.
Has feature of water repellent.
It is odorless and does not release toxic gas.
Resistant to impacts.
Resistant to biological and chemical wastes.
Easy to carry, light weight.
Insect-proof, non-putrescible, no molding.
Offers different solutions in all areas of building projects.
Creates facades and surfaces compatible with fire regulations.
Can be used with insulating material of any desired thickness.
Can be used in fine details with smooth cutting surfaces.
Very high impact resistance compared to gypsum based boards.

Standard Dimensions.

Thickness	Dimensions
Slimline 6mm (large format Cembloc board) 9mm* 12mm (recommended thickness for render carrier board)	1200 x 2400mm

*Our 9mm Board is widely used as a render carrier board but has not been tested by the render manufacturers yet.

Technical Specifications. *(12mm)*

Composition	Portland cement, sand, cellulose fibre.
Water Impermeability	No sign of water marks on the opposite side after 24H test.
Thermal Insulation	<0.25w/(m.K)
Mechanical Characteristics – Bending strength (MOR)	Class 2 MOR Minimum of 6mm 14.27MPa. MOR Average of 6mm 16.70MPa. MOR Minimum of 9mm 13,04MPa. MOR Average of 9mm 15.88MPa. MOR Minimum of 12mm 13,92MPa. MOR Average of 12mm 16,48MPa. Transverse > 13.0N/mm3. Vertical > 10N/mm3.
Pressure Strength	30 N/mm2
Tensile Strength	10 N/mm2
Shearing Strength	> 345 KPA
Pull Through	Average 1981 N Maximum 2258 N 75454 - FBCS3.9X35
Pull Out	850 N
Racking Resistance*	Vertical load 0 kN Racking Stiffness (mean) 2278 N/mm Fmax Average 19.52KN Vertical load 5 kN Racking Stiffness (mean) 1908 N/mm Fmax Average 25.55KN
Water Absorption	<29%
Wet Expansion Rate	0.23%
Heating Shrinkage Rate	0.18%
Fire Resistance	120 mins achieved on 100kg/m3 RW5 Insulation flame resistant to combustion at 800°C and remains flameless at 1200°C.
Reaction to Fire	A1
Acoustic Rating (DnTw)	Superior sound insulation credentials for a wall built using Cemplate in conjunction with a sound isolation clip system and furring bars, ranges between 46 db and 51 db.

*Specimen comprised timber frame constructed from 90mm x 40mm x 2400mm timber stud at nominal 600mm centres; Product fastened to timber frame with Cembloc 38mm external fibre cement board screws at 150mm centres to the perimeter and 300mm centres to the internal studs

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Technical Specifications. *(12mm)*

Length Tolerance	+/- 0.3mm
Width Tolerance	+/- 0.3mm
Diagonal Tolerance	<5mm
Thickness Tolerance	+/- 0.3mm
Linear Expansion Rate	<0.5%
Density (In dry condition)	(standard) 1350kg kg/m³ (± 50kg) (high) 1590 kg/m³ (± 50kg)
Squareness of Edges	0.89mm/m
Release of asbestos	100% no asbestos
Combustibility	Non-Combustible
Moisture Content	@20 °C & 65%RH: 15% @20 °C & 30%RH: 10%
Frost Resistance	Category A No signs of cracking after 25 cycles of frost test
Heat-Rain	Passed
Warm Water	Passed
Soak-Dry	Passed
Weather Resistant	Resistant to Deformation in Wet, Hot and Dry Conditions. They can be used at -40 degree. Out of Shape Rate in the Condition of Wet or Dry is 0.26%.
Water and Damp Proof	The board still keeps Intact after being soaked in Water for One Month, the Phenomenon of Swelling and Out of Shape will Not Happen. It will NOT Disintegrate when Immersed in Water or Exposed to Freeze/Thaw Cycles for Prolonged Periods of Time.
Bug & Mildew free	Board has been found to be Non-Nutrient to Mold, Fungus Growth or Insect Life.
Environmentally Friendly	This Environmentally Friendly board is manufactured from a unique blend of Mineral Components, and does NOT contain any Toxic ingredients, Asbestos, Formaldehyde or Ammonia

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Recommended Fixings.

Steel Frame - 4.2mm x 38mm self-drilling and self-countersinking, wingtip.
Timber Frame - 4.2mm x 42mm self-drilling and self-countersinking.

Step 1. Application accordance:

Cembloc CemPlate is suitable for Timber Frame, Lightweight Steel Frame and Modular/ Offsite. In most cases battens at 600mm centres is suitable although if the building is exposed to higher wind load or exposure, we would recommend vertical battens fixed at 400mm centres . The board is designed to be installed by a competent builder, or a contractor, experienced with this type of product. A suitably qualified and experienced individual must check the design and method of installation of the boards.

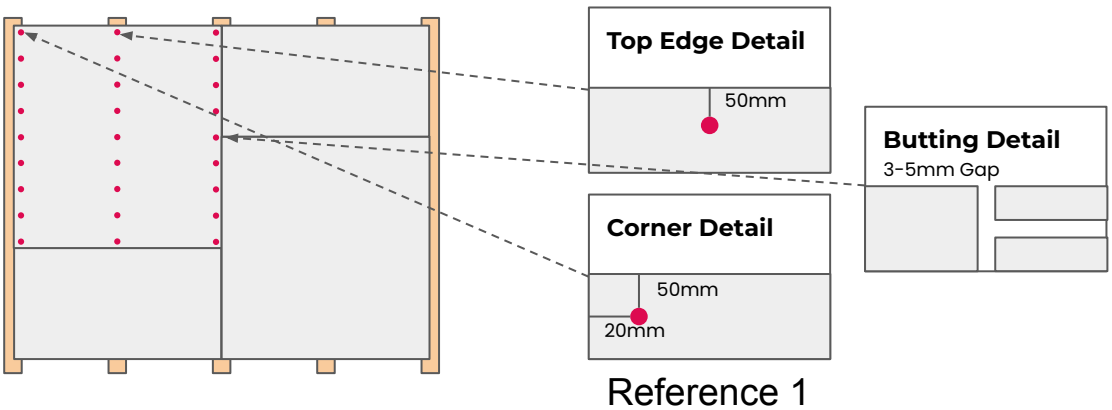
Step 2. Cut boards to size:

Cut Cembloc CemPlate using a circular saw fixed with a suitable vacuum extractor and a Polycrystalline Diamond (PCD) Saw blade to avoid excessive wear on other blade types. This method will cut boards easily at the same time mitigating dust. Our Cembloc boards can be cut with either a fine tooth hand saw or power saw, whilst ensuring suitable dust control measures are taken (eg localised extraction where possible, protective safety glasses, gloves and respiratory masks as per MSDS) and observing all necessary health and safety regulations. Boards should be fixed with the board text facing upwards (smooth texture).

When cutting panels around a passage or door, note that the joints must not be aligned with the edge scale of the door or the centre of the opening. We find that most render manufacturers recommend using either a window, but boards should be single or double layer cut of render around mesh over the opening and fixed on to a the key stress points such as minimum 25x60mm batten corners of the The boards must be supported by a minimum of a 25x60mm batten all the way around the opening to ensure a stable support to render on opening.

Step 3. Fixing:

Unlike traditional timber frame, SIP panels do not include an internal stud but the outer OSB layer is typically structural enough to fix the render carrier system (aka CemPlate) directly to it. Like any timber frame, the frame will require a breather membrane, followed by the battens vertically at either 400mm or 600mm centres (as stated in Step 1), then proceed as you would in a standard timber frame build up. Typical fixing detail of render is: Cembloc Cemplate, Render Base coat, Render Mesh, Render Base Coat, Prime followed by render finish coat.



Reference 1

Step 4. Mechanically fix with screws:

Screws should be a minimum of 12mm from board edges and spaced at a maximum of 300mm. The screws must not be over-tightened. 27 Nr. fixings per 2400x1200mm sheet when fixed in a horizontal orientation or 28 Nr. fixings per 2400x1200mm sheet when fixed in a horizontal or vertical orientation.

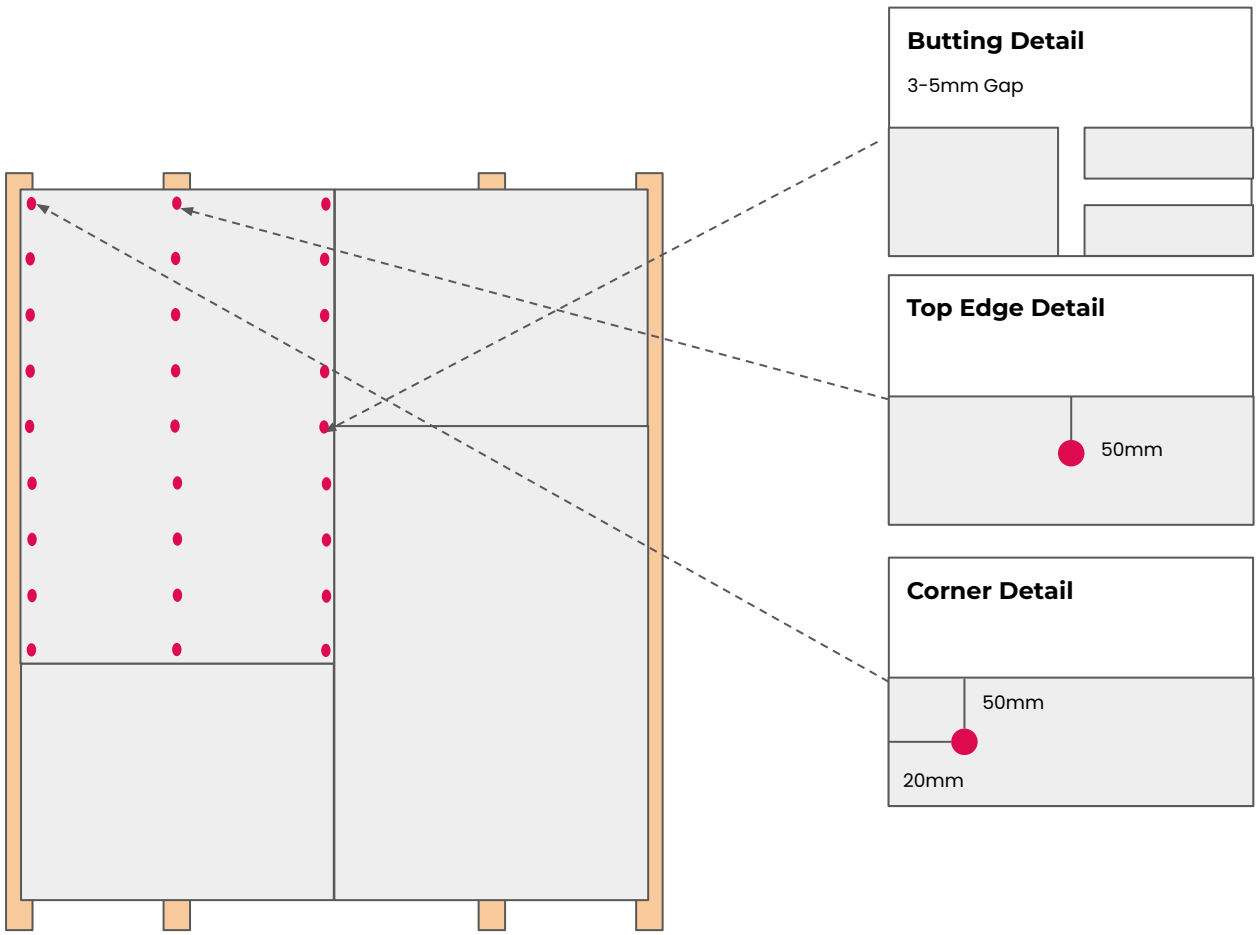
Areas Of Use.

Construction of interior and exterior walls of all kinds-of buildings.
In ventilated facade systems.
Insulated and plaster cladding systems.
All surfaces in prefabricated and light steel structures.
Structural sections made of steel construction.
As the finishing material by just painting.
All kinds of coating, wall paper or backerboard of-ceramics on facades and interior surfaces.
Back of tiles in wet room environments.
Indoor and outdoor ceiling applications.
In external and internal render applications.
In suspended ceiling systems.
Construction of fire wall.
In areas where sound insulation is required.
In thermal insulation systems.
Backer board of roof covering materials.
As backing material of cabinets or panels.
On walls, parapets and ceilings of balconies and terraces.
Soffit and fascia cladding.
Steel column and fake column cladding.
Application of boundary fences on construction sites.
On shaft walls.
Out-building roofing.

References.

A: Staggered Pattern (as shown below)

B: Fixing Locations (as shown in red circles below)



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Step 5. Leaving adequate space:

Mostly render boards are either fixed to a timber batten, insulation, or a timber/steel frame building. Whilst timber is a cost effective and a fast build option it is one of the most susceptible substrates to movement. Any highly exposed locations or where boards have been exposed to excessive moisture for prolonged periods then minor expansion of boards may occur or heat can cause the timber frame/substrate to twist or move. By leaving a 3-5mm expansion gap (as shown in the above drawing) there is an allowance for slight movement and as the render system incorporates a mesh layer then little or no movement will be transferred through to the topcoat.

Note: For most structures horizontal and vertical, movement/expansion joints are required at 15m spans (maximum) or to match movement/expansion joints in the substrate behind. The specific use, spacing and detail of expansion joints should be clarified with the render manufacture, architect or building control prior to install.

Fixings for use with:

Light Gauge Steel studs shall:

○ be self/drilling and self-countersinking, wingtip or similar, stainless steel screws (or suitably treated against corrosion);

○ have minimum dimensions of 4.8 mm diameter by 38 mm long;

○ have a maximum spacing of 300 mm at the perimeter and 400 mm to the intermediate studs.

Timber Frame studs shall:

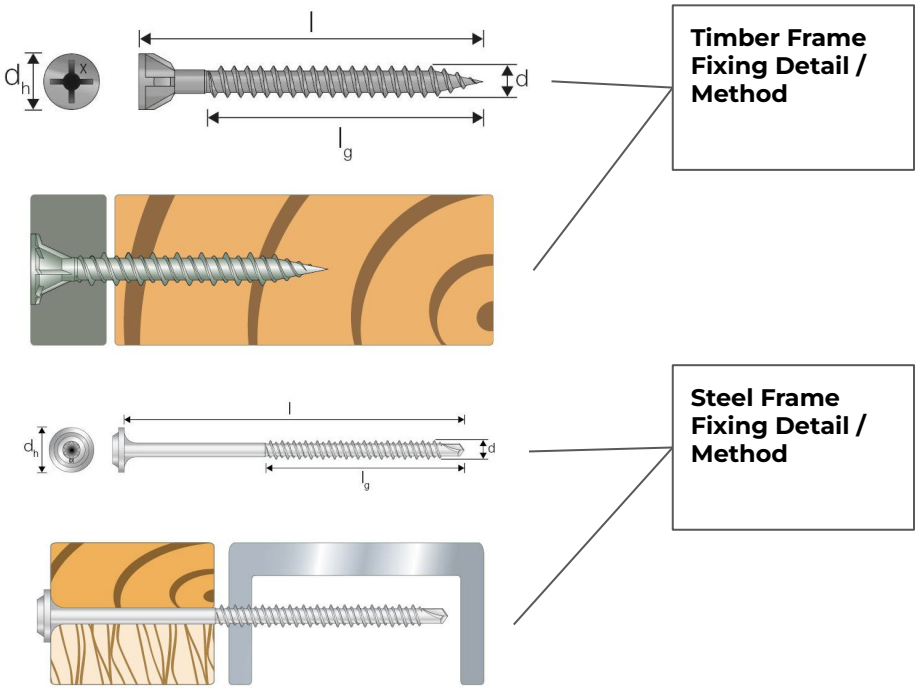
○ be self/drilling and self-countersinking or similar, stainless steel screws (or suitably treated against corrosion);

○ have minimum dimensions of 4.2 mm diameter by 42 mm long;

○ have a maximum spacing of 150 mm at the perimeter and 300 mm to the intermediate studs.

Which way round do I Install the CemPlate?

Install the CemPlate print side up. You will see the text on top corner of the board. If this text can not be located, the boards have a smooth side (the printed side) and a slightly textured side.



Test Report As Carried Out By EcoRend.

Adhesion Test (As tested by EcoRend) 0.513KN/mm2

50 x 50mm sections of the Ecorend FX4 base coat was placed onto the Cembloc board at a depth of 5mm. Scrim mesh was placed into the initial base coat layer, before applying a 2nd coat of base coat. Adhesion strengths completed at 28 days.

The system we recommended for CemPlate Render Boards is ecorend FX4 applied in two 3mm layers with the inclusion of mesh, followed by SP15 Silicone primer then SR15 Thin Coat Render.

CemPlate Tested With EcoRend FX4.

Adhesion Strength	Failure Mode
0.471	CF - Base Coat
0.460	CF - Base Coat
0.513	CF - Base Coat
0.434	CF - Base Coat
0.470	Average (KN/mm2)

Key:

CF- Base Coat

Verdict: Approved render carrier to EcoRend.

Health And Safety Best Practises.

Dust: When processing the boards, for example, cutting, drilling, sanding etc, these will generate dust. As a result, attention should be paid to the dust particles generated and measures put in place to minimise their effect. Please process the boards in a well ventilated area with the use of localised extraction to avoid dust inhalation.

Skin Contact:

- **Acute Effect:** The dust from these products may cause irritation of the skin due to friction but is not absorbed through the skin.
- **Precautions**: Direct contact with dust and debris should be avoided by wearing full body covering overalls. .
- **Measures taken if effect experienced:** Wash thoroughly with soap and water.

Ingestion:

- **Effect:** When processing, the dust may affect food and beverages, indigestion of the dust may result in abdominal discomfort.
- **Precautions**: Do not attempt to eat the board, put the board near the face and avoid touching your face and mouth when previously dealt with the board.
- **Measures taken if effect experienced:** Ingestion is unlikely due to product size. However should this occur, seek medical attention immediately.

Inhaled:

- **Effect:** The dust from processing may cause irritation of nose, throat, lung and cause coughing and sneezing via breath.
- **Precautions**: During dry cutting ,drilling, routing , sanding and any continuous handling where dust is generated, used an approved particulate dust mask .
- **Measures taken if effect experienced:** Go into a open area with plenty of air circulation outdoors and drink plenty of water, until acute effects have gone.

If any acute effects persist, seek medical attention immediately.

Handling Requirements.

Minimise the dust generation at the workplace. When there is cutting, sawing, sanding or grinding during the installation and handling of this product, it should be carried out at well ventilated area (e.g. outdoor, open-area). Work area should be cleaned regularly by wet sweeping or vacuuming.

Cembloc panels are stacked on timber pallets. The boards must be stored in a ventilated and dry environment on a flat, level surface protected from contamination. To avoid excessive flexing of the boards, long edges must be supported when lifting and handling.

Storage:

Store in a dry well ventilated area. The boards should be protected from excessive humidity and temperature changes, such as rain, sun, wind and moisture. The boards must always be stored on flat level surface.

Contact us.

Let’s talk about your project.

We are proud of our reputation for excellent service.
Whether you require, part or full load deliveries, our team will make sure we do everything possible to help you and your project, as together we can build better.

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