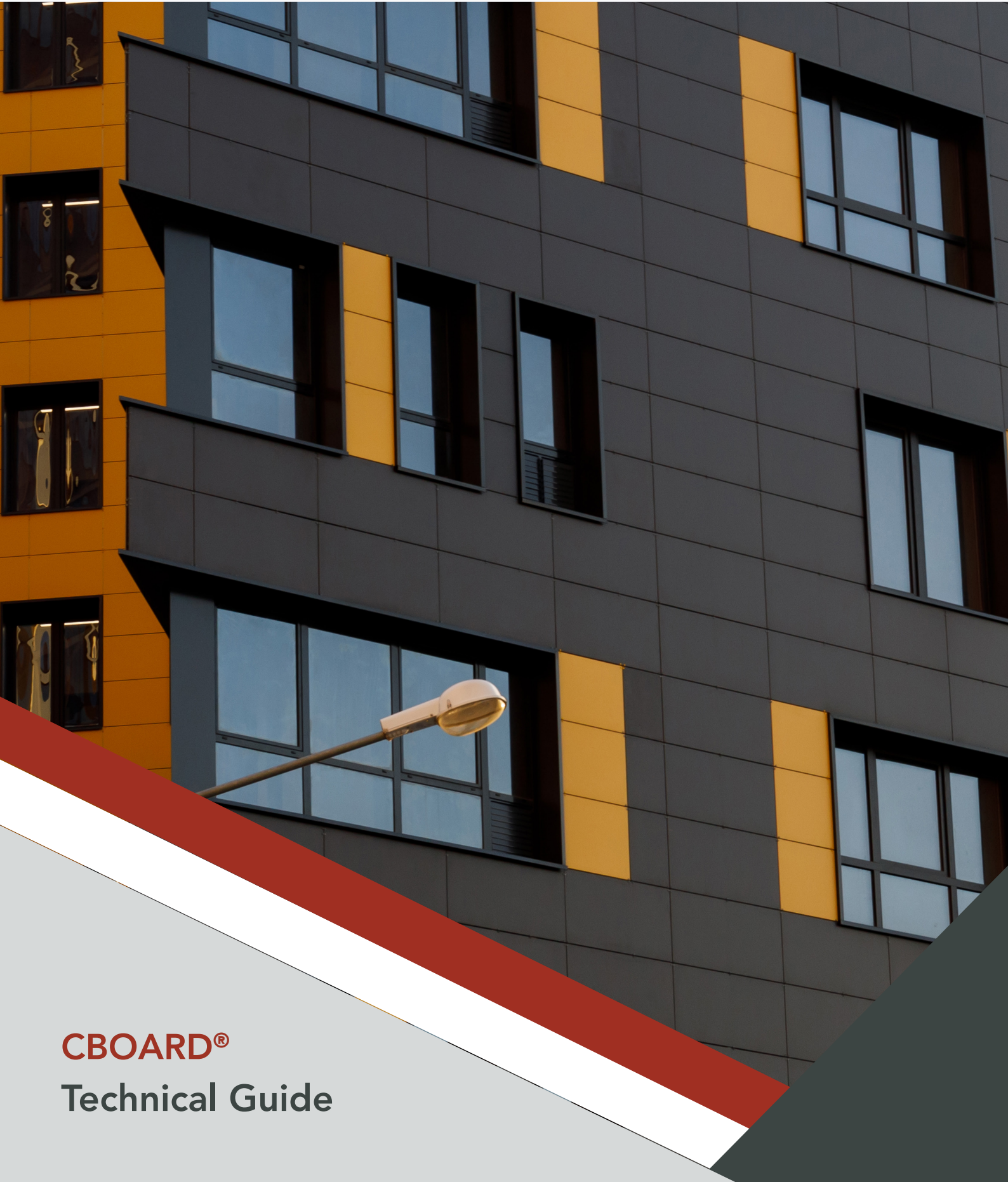




CBOARD®
Technical Guide

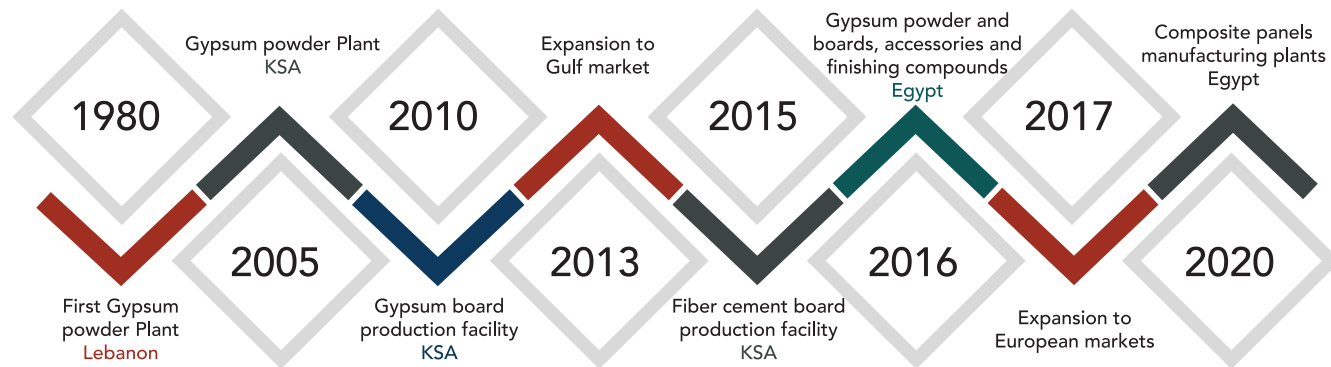
BEAM Consolidated is the leading manufacturer of finishing building materials in the region. Our expertise in manufacturing is refined by years of research and development. We provide durable finishing building materials and solutions. Our manufacturing process takes place in our facilities spread across the MENA region.

With more than 50 years of experience in the industry, we refined our manufacturing methods to produce the highest quality products. Our aptitude in the sector, our technology, and our team of experts, enable us to design and manufacture efficient construction products, systems, and solutions.

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ABOUT BEAM CONSOLIDATED



BEAM Consolidated is a leading regional manufacturer of finishing building materials, systems, and solutions since 1958.

Our expertise in manufacturing is refined by years of experience, research, and development. From quarry to finished products, BEAM Consolidated delivers high quality products manufactured to the highest standards enabling construction professionals to deliver excellence, every time.

BEAM Consolidated's team of dedicated engineers provides technical assistance throughout all project phases. We make sure our systems and solutions are installed correctly to achieve high performance and durability to the satisfaction of customers.

BEAM Consolidated abides by OHSAS 18001 health and safety standards to secure the safest working environment for its employees and partners and to improve business performance. Our products are made of nontoxic materials, promoting a safe and eco-friendly output that suits all health and environmental requirements.



21 Million m²
Cement Boards

4 Quarries

2 Million Tons Gypsum
Powder

73 Million m² Gypsum
Boards

the POWER
to BUILD

45 Modern Production
Lines

2 Research and
Development Centers

50+ Products Annually

+2 Thousand Talents

ABOUT CBOARD®



ABOUT CBOARD®

Cboard® is a robust, lightweight, aesthetically pleasing fiber cement board that can accommodate a wide range of finishes, indoors and/or outdoors. It is manufactured from a combination of Portland cement, high purity silica sand, wood pulp, water, and non-toxic additives using the Hatschek process. Hatschek process is currently used to produce non-asbestos, cellulose fiber reinforced cement composites. Fibers are pulped in warm water then mixed with cement, silica sand, and other additives. This mixture involves building up a few laminations on a large size roller. When the desired sheet thickness is achieved, the green sheet is cut away and deposited on a conveyor, where it is trimmed to size then sacked and left for a short period of pre-curing. The laminated sheet is then cured using an autoclaving technology that combines extreme pressure and heat to enhance the chemical reaction between the cement and silica to produce durable fiber cement, Cboard®. In addition, flat sheets are preferably compressed to improve their strength and, if required, to receive an embossed surface in form of stone texture or wood grain.

BOARD COMPOSITION



- **Portland Cement:** is produced from the burning of limestone, clay, and iron which is highly resistant to fire, water, and termites. It is the base material in fiber cement.
- **Water:** The fiber cement panel can adapt to the ambient humidity; the shrinkage and swelling behavior of the panels is crucial for their mounting. Thus, the Water dissolves the cellulose or wood component in the mixture and activates the cement and helps cure it during the drying process.
- **Pulp:** It provides the fiber cement with structure and flexibility so that it is easier to work with and install. It also helps the fiber cement maintain durability and resilience, improving the bearing capacity of the composite.
- **High purity silica sand:** Helps support and strengthen the mixture, improves flexural strength to the mix and fills small voids.

CBOARD® RANGES

- Cboard® RG (regular) is used for interior partitioning, dry lining, interior and exterior suspended ceilings.It can be installed in either direction in Cboard® systems while offering durable and reliable results with no required maintenance.
- Cboard® WP (waterproof) contains silica oil, it helps protect tile installations and wall cavties from moisture penetrations, eliminating the need to spend extra time applying waterproof coating across the entire surface area of your wall. Excellent waterproofing solution for extenal and interior use.
- Cboard® HD (high density) is a very firm and durable board with superior physical and mechanical properties. It can be used in external partitions and facades subjected to rain and wind pressures.

Board	Dimensions (mm)		Edges
	Width	Length	
Cboard® RG	1200	2400-3000	SE/TE
Cboard® WP	1200	2400-3000	SE/TE
Cboard® HD	1200	2400-3000	SE/TE

APPLICATION

- Internal Walls
- Internal Walls Linings
- External Claddings
- Floorings
- Planks



APPLICATION PER PRODUCT

PRODUCT APPLICATION														
Types	Cboard® Regular							Cboard® Waterproof						
Thicknesses (mm)	4.5	6	9	12	15	18	20	4.5	6	9	12	15	18	20
Application														
Internal ceiling	●	●	●					●	●					
External ceiling	●	●	●					●	●					
Internal partition		●	●	●	●				●	●	●	●		
External walls		●	●	●	●				●	●	●	●		
General external wall in wet area									●	●	●	●		
High rise building wall/ External cladding										●	●	●		
Flooring						●	●						●	●

PRODUCT APPLICATION												
Types	Cboard® HD (smooth & textured)						Cboard® HD (plank lap & click)					
Thicknesses (mm)	9	10	12	15	18	20	9	10	12	15	18	20
Application												
Internal partition		●	●	●								
External walls		●	●	●			●	●	●	●		
General external wall in wet area							●	●	●	●		
High rise building wall/ External cladding	●	●	●	●			●	●	●	●		
Flooring					●	●						

KEY FEATURES

- Thermal insulation
 - Fire resistant
 - Termite resistant
 - Weather resistant
 - Impact resistant
 - Aesthetically pleasing
 - Easy handling
- Abrasion resistant
 - Seismic resistant
 - Dissipates heat from the sun
 - Rainscreen for the building structure
 - Low maintenance
 - Multiple designs



Fire resistance



Advanced impact resistance



Termite resistant



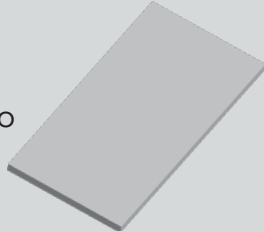
Thermal insulation

PHYSICAL APPEARANCE

With meticulous design and continuous refinement, Cboard® is a versatile board that offers the texture of timber, stone, marble, and more whilst delivering the maintenance and durability of fiber cement boards.

Made from an advanced material that’s five times thicker than typical vinyl cladding, Cboard® is fire, moisture, rot, and pest resistant. It’s unaffected by rain and hail damage and can be installed to withstand winds.

From classic to contemporary, Cboard® will achieve the perfect look and finish of all interior or exterior projects.

Pattern	Thickness	Dimensions (LxW)
Cboard® Mono 	4.5-20 mm	1200 x 2400 mm (Special production and cutting are performed based on project requirements.)
Cboard® Wood 	8-20 mm	1200 x 2400 mm (Special production and cutting are performed based on projects requirements.)

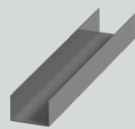
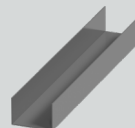
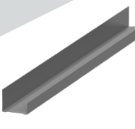
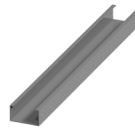
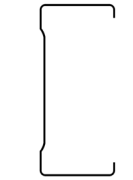
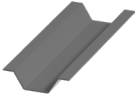
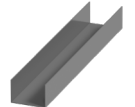
Cboard® Plaster	8-20 mm	1200 x 2400 mm (Special production and cutting are performed based on projects requirements.)
Cboard® Stone	8-20 mm	1200 x 2400 mm (Special production and cutting are performed based on projects requirements.)
Cboard® Line	8-20 mm	1200 x 2400 mm (Special production and cutting are performed based on projects requirements.)

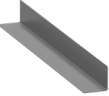
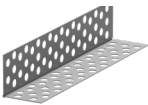
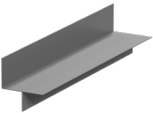
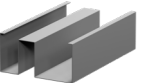
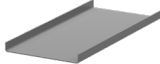
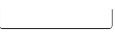
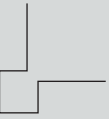
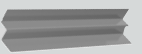
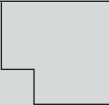
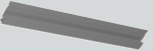
PHYSICAL SPECIFICATIONS

PROPERTIES	UNIT	Cboard® RG	Cboard® WP	Cboard® HD	STANDARD
Thickness	mm	12	12	12	ASTM C 1186
Density	Kg/m³	1309	1446	1730	ASTM C 1186
Flexural Strength Longitudinal Direction	MPa	12.7	16.86	22.04	ASTM C 1186
Flexural Strength Transverse Direction	MPa	7.24	11.05	12.19	ASTM C 1186
Water Absorption	%	31.98	<5	23.16	ASTM C 1186
Moisture Content	%	9.86	4.63	5.13	ASTM C 1186
Linear Change	%	0.09	0.03	0.04	ASTM C 1186
Direct Screw Withdrawal	N	742	677	492	ASTM C 1186
pH Value	-	9.9	9.91	10.47	ASTM C 1186
Thermal Conductivity	W/m.K	0.2135	0.1546	0.3274	ASTM C 518
Smoke Development Index (SDI)	-	5	5	5	ASTM E 84
Flame Spread Index (FSI)	-	0	0	0	ASTM E 84
Reaction to Fire	-	Class A	Class A	Class A	ASTM E 84

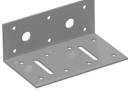
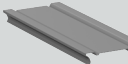
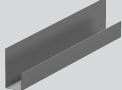
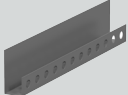
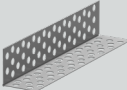
TOOLS AND ACCESSORIES

Metal Frames

Photos	Cross-Section	Size (mm)	Description	Height (mm)	Thickness (mm)	Length (mm)	Zinc Coating	Standard
		42	Gframe™ Track Fixed to the floor or ceiling to support the Gframe™ Studs forming a channel for Cboards®.	25-30	0.45-1.5	3000 - 5000	G60-90	ASTM C645 ASTM A653
		50						
		64						
		70						
		75						
		92						
		100						
		125						
		150						
		42	Gframe™ Deflection Head Track Fixed to the ceiling to support the Gframe™ C-stud and to enhance system performance. It can be used as an alternative to Gframe™ Tracks.	50 - 75	0.45-1.5	3000	G60-90	ASTM C645 ASTM A653
		50						
		64						
		70						
		75						
		92						
		100						
		125						
		150						
		64	Gframe™ J-Track Fixed to the floor or ceiling in lining systems.	25 - 50	0.45-1.5	3000	G60-90	ASTM C645 ASTM A653
		100						
		150						
		40.5	Gframe™ C-stud Used as vertical members of the partition system and lining system.	34 - 36	0.45-1.5	3000 - 8000	G60-90	ASTM C645 ASTM A653
		48.5						
		62.5						
		68.5						
		73.5						
		90.5						
		123.5						
		148.5						
		34	Gframe™ Furring Channel Used in ceiling frameworks and for drywall lining systems	22	0.45-1.5	3000	G60-90	ASTM C645 ASTM A653
		38	Gframe™ C-38 Channel Used in ceiling frameworks.	12	0.45-1.5	3000	G60-90	ASTM C645 ASTM A653

Photos	Cross-Section	Size (mm)	Description	Height (mm)	Thickness (mm)	Length (mm)	Zinc Coating	Standard
		25	Gframe™ Perimeter Angle Supports channels using anchors and forms the perimeter of the drywall ceiling system.	25	0.45-1	3000	G60-90	ASTM C645 ASTM A653
		20 30	Gframe™ perforated L angle Used at the top and bottom base of the framing system. It ensures air ventilation.	20 - 30	0.45-1	3000	G60-90	ASTM C645 ASTM A653
		30	Shadow Gap Used at the perimeter of plasterboard ceilings or door frames.	20	0.45-1.5	3000-6000	G60-90	ASTM C645 ASTM A653
		92	Silent Stud Used to increase the acoustic performance of the system.	45	0.55 - 1.5	3000	G60-90	ASTM C645 ASTM A653
		40 50 64 70 75 92 100 125 150	Noggin Track Used to support the Gframe™ C-studs.	32	0.55 - 1.5	3000	G60-90	ASTM C645 ASTM A653
		72 150	Fixing Channel Used as a horizontal member in drywall partitions and provides support for Gframe™ C-studs.	8 - 10	0.7 - 1.5	3000	G60-90	ASTM C645 ASTM A653
		20-34	External Cornel Profile Used where two planks join at 90 degrees		1-1.5	3000	G60-90	ASTM C645 ASTM A653
		25-35	Internal Cornel Profile Used for the finishing of an internal corner		1-1.5	3000	G60-90	ASTM C645 ASTM A653
			Stater Profile Used to start the framing system		1-2	3000	G60-90	ASTM C645 ASTM A653

ACCESSORIES

Photos	Cross-Section	Description	Width (mm)	Height (mm)	Thickness (mm)	Length (mm)	Steel grade	Standard
		Threaded Rod Used in suspended ceilings to fix the ceiling frames.	-	-	6 - 8	2000	G60-90	ASTM C645
		C-Clamp Fixed by the threaded rod and holds the main channel for suspended ceilings.	30 35	40	0.8	25	-	ASTM C645
		Slotted L -bracket Used for wall lining (internal, external) in areas facing excessive load.	50	75	0.8 - 3	80 125	G60-90	ASTM C645
		L-Bracket Used to fix vertical studs or horizontal supports.	50 75 100	50 75 100	0.8 - 3	50	G60-90	ASTM C645
		U-Bracket					G60-90	ASTM C645
		Control Joint Used in walls and ceilings for gaps up to 5mm. Galvanized setting beads joint with PVC rubber.	-	-	0.4	-	G60-90	ASTM C645
		Furring Channel Joiner Used to join the furring channels in suspended ceiling systems.	67	100	0.85	-	G60-90	ASTM C645
		Casing Bead Used in ceiling systems to maintain a straight line and hide the cut edges of Gboard®.	13-30	10 13 16	0.4	3000	G60-90	ASTM C645
		Stopping Bead Used to provide a smooth finish in a suspended ceiling application.	13-30	10 13 16	0.4	3000	G60-90	ASTM C645
		Silent Hanger Used to hold the main channel in silent ceiling systems.	30 35	75	0.8	25	G60-90	ASTM C645
		Perforated corner bead Used for all external corner reinforcements.	30 32	30 32	0.4	3000	G60-90	ASTM C645

Photos	Cross-Section	Description	Width (mm)	Height (mm)	Thickness (mm)	Length (mm)	Steel grade	Standard
		Shadow line Stopping Angle Used for ceilings, doors, parameters, windows, and curved applications.	10 – 30 (40 mm total)	10	0.4	3000	G60-90	ASTM C645
		Click Clip Used to fix the planks to the framing system	-	-	0.6-1	-	G60-90	ASTM C645

FASTENERS



Zinc Plated Self-tapping Screw
Used for fixing boards to metal structures for frames with a thickness up to 0.7mm.



Zinc Plated Self-drilling Screw
Used for fixing boards to metal structures for frames with a thickness bigger than 0.7 mm.



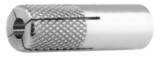
Zinc Plated Self-drilling Screw with Wings
Mounting Cboard® to steel structures.



Anchor Bolts
Used to fix the Gframe™ to the soffit structure.



Wafer Head Screw
Fixing metal to metal structures.



Drop-in Anchor
Fixing the threaded rod.



Color matched screw
Used for all visible fixings



Rivet Fastener
Used for board to metal fixing in riveted cladding

TOOLS



Electrical Drill
Used to drive drywall screws into the boards.



Electrical Circular Saw
Electrical saw with a round flat blade.



Snapper Shear
Used to score and snap with no dust emission.



Centralizing Drill Bit
Used for board to metal fixing in riveted cladding



Circular Blade
185mm blade for clean and fast cutting.



Rivet Gun
Used to guide rivets.



Trowel
Used for applying joint coats (100,200,300mm).



Countersink
Used to make small holes that facilitate screwing.



Hand Sander
Used for board sanding.



Spatula
Used for applying joint compounds and sealants.



Corner Tool
Used for corner jointing treatment.

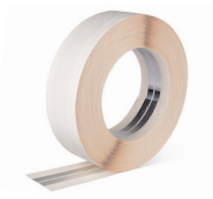
ACCESSORIES



Ccoat™
Fiber Cement Multi-purpose
Compound.



Mesh Tape
Joint reinforcing
tape.



Corner Metal Tape
Joint reinforcing tap
for corners.



Fiber Mesh Sheet
Joint reinforcing tape.



Fire and Acoustic sealant
Used to achieve the necessary fire
and acoustical performance



Water Barrier Membrane
Protective membrane to
prevent moisture from being
trapped.



Fiberglass
Insulator material
made of fiberglass.



Rockwool
Insulator material
made of rocks.



CBOARD® INTERIOR



Section .02

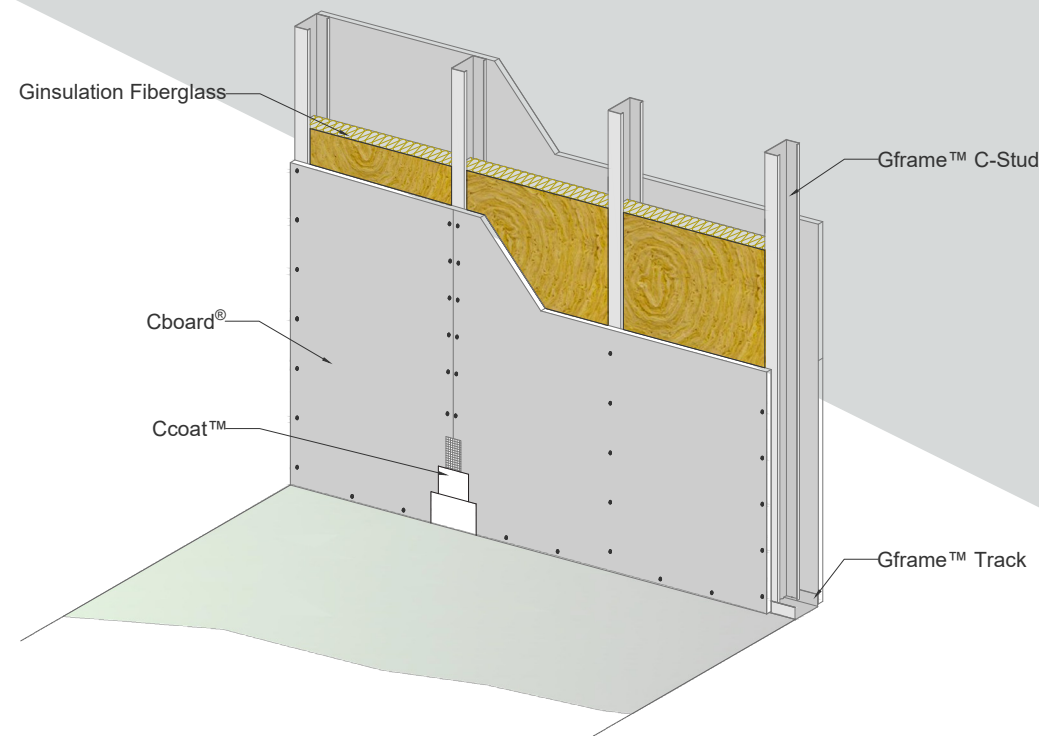
CBOARD® INTERIOR



CBOARD® INTERIOR

With superior durability, sound insulation, moisture and fire resistance, Cboard® is ideal for interior applications such as wall partitions with a framing system applied without the use of mortar or plaster. It is a replacement to brick/cement wall systems that require a longer construction time. Cboard® RG, Cboard® HD, and Cboard® WP are all applicable for interior systems.

Partition



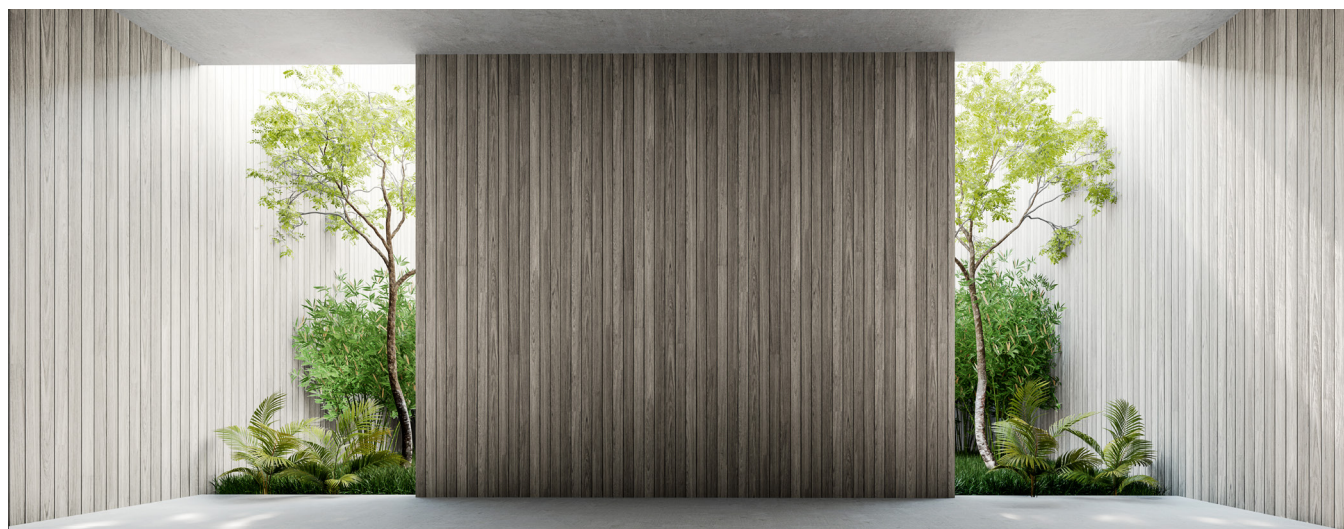
INSTALLATION GUIDE

Framing

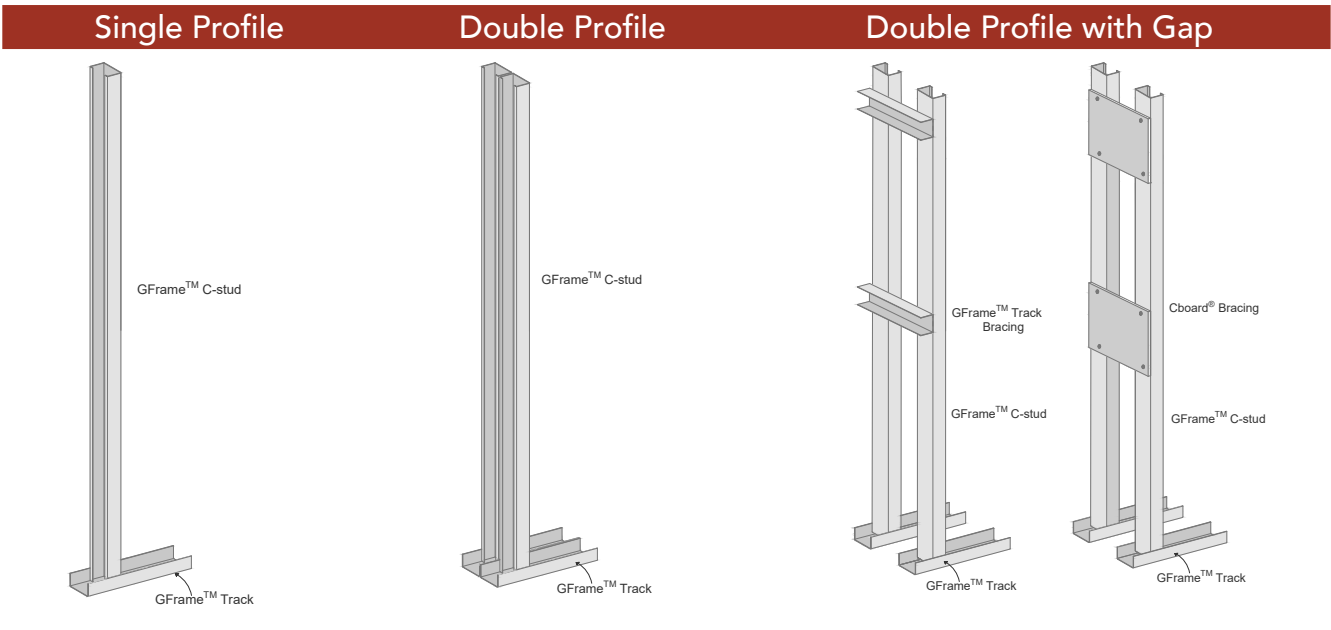
- Step 1** Mark the boundaries of the Gframe™ Track to be installed on the floor and ceiling using the appropriate measurement tape and marking tools.
- Step 2** Fix the bottom and top Gframe™ Tracks using Anchor Bolts spaced at 600mm center to center, or as provided by calculations.
- Step 3** Use a minimum of 0.55mm galvanized or zinc coated Gframe™ C-Stud spaced at a maximum of 600mm center to center.

Boarding

- Step 1** Apply Cboard® to the Gframe™ C-Stud making sure that the panels of both wall sides are staggered.
- Step 2** Fix Cboard® using Zinc Plated Screws at a vertical spacing of 200mm center to center on edges, and 300mm in the board's field.
- Step 3** Keep fasteners up to 50mm away from Cboard® corners and 12mm from Cboard® edges (horizontally).
- Step 4** Leave 4 mm gaps between the edges of Cboard®.
- Step 5** Install Cboard® vertically or horizontally.



Stud position



- Use a Stamp Pliers Tool or Wafer Head Screw, 4.2 x 13mm metal to metal, to attach the pieces.
- The overlap length (L) depends on the stud web and thickness:

Stud Web (mm)	L (mm)
Gframe™ C-stud 40.5	400
Gframe™ C-stud 50	500
Gframe™ C-stud 70	700
Gframe™ C-stud108.5	1085
Gframe™ C-stud 148.5	1485

Cutting

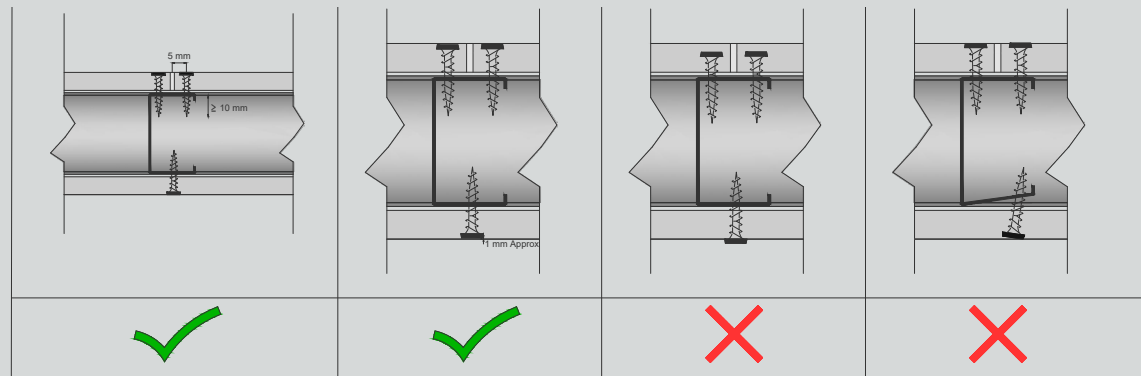
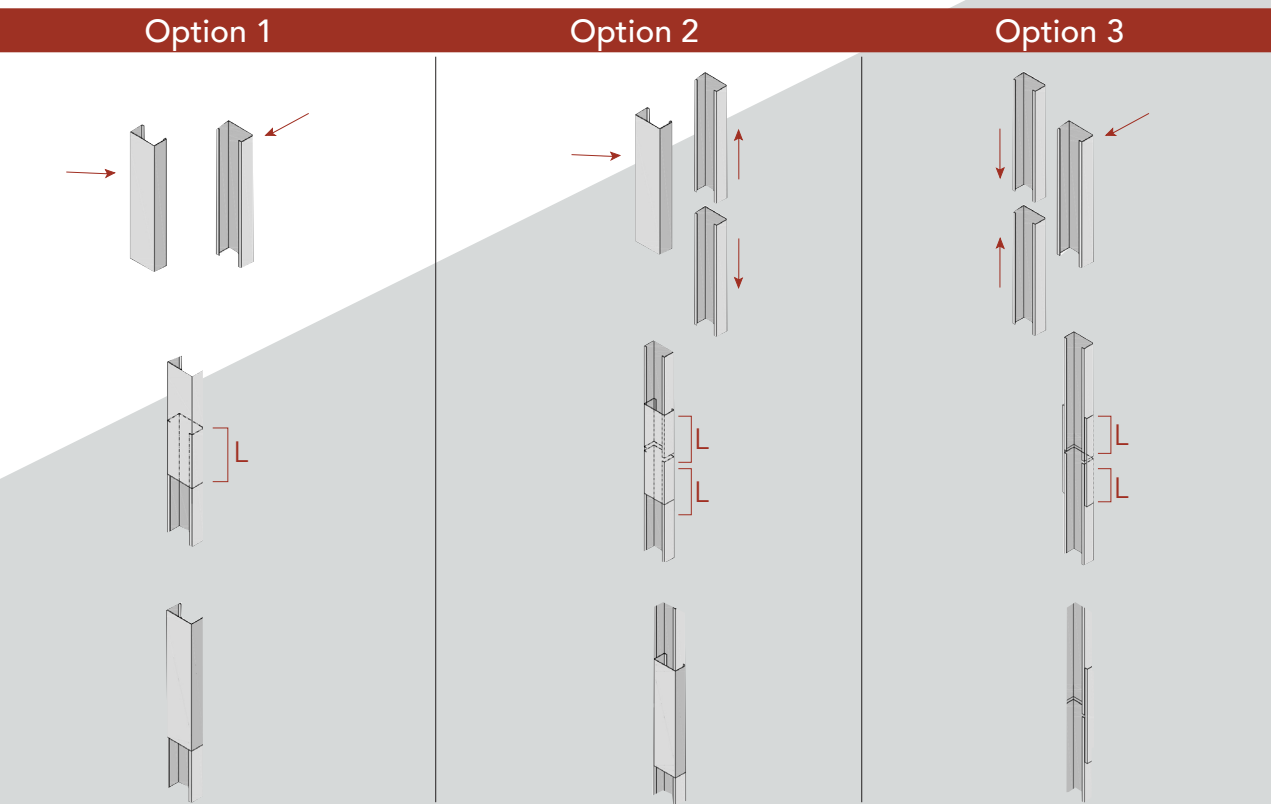
- Define a straight line on the sheet as a guide, then make the cut along the line by passing the saw base perpendicular to the sheet. When using an electrical saw, you should use a vacuum to clean up dust. Cutting should be done slowly to let the vacuum machine collect the emitted dust.
- The snapper shear is the fastest and safest among the cutting tools for fiber cement boards. It does not emit dust, achieves a quiet operation, and is ideal for indoor usages.
- For making small cutouts for pipes, score the needed perimeter using an electrical drill then break it out carefully from the other face of Cboard® using a hammer.

Fastening

- Use the Zinc-Plated Screw as a fastener. For metal screws, the size and length of the screw is in accordance with the thickness and number of Cboard® layers.
- Use a Countersink to make small holes for easy screwing. The screw should be immersed 2 to 3mm inside the hole then hidden with Ccoat™ Fiber Cement Multi-Purpose Compound.

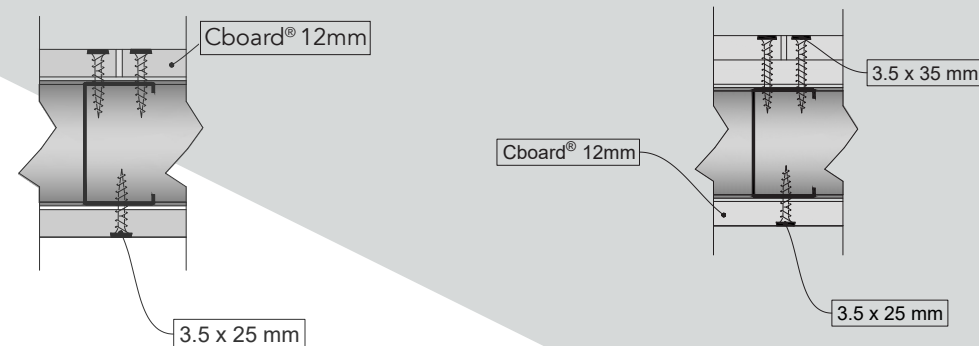
Stud extension

The vertical extension of the Gframe™ C-studs can be done in 3 different ways:



Board thickness	First layer		Second layer		Third layer	
	Screw dimensions	Spacing	Screw dimensions	Spacing	Screw dimensions	Spacing
12 mm	3.5x25 mm	250 mm	3.5x35 mm	500 mm	3.5x45 mm	700 mm
15 mm	3.5x35 mm	250 mm	3.5x45 mm	500 mm	3.5x60 mm	700 mm

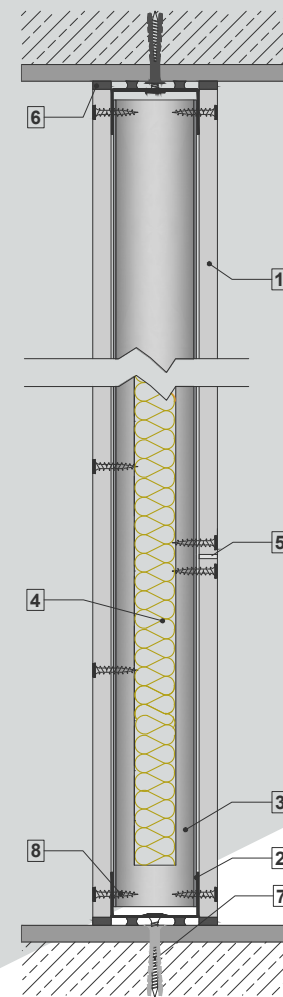
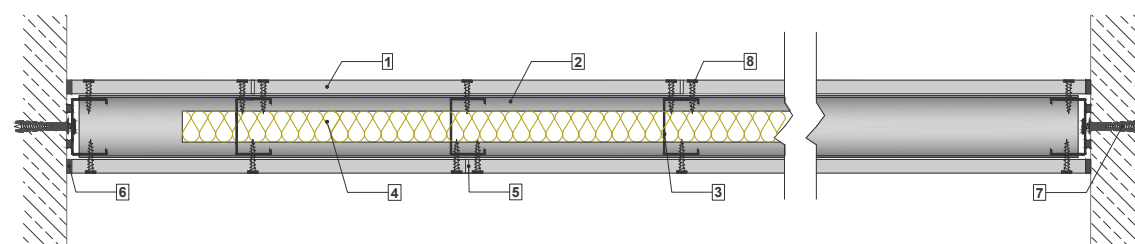
Note: All screws should be Zinc plated (Self-Tapping and Self-Drilling)



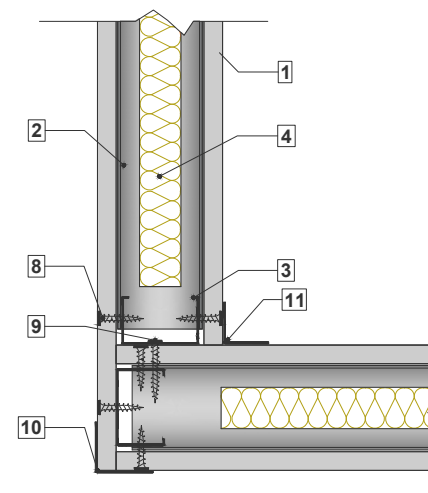
Jointing

- Step 1** Apply one layer of primer with a width of 150mm on the jointing area to clean the dust and increase the bonding between the board and Ccoat™.
- Step 2** Apply a mesh tape on the joint and then place the first Ccoat™ on the tape with a width of 50mm.
- Step 3** Smooth the first layer two hours after it dries by using sanding paper then, apply the second layer of Ccoat™ with a width of 100mm.
- Step 4** Apply a third layer having a width of 200mm following the same technique.
- Step 5** Smooth the surface once the third layer dries and prepare it for finishing.

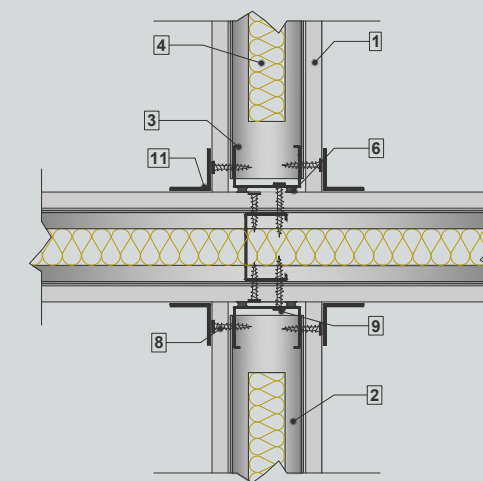
Plan section



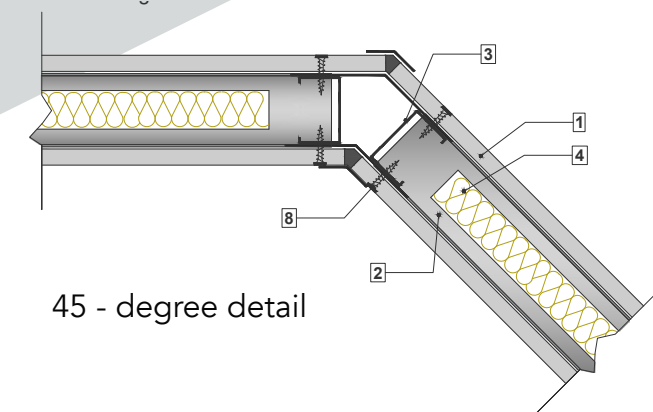
Floor/Ceiling connection



Corner detail



T-Junction



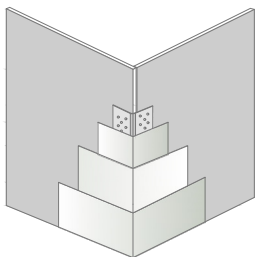
45 - degree detail

Number	Description
1	Cboard®
2	Gframe™ Track
3	Gframe™ C-Stud
4	Ginsulation Fiberglass
5	Ccoat™
6	Fire and Acoustic Sealant
7	Anchor Bolt
8	Zinc Screw 3.5x35 mm
9	Zinc Screw 3.5x40 mm
10	Corner bead
11	Metal corner tape

Corner treatment

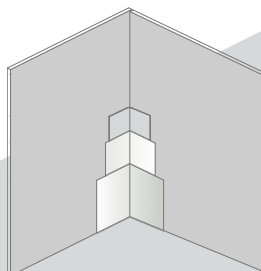
External corners

- Step 1** Apply the first layer of Ccoat™ to both sides of the angle with a width of 140mm (70mm from each side).
- Step 2** Fix the perforated Angle Bead on the Ccoat™ layer and press it until the compound comes out from the holes.
- Step 3** Level the surface of Ccoat™ with the surface level of Cboard®.
- Step 4** Apply the second layer of Ccoat™, once the first one dries having a width of 200mm.
- Step 5** Apply a third thin layer of Ccoat™ having a width of 300mm.
- Step 6** Soften the surface by using an external angle trowel and prepare it for finishing once the compound dries.



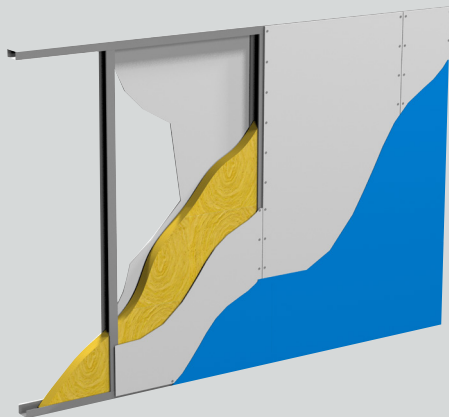
Internal corners

- Step 1** Place a thin layer of Ccoat™ with a width of 60mm.
- Step 2** Stick metal corner tape on the corner after folding it in the middle.
- Step 3** Apply the second with a width of 75mm from each side by using a Trowel Tool.
- Step 4** Apply the third with a width of 100mm from each side by using a Trowel Tool.
- Step 5** Soften the surface and prepare it for finishing once the compound dries.



Finishing

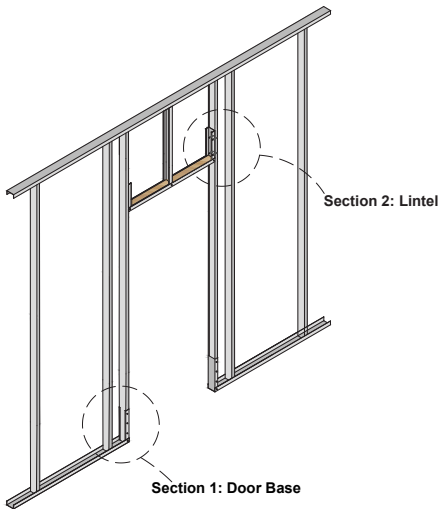
- Step 1** Remove the residual sanding dust.
- Step 2** Coat the surface with a primer using a brush to reduce Cboard®'s absorption of the paint.
- Step 3** Use emulsion-based paints or emulsion-based silicate paints for final coatings.
- Step 4** Ceramic tiles (for toilets/kitchen...) or wallpapers can be applied for further finishing options.



Door installation

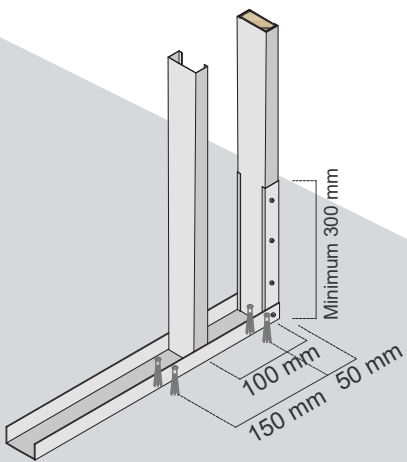
a) Door framing

Wall weight (kg)	Framing method
<55	Double box of Gframe™ C-stud.
>55	Double box of Gframe™ C-stud and wood or hollow steel square.



Section 1

- Step 1** Place Gframe™ C-stud a 100mm away from the center of the supporting frame.
- Step 2** The first anchor bolt supports the Gframe™ Track on the ground and is distanced 50mm away from the edge of the door opening.
- Step 3** The second anchor bolt will be 150mm away from the edge of the door opening.
- Step 4** The Gframe™ Track on the ground should be extended and bent towards the door stud at 300mm above the ground.

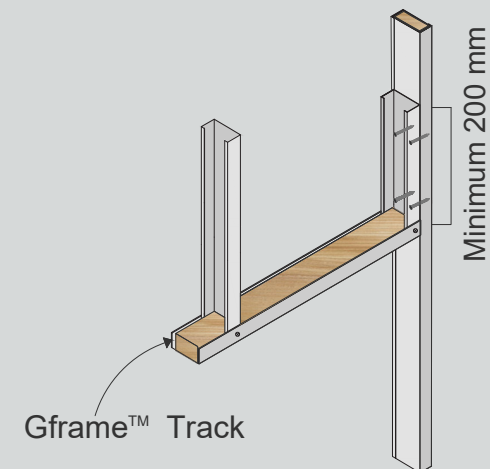


Section 2

- Step 1** Prepare a 1400mm Gframe™ Track for the door with 1000mm for the door width.
- Step 2** Cut 200mm from the flanges on both ends of the Gframe™ track and bend them at a 90 degrees angle.
- Step 3** Place the Gframe™ track horizontally to the relevant height and attach it to the web of the Gframe® C-stud using suitable screws.

Step 4 Cut Gframe™ C-stud at a suitable height and place it between the head of the door and the ceiling Gframe™ Tracks.

Step 5 This section will be movable until Cboard® is attached to the frame.



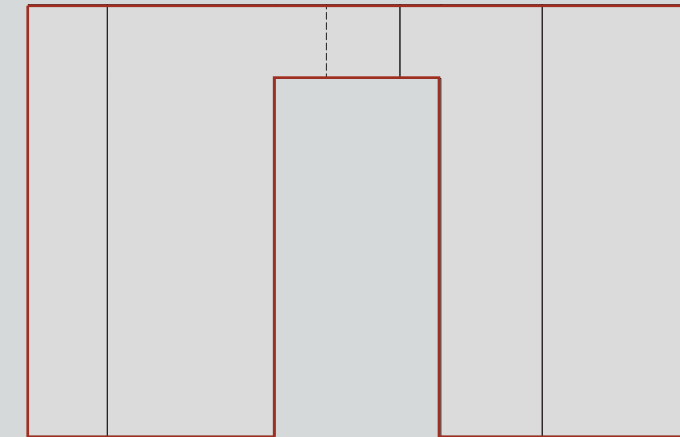
b) Door cladding

Step 1 Stagger the cladding for door openings.

Step 2 Cut Cboard® into L-shaped panels to avoid weak points at the edge of the door frame.

Step 3 The joint should be at least 200mm away from the edge of the door.

Step 4 Stagger Cboard® from both ends of the wall.

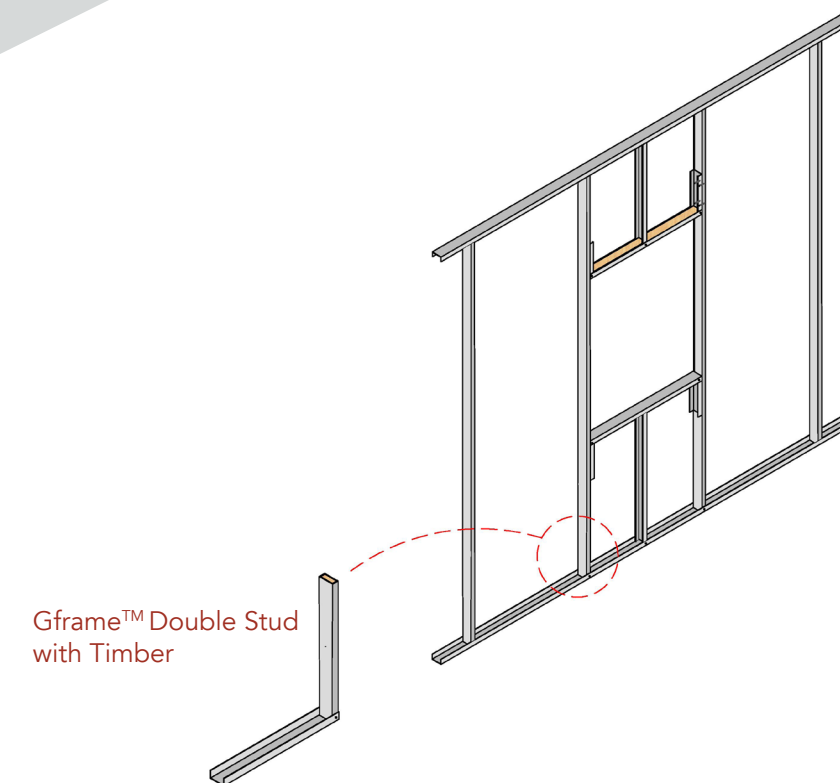


Window installation

Step 1 The installation of the window frame follows the same steps of the door frames.

Step 2 The Gframe™ C-studs are always reinforced with wood or hollow steel square regarding the weight of the window.

Step 3 Cut Cboard® into L-shaped panels and stagger them from both ends of the wall.

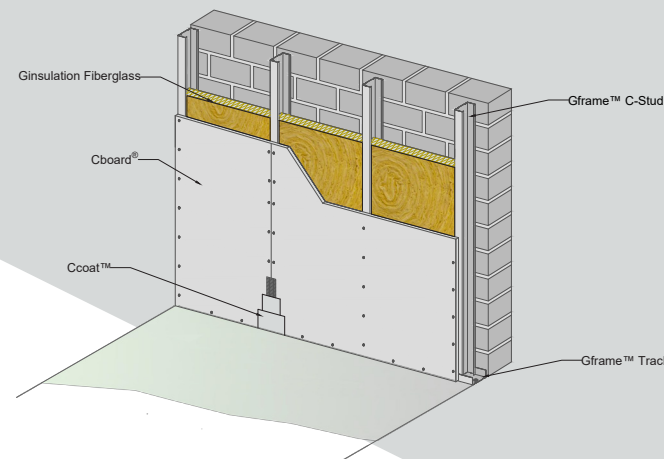




INTERIOR LINING SYSTEMS

1.Lining With Gframe™ C-studs

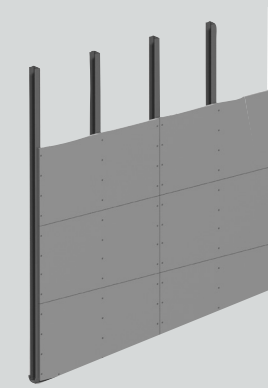
This system consists of 1 layer of Cboard® on one side + Gframe™ C-studs.



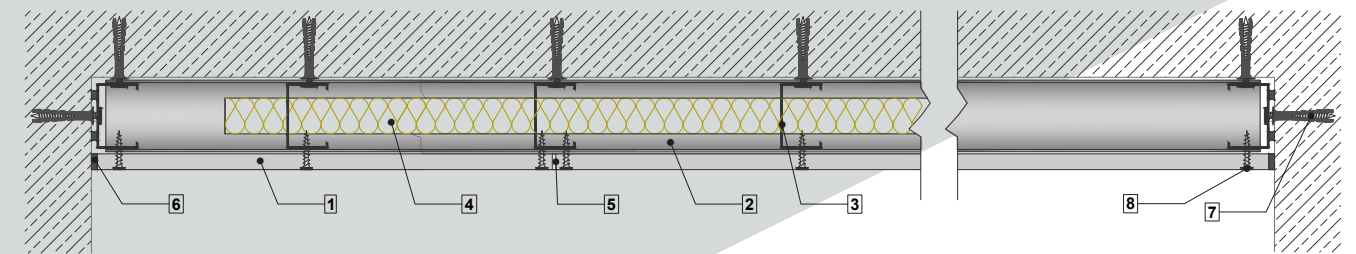
Installation

- Step 1** Mark the boundaries of the Gframe™ Tracks to be installed by using the appropriate measurement tape and marking tools.
- Step 2** Snip the Gframe™ Tracks according to the required length.
- Step 3** Apply a fire and acoustic sealant (or insulation tape) under the Gframe™ Tracks and Gframe™ C-stud, forming the perimeter of the frame.
- Step 4** Fix the bottom and top Gframe™ track and the Gframe™ c-studs on the edges using anchor bolts spaced at 600mm center to center (or as provided by calculation).
- Step 5** Snip the Gframe™ C-studs 5mm shorter than the clear height between the top and bottom tracks.
- Step 6** Attach the Gframe™ C-studs vertically and fit them into the top and bottom Gframe™ tracks. The standard distance between the Gframe™ C-studs is 600mm. It may vary based on design requirements.
- Step 7** Fasten Cboard® using zinc plated screws at a vertical spacing of 200mm center to center on edges, and 300mm in the boards field.
- Step 8** Fix the Gframe™ C-stud on the wall using Anchor bolt, if needed (based on design requirements).

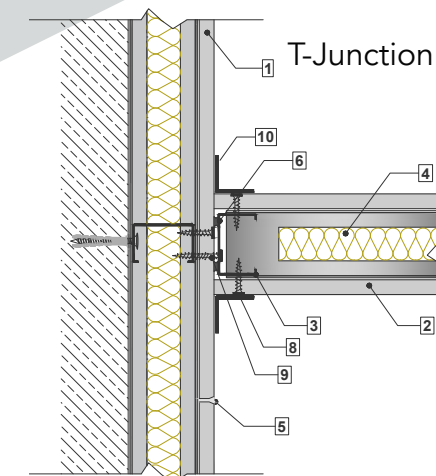
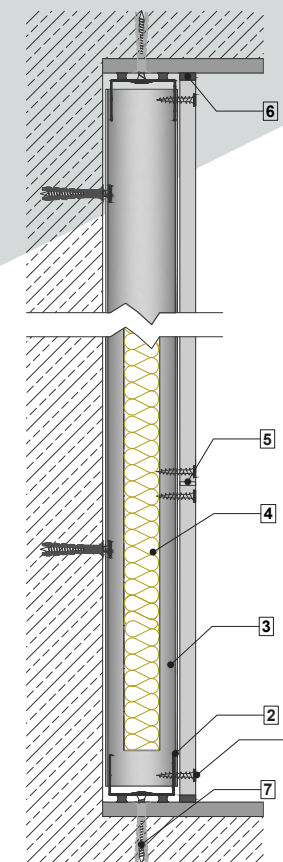
Note Gframe™ profiles and methods of installation should meet the building regulations and requirements.
Profile thicknesses and spacings are designed to have deflection values below the allowable limits.



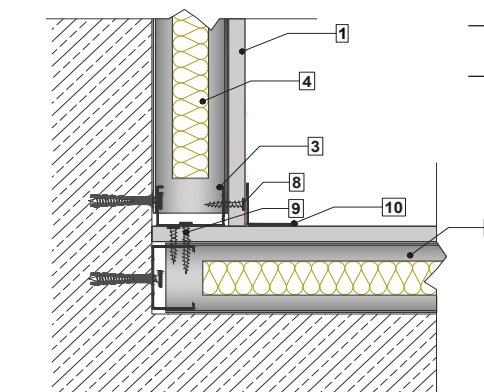
Plan section



Floor/Ceiling connection



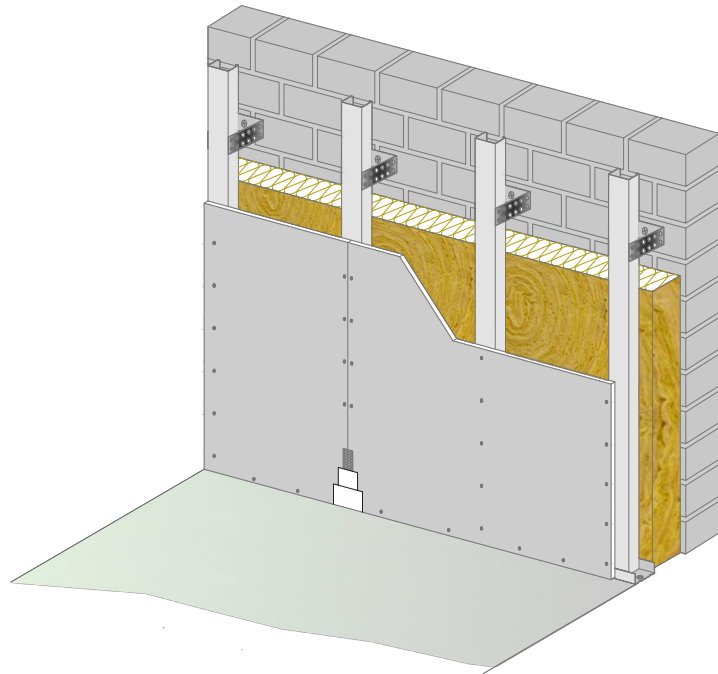
Corner detail



Number	Description
1	Cboard®
2	Gframe™ Track
3	Gframe™ C-stud
4	Ginsulation Fiberglass
5	Ccoat™
6	Fire and Acoustic Sealant
7	Anchor Bolt
8	Zinc Screw 35 mm
9	Zinc Screw 40 mm
10	Metal Corner Tape

2.Lining With Universal Brackets

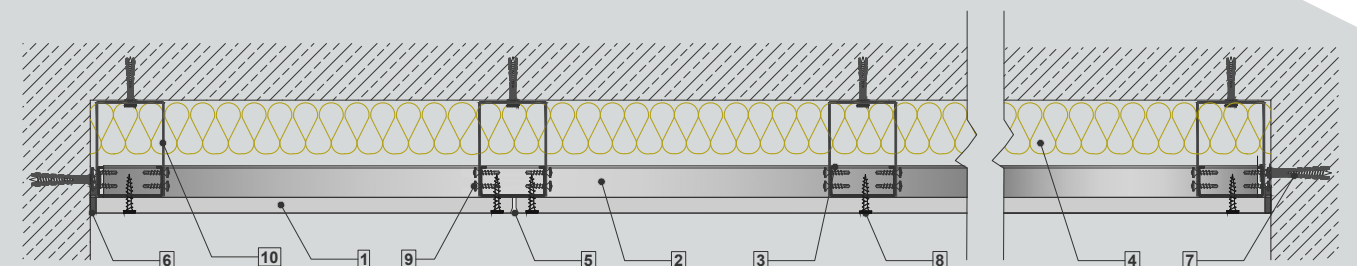
This system consists of 1 layer of Cboard® on one side + Gframe™ C-studs with universal brackets.



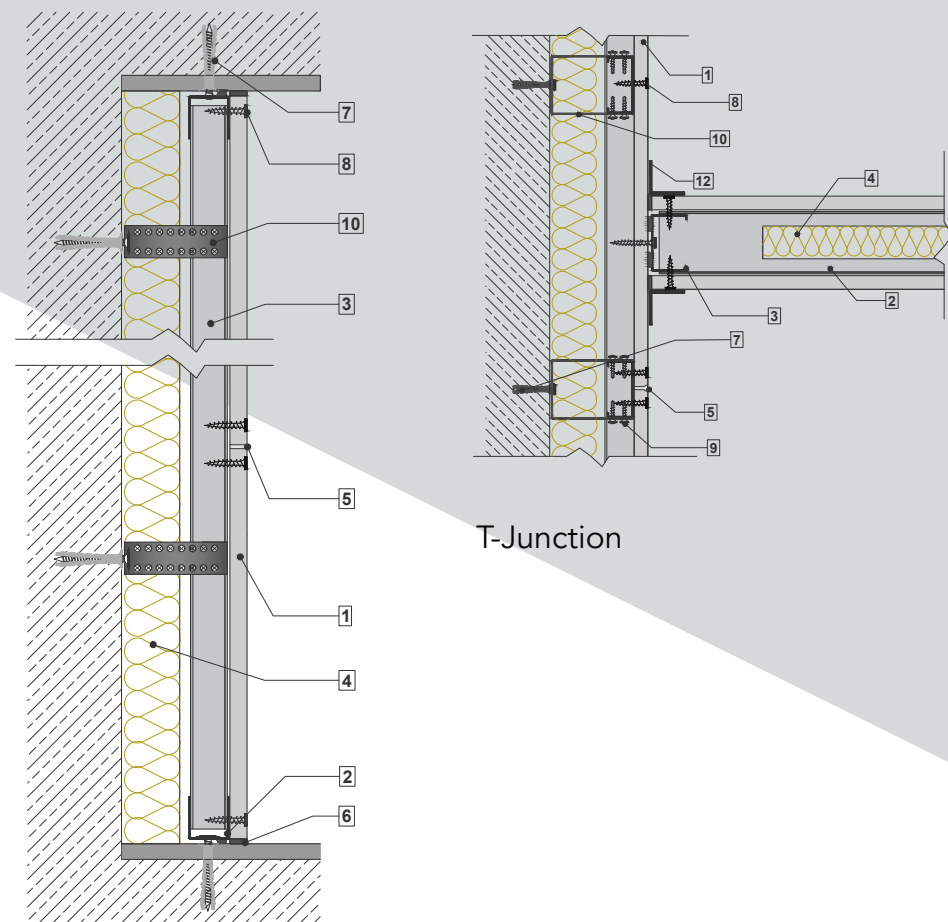
Installation

- Step 1** Mark the boundaries of the Gframe™ Tracks to be installed by using the appropriate measurement tapes and marking tools.
- Step 2** Snip the Gframe™ Tracks according to the required length.
- Step 3** Apply a fire and acoustic sealant (or insulation tape) under the Gframe™ Tracks and Gframe™ C-studs forming the perimeter of the frame.
- Step 4** Fix the bottom and top Gframe™ Tracks and the Gframe™ C-studs on the edges using anchor bolts spaced at 600mm center to center (or as provided by calculation).
- Step 5** Fix the universal brackets to the wall using anchor bolts spaced at 800mm centers (vertically).
- Step 6** Add insulation if required.
- Step 7** Snip the Gframe™ C-studs 5mm shorter than the clear height between the top and bottom Gframe™ tracks.
- Step 8** Attach the Gframe™ C-studs vertically and fit them into the top and bottom Gframe™ Tracks. Fix the Gframe™ C-studs to the universal bracket using wafer head screw. The standard distance between the Gframe™ C-studs is 600mm. It may vary based on design requirements.
- Step 9** Fasten Cboard® using zinc plated screws at a vertical spacing of 200mm center to center on edges, and 300mm in the board's field.
- Step 10** Leave a 4mm gap at the joints between the board edges.

Note Gframe™ profiles and methods of installation should meet the building regulations and requirements. Profile thicknesses and spacings are designed to have deflection values below the allowable limits.

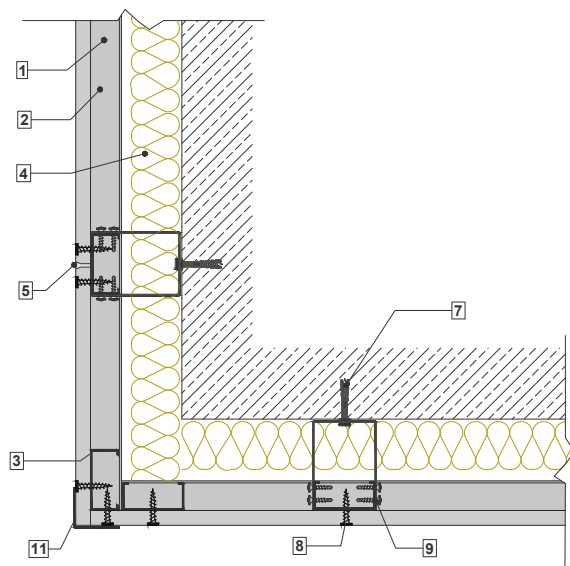


Plan section



T-Junction

Floor/Ceiling connection



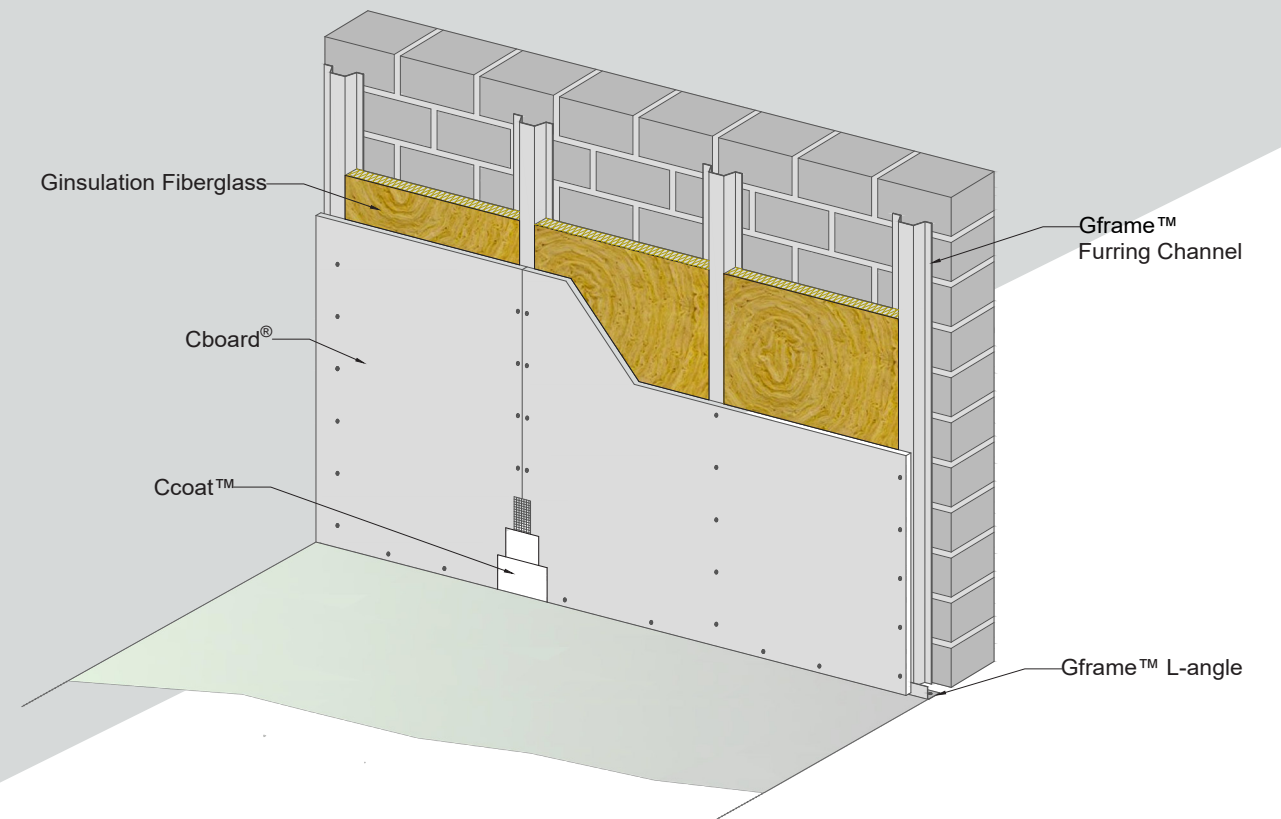
Corner detail

Number	Description
1	Cboard®
2	Gframe™ Track
3	Gframe™ C-stud
4	Ginsulation Fiberglass
5	Ccoat™
6	Fire and Acoustic Sealant
7	Anchor Bolt
8	Zinc Screw 35mm
9	Wafer Head Screw
10	Universal Bracket
11	Corner Bead
12	Metal corner tape

For additional information contact the technical team.

3.Lining With Gframe™ Furring Channel

This system consists of 1 layer of Cboard® on one side + Gframe™ Furring Channels.

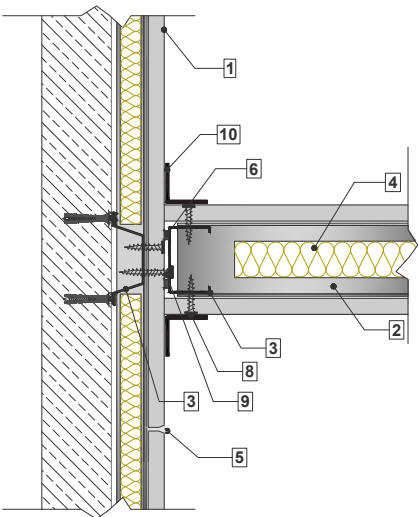
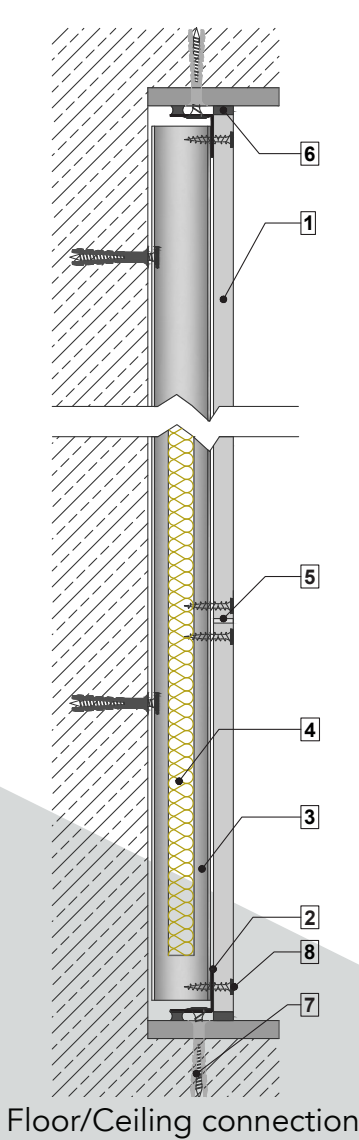
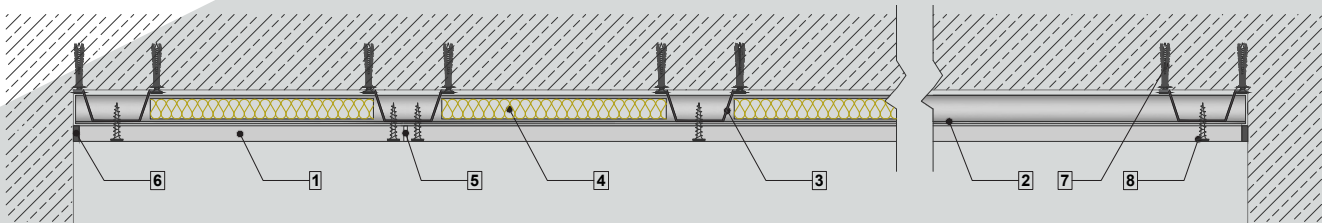


Installation

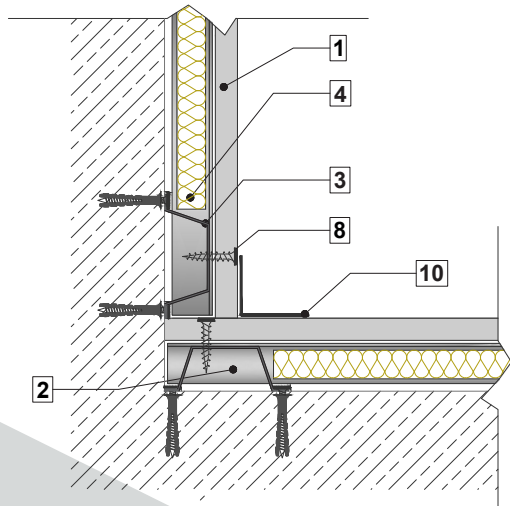
- Step 1** Mark the boundaries of the Gframe™ L-angle to be installed using the appropriate measurement tape and marking tools.
- Step 2** Snip the Gframe™ L-angle according to the required length.
- Step 3** Apply a fire and acoustic sealant (or insulation tape) under the Gframe™ L-angle forming the perimeter of the frame.
- Step 4** Fix the bottom and top Gframe™ L-angle using Anchor Bolts spaced at 600mm center to center (or as provided by calculations).
- Step 5** Snip the Gframe™ Furring Channel to obtain a length 5mm shorter than the height between the top and bottom Gframe™ L- angle.
- Step 6** Fix the Gframe™ furring channel to the wall using anchor bolts spaced 600mm centers.
- Step 7** Fasten Cboard® using zinc screws spaced at 300mm centers in the board field and 200mm centers at the board edges.
- Step 8** Leave a 4mm gap at the joints between the board edges.

Note Gframe™ profiles and methods of installation should meet the building regulations and requirements.
Profile thicknesses and spacings are designed to have deflection values below the allowable limits.

Plan section



T-Junction



Corner detail

Number	Description
1	Cboard®
2	Gframe™ L-angle
3	Gframe™ Furring Channel
4	Ginsulation Fiberglass
5	Ccoat™
6	Fire and acoustic Sealant
7	Anchor Bolt
8	Zinc Screw 35mm
9	Zinc Screw 40mm
10	Corner Metal Tape

CBOARD® EXTERIOR



Section .04

CBOARD® EXTERIOR

CBOARD® EXTERIOR

Cboard® Exterior is a full fledge system that provides comfort and protection. This system is the perfect protective barrier for buildings with uncompromising performance and flexible designs brought by Cboard® HD and WP.

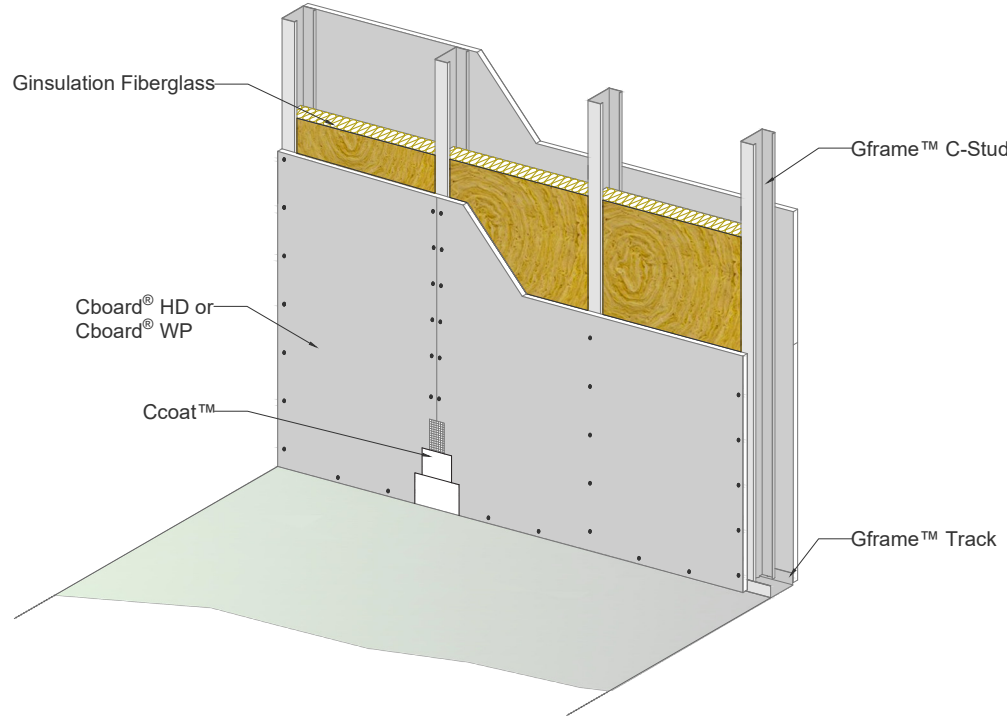
EXTERIOR WALLS

Cboard® exterior walls are considered alternative solutions to hollow block walls due to their high-performance. Fiber Cement Boards are energy efficient panels and require low maintenance which provides a durable system. Cboard® Waterproof and HD are mainly used in exterior applications.

Comparison between cboard and conventional wall

Properties	Cboard®	Conventional wall	Notes
Fire resistance	1-3 hours	30 to 60 mins	Values are taken for an average wall thickness of 150 mm. Cboard® drywall systems can be designed to reach a higher performance depending on the number of layers and insulation materials.
STC rating	50-65 dB	40-60 dB	
Thermal transmittance (U value)	0.3 – 3 W/m². K	5.1 W/m². k	
Weight	35-65 kg/m²	>150 kg/ m²	

Installation Guide



Framing

- Step 1
- Use a minimum of 0.7mm galvanized or zinc coated Gframe™ C-stud with a minimum flange width of 35mm to allow proper board fixing. If these dimensions were not available on site, it is recommended to use a back-to-back stud which will ensure the required stiffness.
- Step 2
- Mark the boundaries of the Gframe™ Tracks on the floor and ceiling using appropriate measurement tape and marking tools.
- Step 3
- Fix the bottom and top Gframe™ Tracks using Anchor Bolts spaced at 600mm center to center (or as provided by calculations).
- Step 4
- Install the Gframe™ C-studs at a maximum spacing of 600mm center to center. The spacing may vary according to the wind speed/pressure applied on the building.

Refer to the below table for a general classification. For more critical situations it is recommended to refer to the structural engineer for advanced calculations.

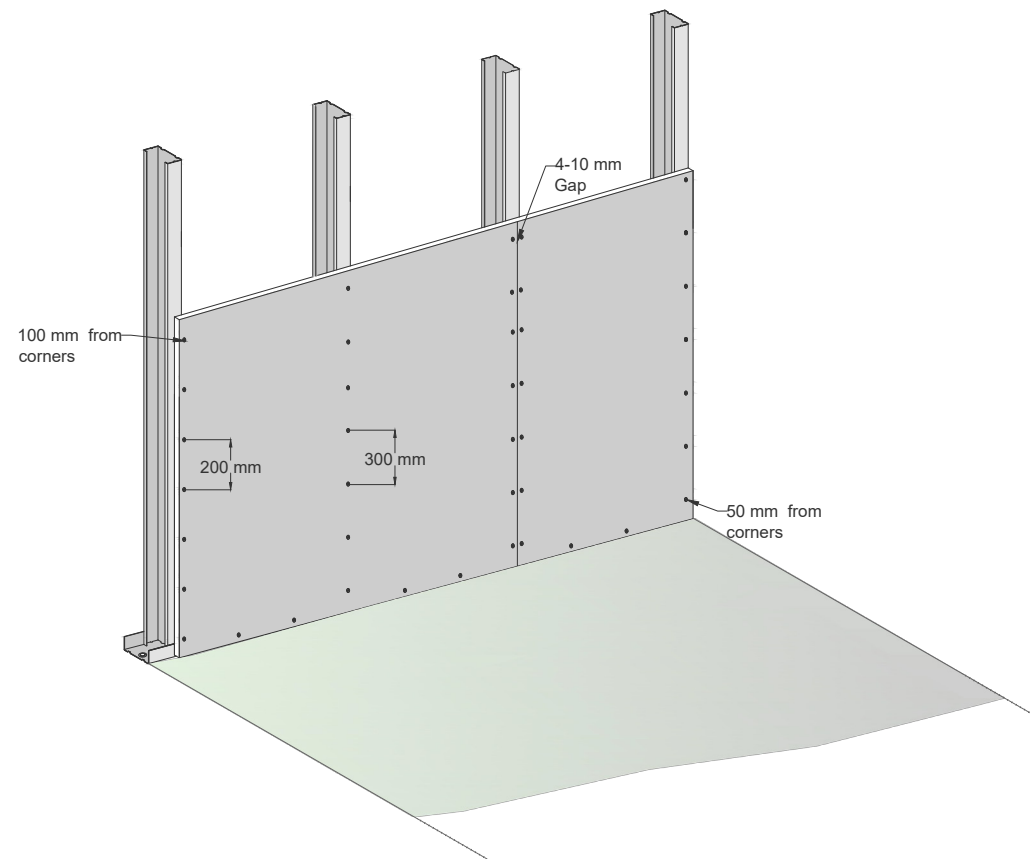
Wind Speed (m/s)	Stress Pressure (Pa)	Maximum Stud Spacing (mm)
28	500	600
33	700	600
41	1000	600
50	1500	400
60	2200	300
70	3000	300

For additional information contact the technical team.

- Step 5
- Use a double stud for doors, windows, or any other openings to ensure additional strength to the system.

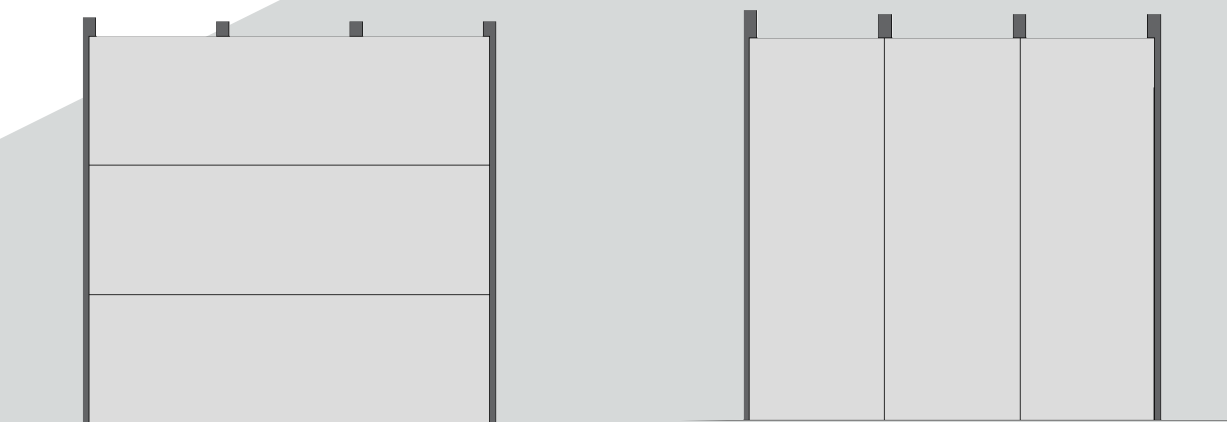
Boarding

- Step 1
- Fix Cboard® using Zinc Plated Screws at a vertical spacing of 200mm center to center on edges, and 300mm in the board's field.
- Step 2
- Horizontally: Keep fasteners up to 50mm away from Cboard®'s corners and 12mm from Cboard®'s edges.
- Step 3
- Vertically: Keep fasteners up to 100mm away from the Cboard®'s corners.
- Step 4
- Leave a 4 to 10mm gap between the edges of Cboard®.



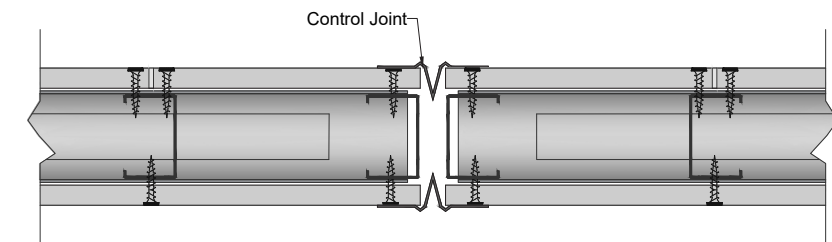
Step 5 It is recommended to use Gframe™ Flat Strip (70x0.7mm) at the board's joint. It is easier to install a Gframe™ Flat Strip on site rather than Gframe™ Tracks. If the Gframe™ Flat Strip is not available, you may use any steel cut available at the construction site.

Note The boards can be installed in a horizontal or vertical layout.



Control Joint

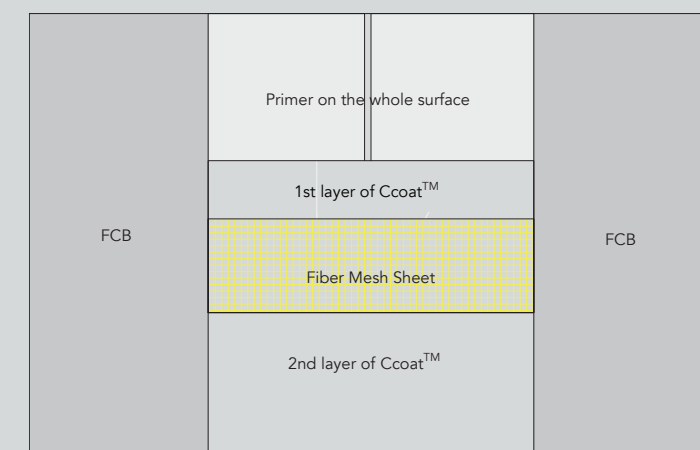
- A horizontal movement control joint is recommended every 3.7m of the wall height.
- A vertical movement control joint is recommended every 6m of the wall length.
- The minimum control joint width is 6mm.
- At each vertical control joint there will be 2 Gframe™ C-studs from each side.



Finishing

Squared Edge

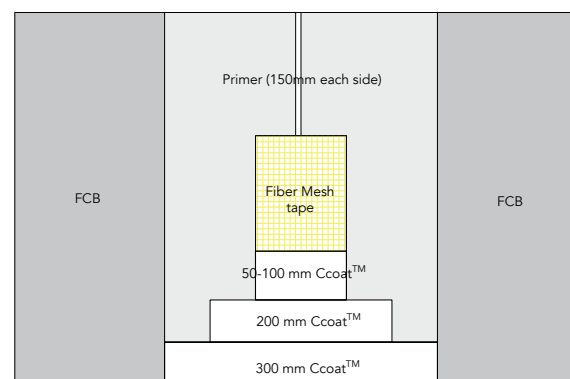
- Step 1** Apply a primer on the surface of Cboard® and allow it to dry for 30 mins.
- Step 2** Apply Ccoat™ Fiber Cement Multi-Purpose Compound using a Trowel on the entire surface.
- Step 3** Immediately apply a fiber mesh sheet and press it firmly to ensure that it sticks to the first layer of Ccoat™.
- Step 4** Apply a second layer of Ccoat™ once the first layer dries and trowel the surface to smoothen it.
- Step 5** Apply a primer before painting Ccoat™ to ensure that the surface is clean and free from dust.



Tapered Edge

- Step 1** Apply a primer on the jointing area at a width of 300mm (150mm from each side).
- Step 2** Allow the primer to dry for 30 mins.
- Step 3** Apply the fiber mesh tape and apply the first layer of Ccoat™ using a trowel with a width of 50-100mm.
- Step 4** Apply a second layer of Ccoat™ once it dries, with a width of 200mm, 30 mins later.
- Step 5** Apply a third layer of Ccoat™ once it dries, with a width of 300mm 60 mins later.
- Step 6** Coat the head of the screws using Ccoat™ and allow it to dry for 24 hours.
- Step 7** Sand Ccoat™ after 24 hours to smoothen the surface using a sanding machine.
- Step 8** Clean the surface from dust using a wet sponge and allow it to dry before the final paint coat.

Note It is recommended to use a primer before applying the painting coat to ensure that the surface is clean and free from dust.



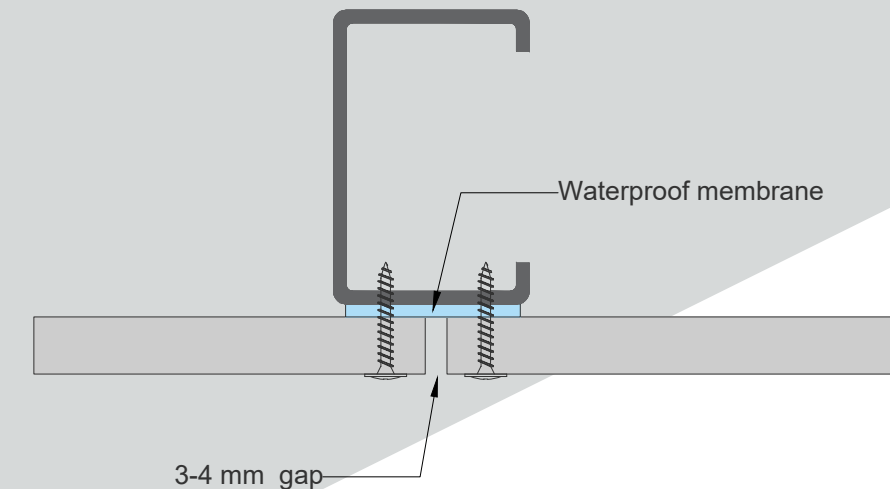
Sealed joint

- Step 1** Leave a gap of 3 to 4mm between 2 Cboard®.
- Step 2** Treat the exposed metal profile with waterproof membrane to protect it from moisture and water exposure.
- Step 3** Apply a primer inside the gap and leave it for 60 minutes to dry.
- Step 4** Cover Cboard® edges with a masking tape to apply the PU sealant in the gap.

Step 5 Remove the tape after fully filling the gap upwards using the PU sealant.

Step 6 Cover the head screws with Ccoat™.

Step 7 Sand it and smooth it after it dries.



VENTILATED FAÇADE CLADDING

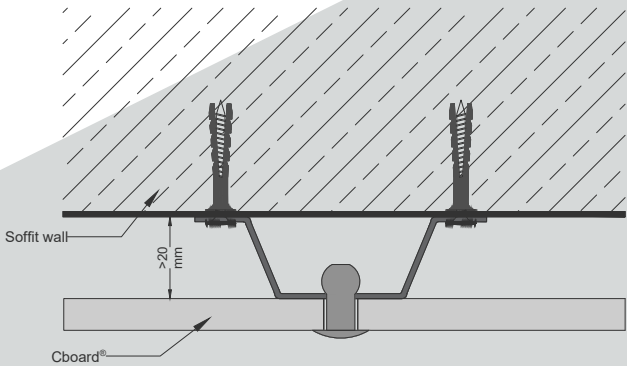
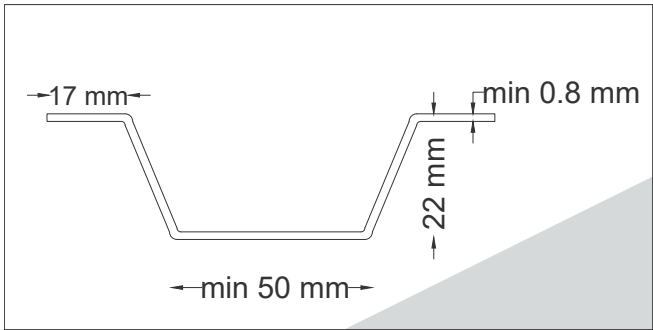
CBOARD® RIVETED CLADDING

Cboard® riveted cladding is an innovative solution for external applications, where Cboard® HD and Cboard® waterproof are screwed with a rivet on the façade of the building.

Installation Guide

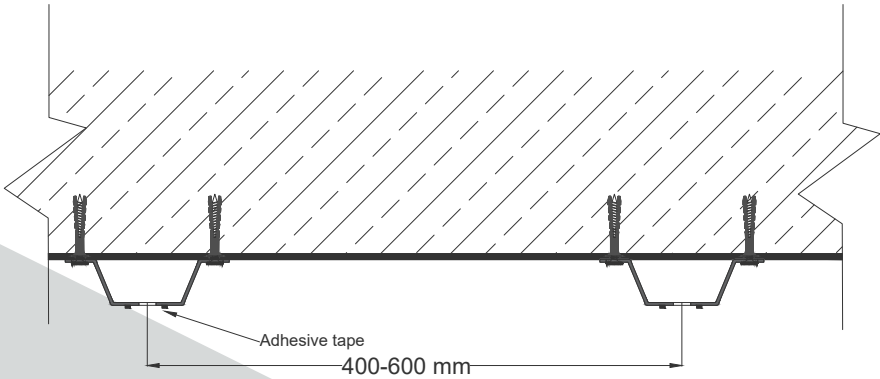
Framing

- A minimum 0.8mm thick Gframe™ Furring Channel is to be used.
- The furring web should not be less than 120mm at vertical joints and not less than 50mm from the interior of the panels.
- The maximum furring length is 3.5m.
- Shortening the length of Gframe™ Furring Channel can reduce thermal expansion and deflection.
- The airspace between the panels and the soffit structure is defined as the following:



Gap (mm)	Building Height (m)
20	1-5
25	5-20
35	20-30
40	30-45

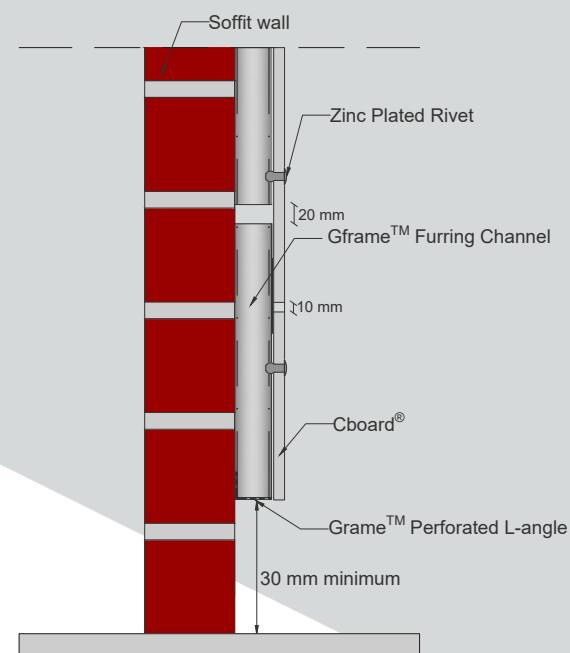
- Gframe™ Furring Channel should be straight, leveled, and aligned with the existing structure.
- A 20mm gap (vertically) should be left between 2 consecutive metal profiles.
- The metal profiles are fixed using Anchor Bolts spaced at 400 to 600mm centers based on the height of the building and the applied loads.
- The Gframe™ Furring Channel that is visible at the jointing area can be covered with a black UV and weather-resistant tape/coat.
- Apply an adhesive tape over the Gframe™ Furring Channel. Apply 1 strip to each side of the rivet location.



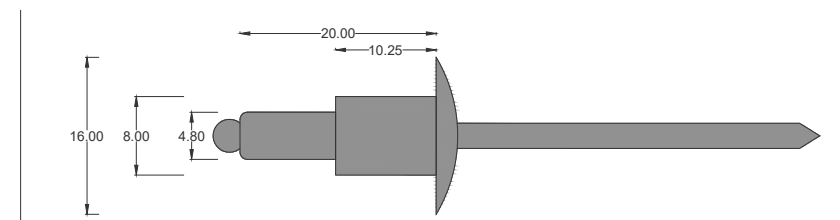
Cboard® Installation

- The vertical or horizontal joint gap between 2 edges of 2 different Cboard® is a minimum of 10mm.
- The joint gap (20mm) of the vertical Gframe™ Furring Channel should be followed by a panel joint (10mm) that will help reduce the stress in the panels.
- Drill holes before applying Cboard® to the metal profile as follows:

Type of hole	Diameter (mm)	Application
Narrow hole	8.5	Fixed points (F)
Wide hole	11	Non-fixed points (N)



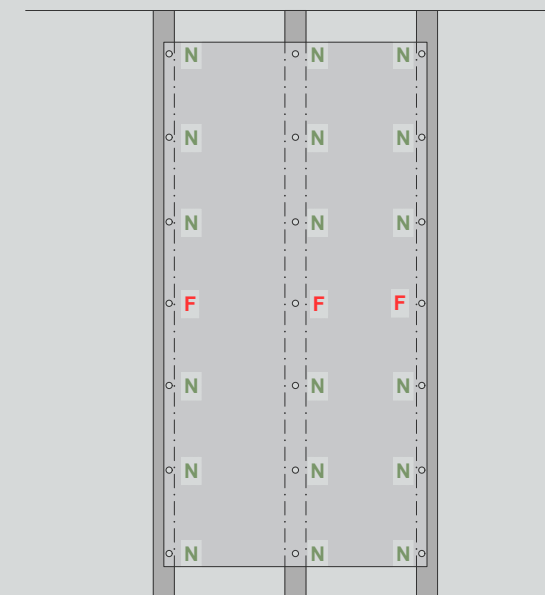
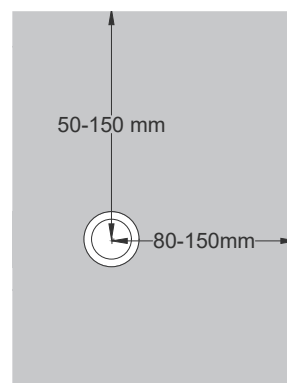
- The holes in the metal profile should overlap with the holes of the previous panel.
- Use the centralizing drill bit to have accurate drilling holes.
- Use colored rivets or stainless-steel head with the below dimensions:



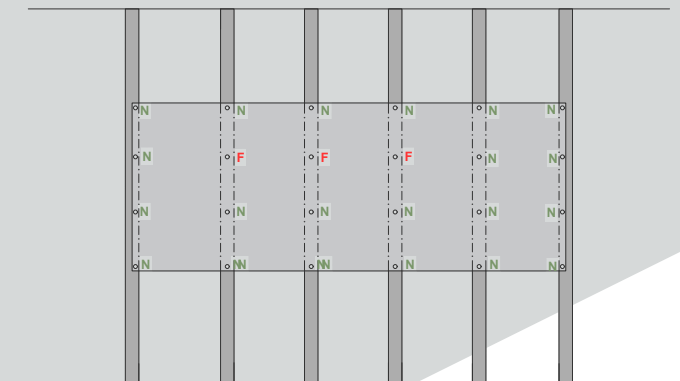
- Place the corner rivets 50mm away from the panel edge horizontally and minimum 80mm vertically to avoid cracks on Cboard®'s edges.
- Fix Cboard® either horizontally or vertically, depending on the building design, height, and criteria.

Each Cboard® requires 3 fixed points (F) that should satisfy the following:

- The 3 points should have the same height and positions in all panels.
- They should be as close to the center of the panel as possible.
- They should be on 3 different metal profiles.



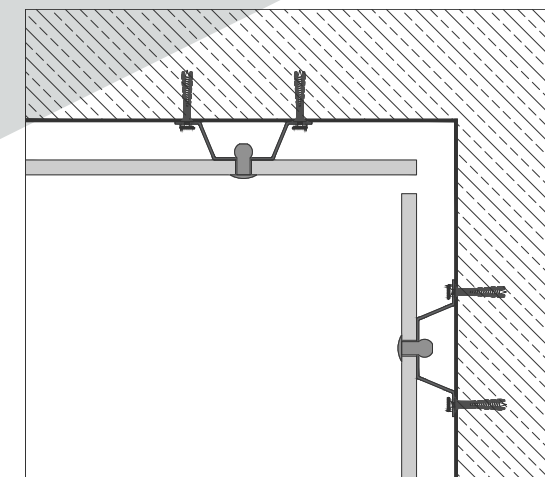
Vertical installation



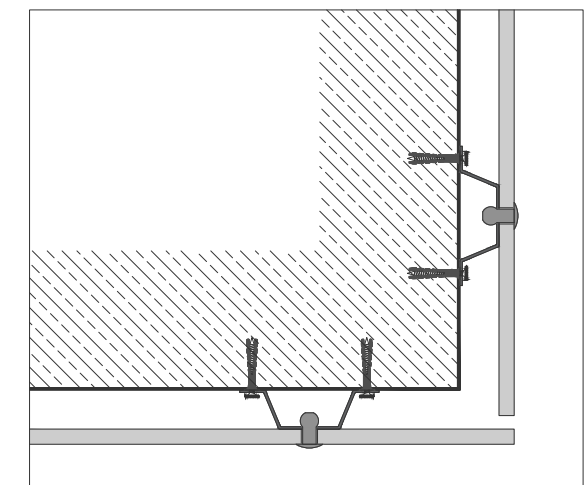
Horizontal installation

Detailed Sections

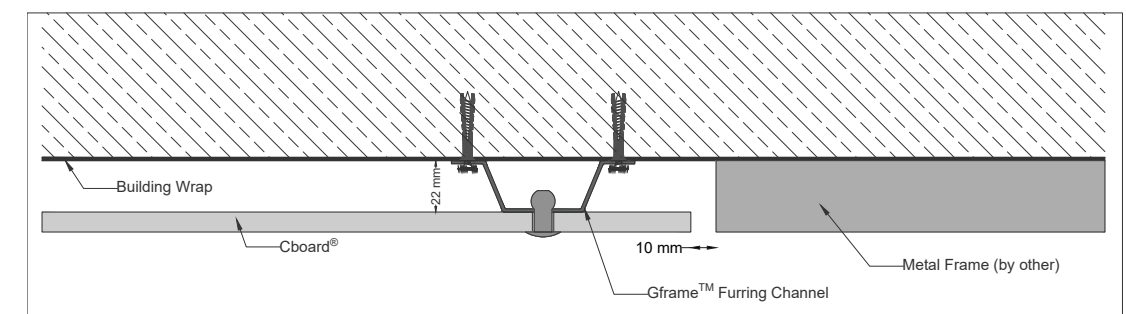
Interior Corner



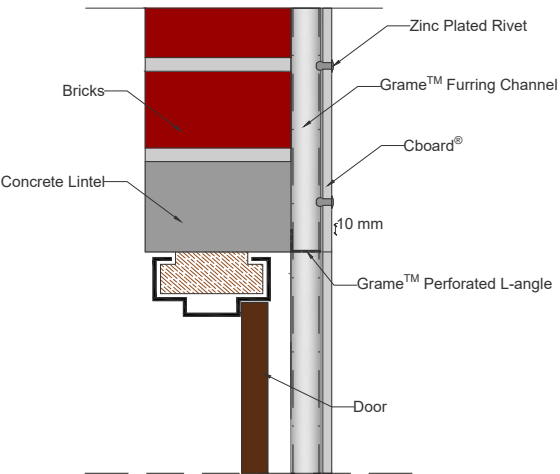
Exterior Corner



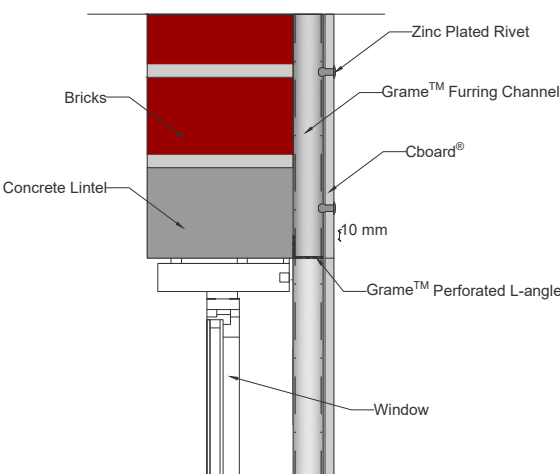
Metal Structure Connection



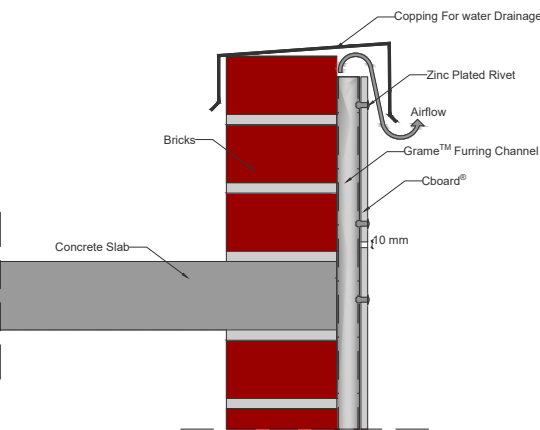
Door Connection



Window Connection



Roof Connection



Finishing

- Step 1** Remove all the dust after drilling holes in Cboard® and the metal profile before the rivet's installation.
- Step 2** Leave the jointing area open and have a black background. If needed, other colors are possible for aesthetic requirements.

CBOARD® PLANK

Cboard® Plank is a unique composite of natural fibers bonded tightly in a high-grade silicate structure, cut from Cboard® HD into many dimensions. It is a cellulose cement plank that does not contain Asbestos. This autoclaved wood-grain siding acquires impressive toughness yet remains flexible and dimensionally stable.

Cboard® Plank can withstand simpler handling and installation and is therefore suitable for Do-It-Yourself (DIY) segments. It comes in several sizes and textures with a real remedy to wood- cladding houses, that are severely affected by termites and rains.

Dimensions (mm)	Weight / Piece (kg)	Piece / m²
8 x 150 x 2400	5.43	2.77
8 x 200 x 2400	7.2	2.018
8 x 250 x 2400	9	1.67
8 x 300 x 2400	10.8	1.38

CBOARD® PLANK CLICK

Cboard® Plank Click is easily handled and installed. It provides a flush finish with an aesthetically pleasing look due to its tegular edge profile. This tongue and groove plank is an autoclaved wood-grain siding with impressive toughness. It is a suitable replacement to wood and stone cladding that are severely affected by termites and heavy rains

Cboard® Plank Click can be pigmented, can have a bare finish, and can be painted on site. It comes in several sizes and textures.

Installation Guide

Framing

Cboard® Plank Click are fixed to the Gframe™ Furring Channel with a thickness between 0.55 and 1.5mm.

For special details such as corners or window frames, wood strips or hollow steel elements are required.

Gframe™ Furring Channels are vertically spaced at a maximum of 600mm center to center. This spacing might be decreased in areas of high wind loads.

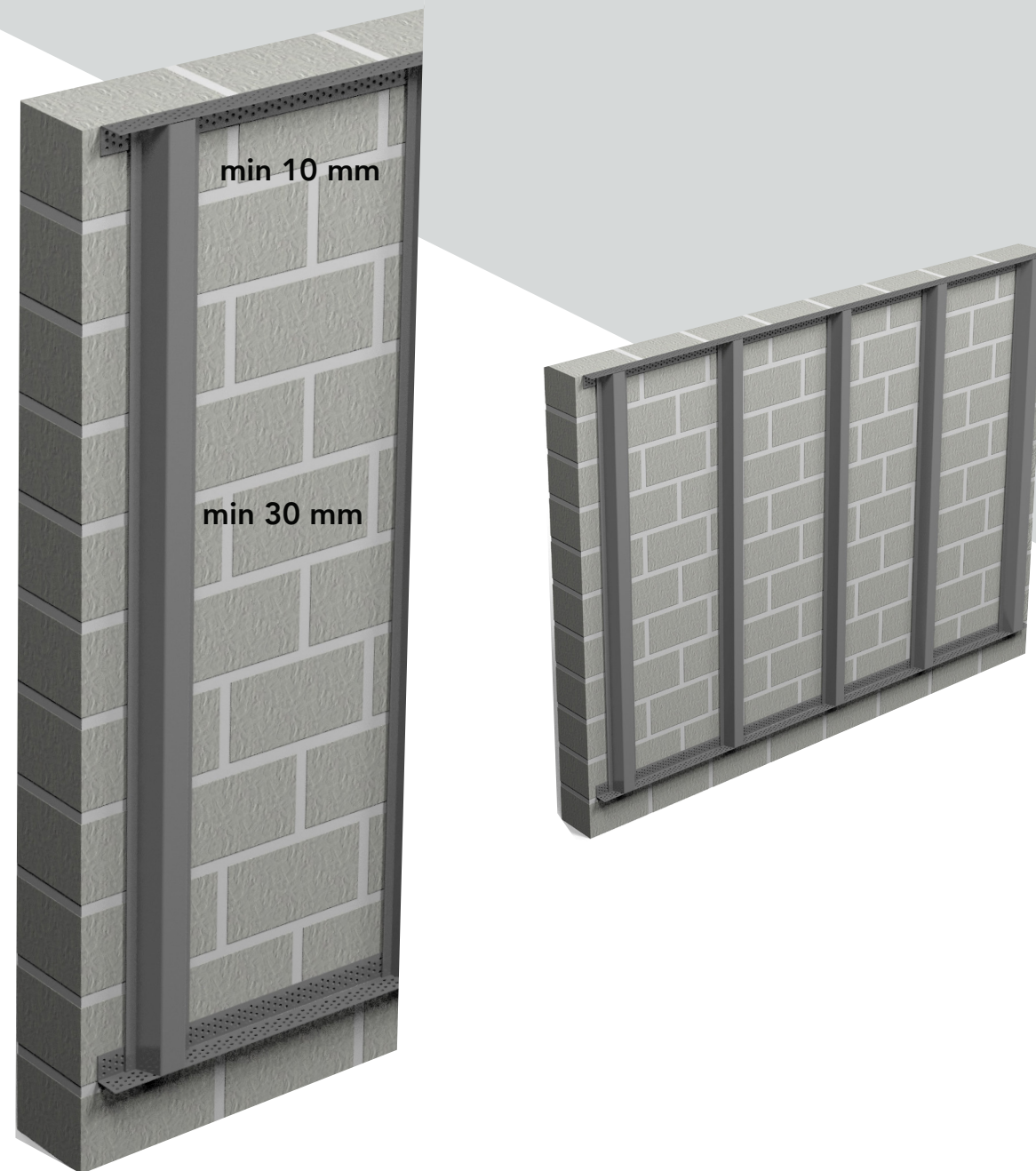
Leave a minimum of 30mm cavity behind the planks.

Leave a minimum of 10mm gap between the top of the Gframe™ Furring Channel and the soffit ceiling.

Leave a minimum distance of 150mm between the ground and the bottom of the Gframe™ Furring Channel.

Fix a Waterproof Barrier Membrane on every Gframe™ furring channel to protect it from moisture.

Fix the Perforated L-angle at the bottom and top sides of the Gframe™ Furring Channel. This profile is used to allow ventilation and continuous airflow to occur in the wall cavity.



Boarding

- Step 1** Make sure that the Starter Profile is leveled at the bottom of the Gframe™ Furring Channel then screw it in place. (fig.1)
- Step 2** Install the first plank in the Starter Profile.
- Step 3** Fix Cboard® Plank Click from its top using the Click Clips every 600mm (according to the Gframe™ Furring Channel spacing).
- Step 4** Make sure that the Click Clip is attached firmly and that it is fully slotted in the tongue of Cboard® Plank Click, then screw it to the Gframe™ Furring Channel by using the appropriate Wafer Head Screws. (fig.2)
- Step 5** Apply the next Cboard® Plank Click into this clip before fixing the second one.
- Step 6** Repeat the Cboard® Plank Click installation using the same process until the top side of the Gframe™ Furring Channel is reached.
- Step 7** Directly screw the top plank to the Gframe™ Furring Channel using Zinc Screws. The screw is fixed below the tongue of the plank, by 10 to 20mm (fig.3).
- Step 8** Cut the planks, where needed, to fit the required dimensions.

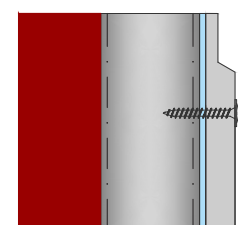
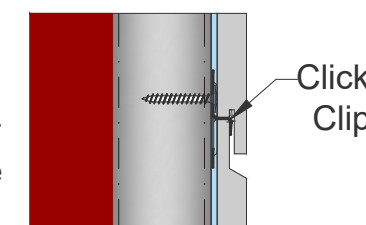
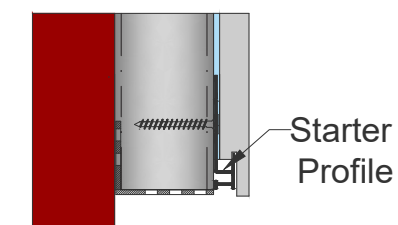
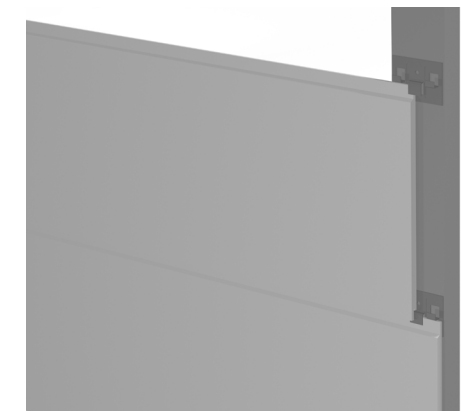
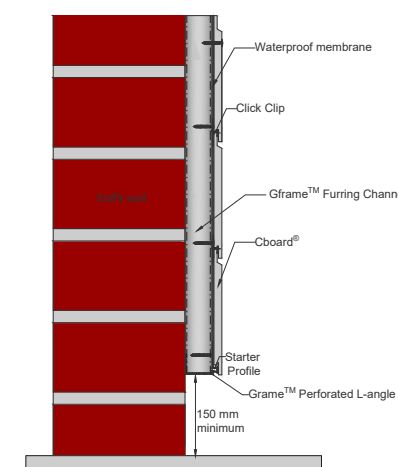


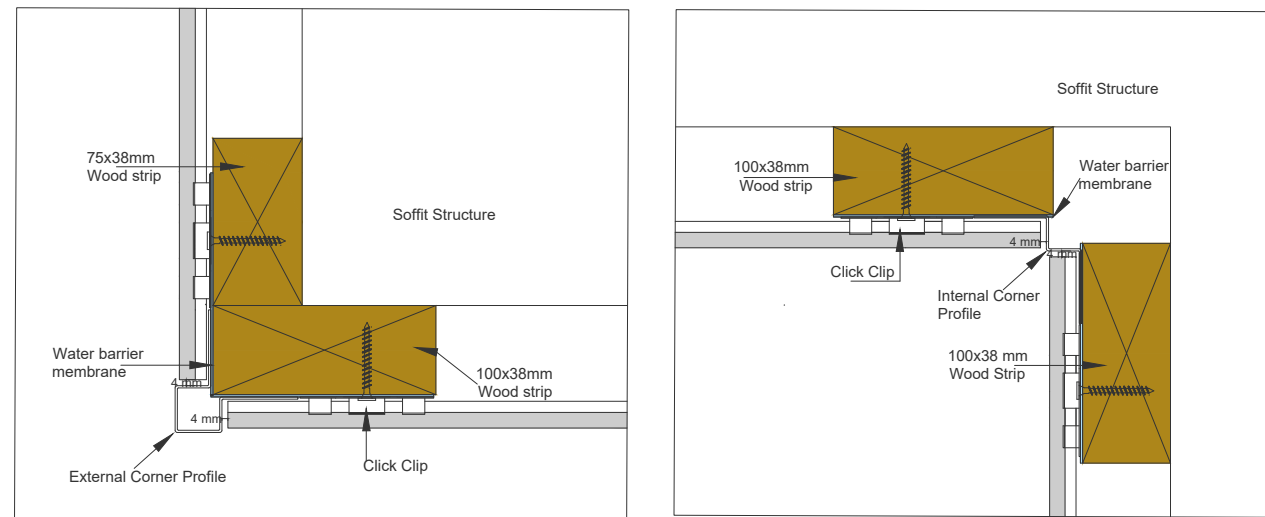
Figure 1

Figure 2

Figure 3

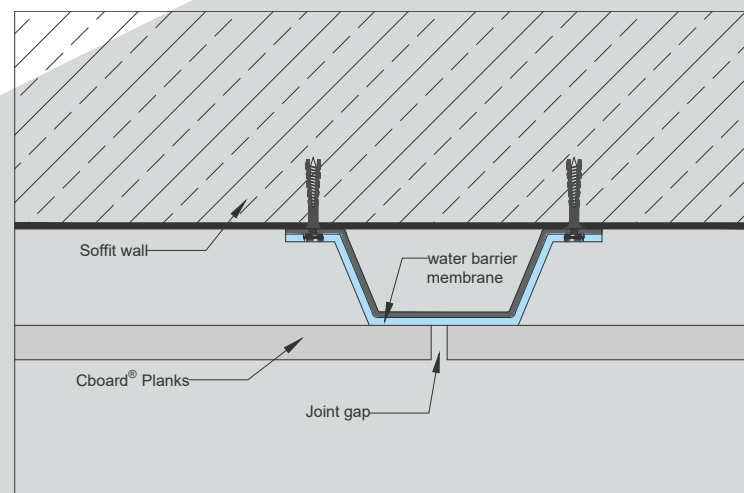
Corner Sections

Use a wood or hollow steel profile. The profile should have the same width (38mm) as the Gframe™ Furring Channel to maintain a leveled surface.



Jointing

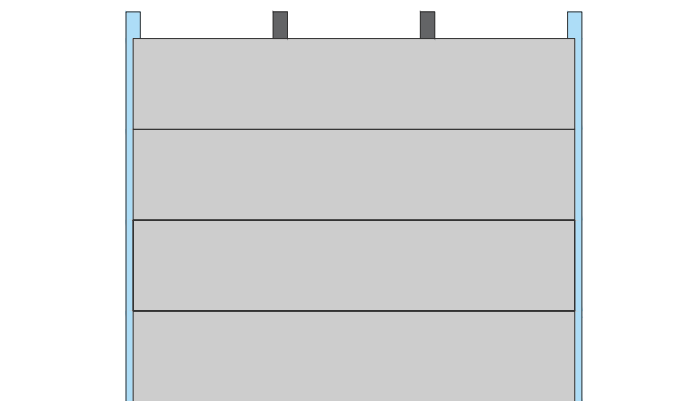
- Step 1** Fix Cboard® Plank Click leaving a joint gap of 3 to 5mm to allow the free movement of the panel.
- Step 2** The vertical joint between Cboard® Plank Click should always coincide with the Gframe™ Furring Channel.
- Step 3** Ensure the waterproofing of the joint by using a Water Barrier Membrane behind Cboard® Plank Click at the jointing area.



Installation Patterns

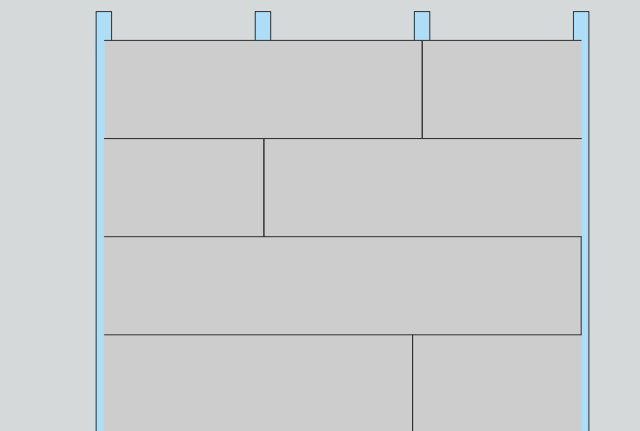
Straight pattern

- Step 1** Install Cboard® Plank Click in a way that their edges coincide on the same jointing line along with the entire wall height.
- Step 2** Use water barrier membrane at the jointing of Gframe™ Furring Channel. It is optional for the remaining channels.



Free pattern

- Step 1** Distribute Cboard® Plank Click without having a specific pattern. In this case, almost all channels have a jointing line on their web. That is why it is required to cover all the channels with a Water Barrier Membrane.



Finishing

- Step 1** Use color-matched screws for better aesthetic finishing.
- Step 2** Use emulsion-based paints or emulsion-based silicate paints to cover damages, cracks, or cut edges.
- Step 3** Use a small brush to apply the repairing paint coats only at damaged areas. Any paint overspill should be removed immediately to avoid permanent unwanted stains.

CBOARD® PLANK LAP

Cboard® Plank Lap system is the traditional way of plank installations that serves as an ideal solution for the renovation of a facade. It is a lightweight alternative to traditional methods that serves as a protective layer to buildings.

This second skin delivers the required insulation and protection all while providing an aesthetically pleasing finishing with low maintenance in time.

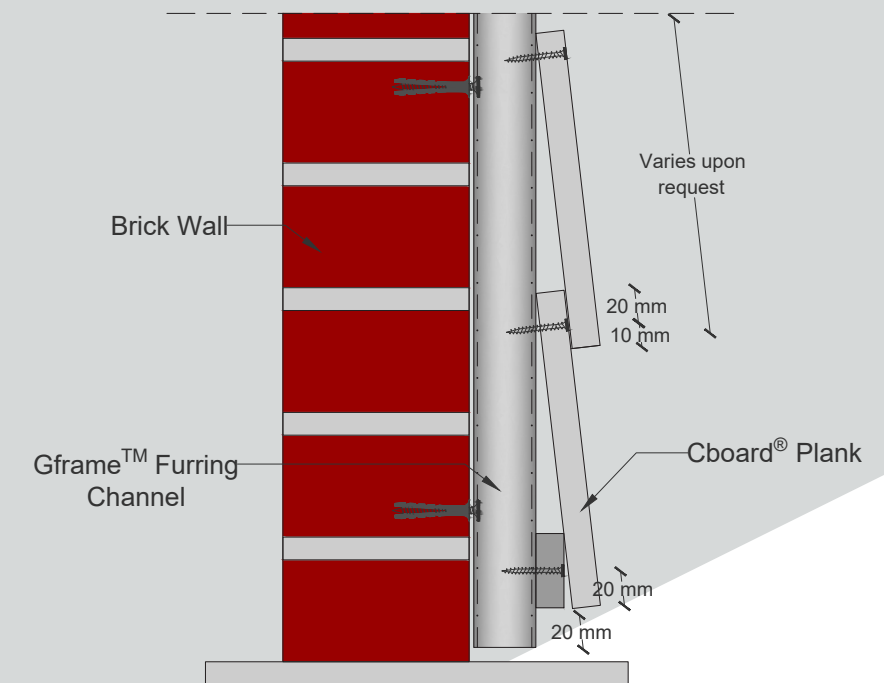
INSTALLATION GUIDE

Framing

- Cboard® Plank Lap is fixed to the Gframe™ Furring Channel with a thickness between 0.55 and 1.5mm.
- Gframe™ Furring Channels are vertically spaced at a maximum of 600 mm center to center.

Boarding

- Fix Cboard® Plank Lap 20mm above the base of the metal profile using Zinc Plated Screws.
- Install the first Cboard® Plank Lap and screw it to the Gframe™ Furring Channel only from the top edge. The screw should be 20mm away from the top edge of the planks. As for the bottom edge, it remains free and lays on the previous plank without being fixed.
- Repeat the Cboard® Plank Lap installation steps until the top of the facade is reached.



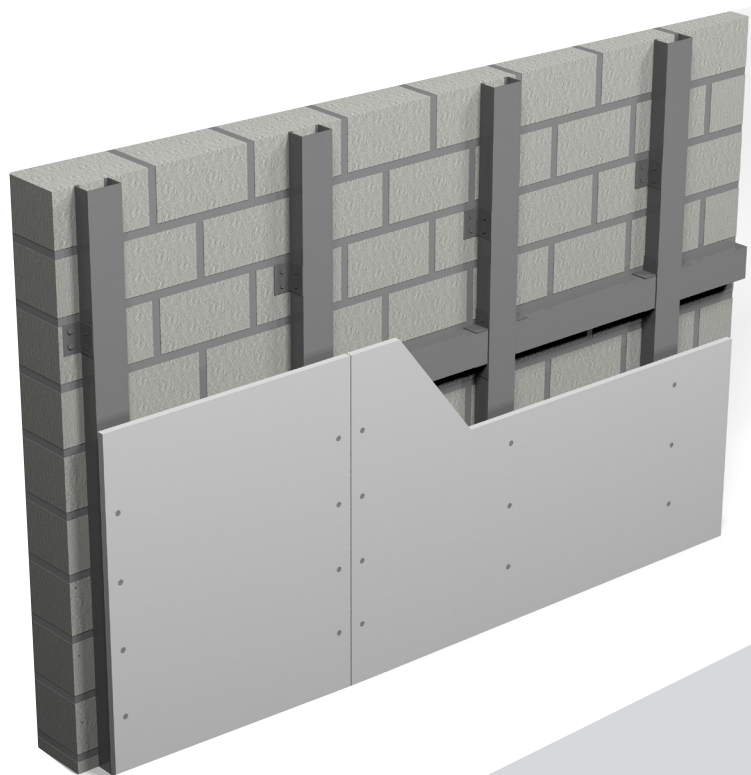
Finishing

- Step 1** Cover the head of the screws and jointing area with Ccoat™ Fiber Cement Multi-Purpose Compound.
- Step 2** For final coatings use emulsion-based paints or emulsion-based silicate paints.



EXTERNAL WALLS CLADDING

In external applications, it is recommended to use Cboard® with a minimum sheet thickness of 12mm. Cboards® are fixed to the existing external walls using special brackets that insure stability and alignment.



INSTALLATION GUIDE

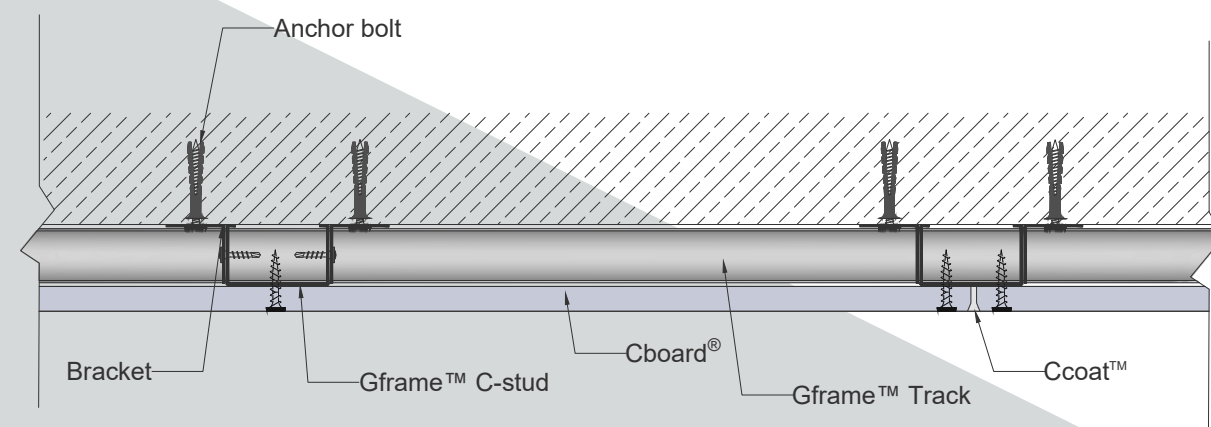
Framing

- Step 1** Gframe™ profiles and method of installation should respect the building regulations and requirements. Profile thicknesses and spacings are designed to have deflection values below the allowable limits.
- Step 2** Mark on the floor and ceiling the boundaries of Gframe™ track to be installed, using appropriate measurement tape, and marking tools.
- Step 3** Fix the bottom and top Gframe™ track using anchor bolts spaced at 600mm center to center (or as provided by calculations).
- Step 4** Use a minimum of 0.55mm galvanized or zinc coated Gframe™ C-stud spaced at a maximum of 600mm center to center.

Boarding

- Step 1** Fix Cboard® using zinc plated screws at a vertical spacing of 200mm center to center on edges, and 300mm in the board's field.
- Step 2** Keep fasteners 50mm away from the board corners and 12mm from Cboard® edges(horizontally).
- Step 3** Keep fasteners 100mm away from the board corners (vertically).
- Step 4** Leave a gap of 4 to 5mm between the edges of boards when installing according to the ambient temperature.
- Step 5** Brackets are used for metal to wall and metal to metal fixing.
- Step 6** Brackets are spaced at 1500mm maximum center to center.

Top View



Finishing

- Step 1** Cover the head of the screws and jointing area with special cement jointing compound (or PU).
- Step 2** For final coatings use emulsion-based paints or emulsion-based silicate paints.



CBOARD® FLOORING



Section .04

04

04

CBOARD® FLOORING

CBOARD® FLOORING

Cboard® is perfect for interior and exterior flooring applications due to its high impact resistance and load bearing capacity. It is a strong and durable board that is best suited for applications with moderate to heavy loads.

Cboard® flooring is a system that provides a highly durable low maintenance deck, with a modern appearance. Cboard® high density, waterproof and regular can all be used for flooring systems.

The boards are directly mounted on the steel structure and fixed to it using appropriate screws or are installed on the existing floor using adhesive.

Technical and Physical Specifications

Thickness (mm)	Width (mm)	Length (mm)			Edge
18	1200	2400	2800	3000	Square
20		•	•	•	
		•	•	•	



	Cboard® RG		Cboard® WP		Cboard® HD		Standards
Density (kg/m³)	1309		1446		1730		ASTM C1186
Weight (kg/m²)	18	20	18	20	18	20	ASTM C1186
	23.56	26.18	26.08	28.92	31.14	34.6	
Thermal conductivity (W/m.K)	0.2135		0.1546		0.3274		ASTM C518
Smoke Development Index (SDI)	5		5		5		ASTM E84
Flame Spread Index (FSI)	0		0		0		ASTM E84
Reaction to Fire	Class A		Class A		Class A		ASTM E84

Features



Advanced impact resistance



Moisture resistant



Fire resistance



Thermal insulation



Textured

FLOORING SYSTEM: STEEL FRAMING

Installation

- All metal frames must be 45mm wide minimum to allow correct fixing of Cboard® with a minimum thickness of 0.9mm.
- Spacing between frames for residential and commercial application is selected from the table below depending on the magnitude of the concentrated load and the maximum distributed load.

Thickness (mm)	Frames spacing (mm)	Maximum allowable concentrated load on 100x100mm (kN)	Maximum uniformly distributed Live Load (Kpa)
18	400	4.31	21.1
	450	3.4	16.5
	600	2.98	8.8
20	400	6.7	32.7
	450	7.82	25.1
	600	4.5	13.7

For heavy traffic, it is recommended to have 400mm spacing between the frames.

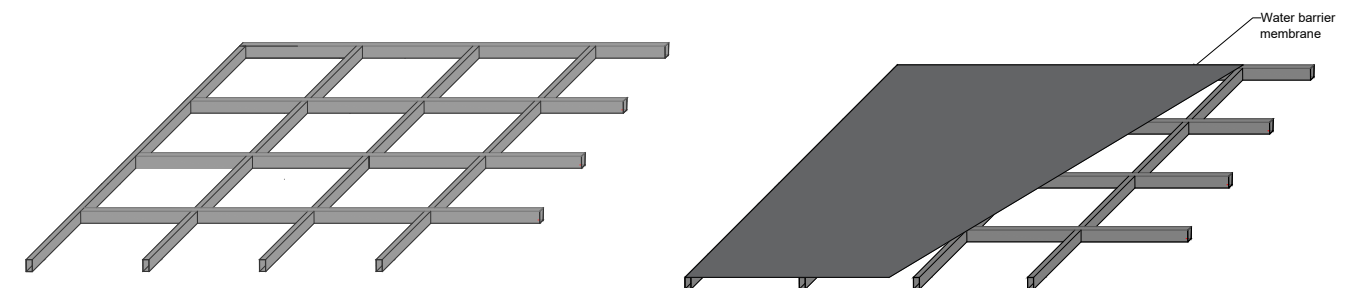
- Control joints are required when the size of the floor exceeds 5 meters in any direction. When the direction changes or at openings such as doorways, control joints should be provided through both the floor boards and covering.
- Cboard® should be laid perpendicular to the supporting beams (the long edge of the board across the direction of main support).
- Cboard® should be staggered in length, by half the length of the previous board ensuring edges come over the supporting beams.
- In case of heavy-duty applications, 2 layers of Cboard® must be used in a staggered way with a suitable absorbent layer between the boards.

Cutting

- Define a straight line on the sheet as a guide, then make the cut along the line by passing the saw base perpendicular to the sheet. When using an electrical saw, you should use a vacuum to clean up dust. Cutting should be done slowly to let the vacuum machine collect the emitted dust.
- The snapper shear is the fastest and safest amongst the cutting tools for fiber cement boards. It does not emit dust, achieves a quiet operation, and is ideal for indoor usages.
- To make small cutouts for pipes, score the needed perimeter using an electrical drill then break it out carefully from the other face of Cboard® using a hammer.

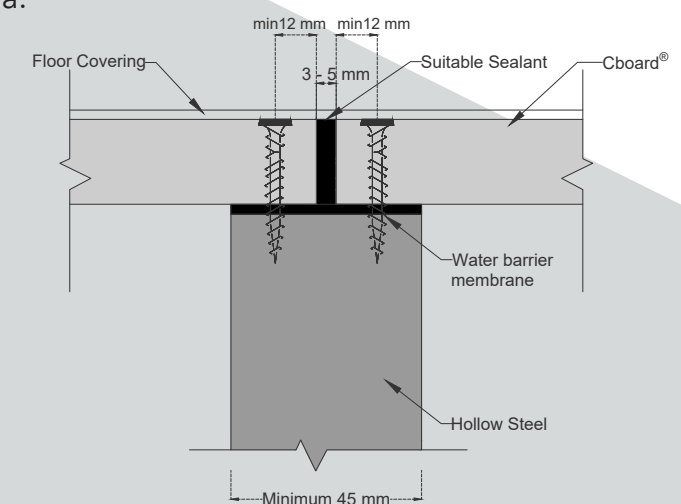
Framing

- Step 1** Ensure that the soffit floor is not damaged and free from dust or impurities.
- Step 2** Fix the main hollow steel firmly to the floor to avoid twisting or bending especially when applying Cboard®.
- Step 3** Cover the hollow steel with water barrier membrane.



Boarding

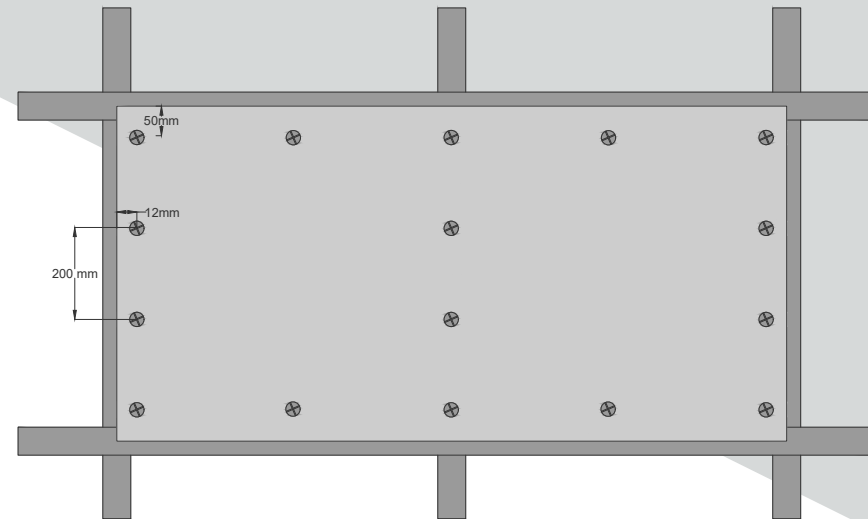
- Step 1** Drill holes into Cboard® using a countersink.
- Step 2** Fit Cboard® gently into its position while maintaining a 5mm gap between the boards and the wall perimeter. The gap should be filled with suitable flexible expandable sealant.
- Step 3** Keep a gap of 3 to 5mm between the boards' edges for expansion requirements.
- Step 4** Fill the gap between the boards and the screws with a suitable flexible expandable sealant.
- Step 5** Remove the excess sealant with a spatula.
- Step 6** Clean the surface with a wet cloth.



Fastening

Step 1 Fasten Cboard® using zinc plated screws every 200mm center to center, after drilling an oversized hole using the countersink to allow expansion.

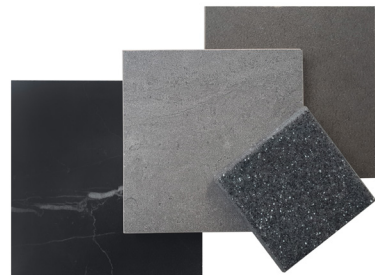
Step 2 Keep fasteners 50mm away from board's corners and 15mm away from the board's edges.



Finishing

Step 1 Coat the boards with an acrylic water-based primer for dry applications and oil-based primer for wet applications on both sides and edges before laying them.

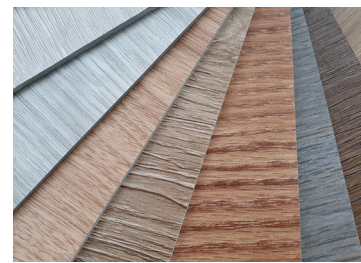
Step 2 The boards can be PVC/Vinyl laminated, or covered with carpets, tiles etc....



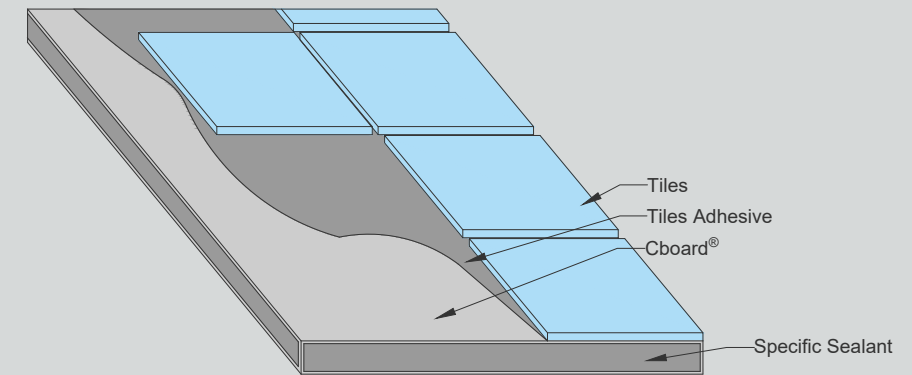
Tiles



Carpet



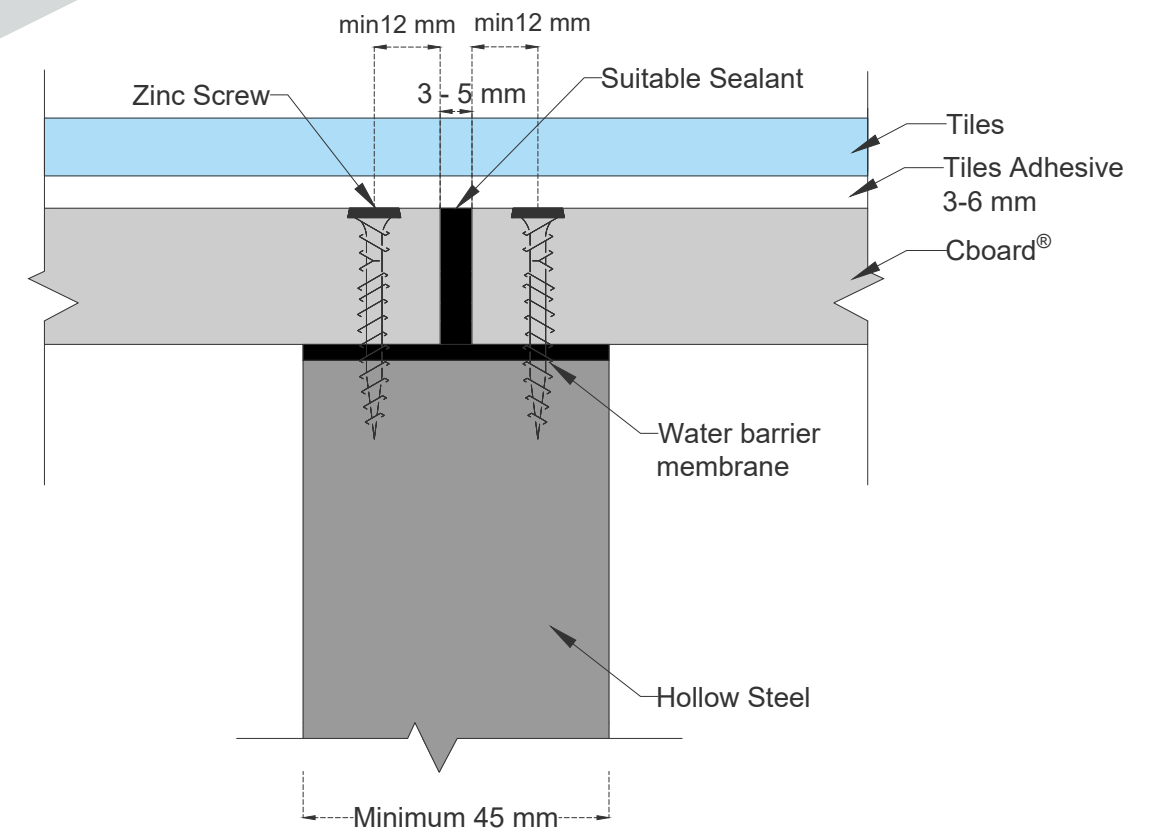
PVC/Vinyl



Tile finishing

Step 1 Fix the tiles directly to Cboard® using a proprietary tile adhesive.

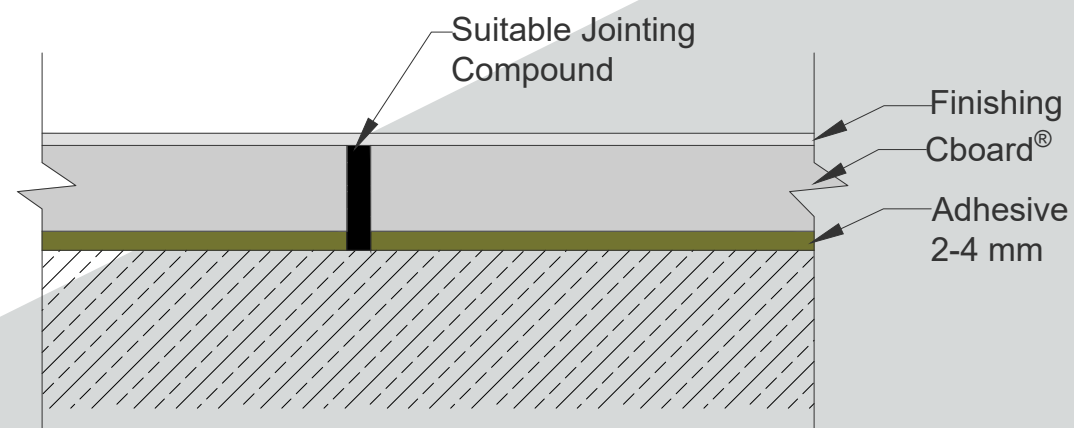
Step 2 Use a thick layer (3 to 6mm) of tile adhesive to allow flexibility and accommodate some movement that is unavoidable in large framed structures.



FRAMELESS FLOORING SYSTEM

Installation

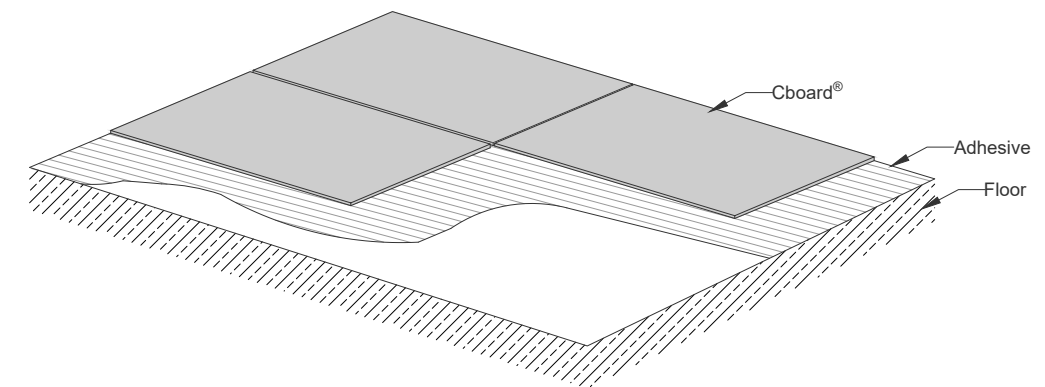
- Step 1** Clean the area and make sure the floor is leveled.
- Step 2** Mix the adhesive and spread it on the floor, using a notched trowel with a minimum notched size of 8 to 10mm at a 45-degree angle. Drag across the floor to spread the adhesive evenly, ensuring the notches are in the same direction. (Only cover a small area at a time – the board size – as the adhesive will begin to dry once applied)
- Step 3** Twist and slide the first Cboard® firmly on the adhesive in the center of the floor and press it down to ensure it sticks properly.
- Step 4** Leave a 4mm gap between the boards and 5mm between the board and the wall perimeter. Use spacers to make sure the expansion gaps are correct.
- Step 5** Wash the surface using a clean damp sponge to keep the boards clear of adhesive.
- Step 6** Once you've finished laying Cboard®, let the adhesive dry for 24 hours and remove spacers between the boards.
- Step 7** Fill the gap with an appropriate jointing compound.



Finishing

For Cboard® textured: apply one layer of painting.

For Cboard® plain: Coat the boards with acrylic water-based primer for dry applications and oil-based primer for wet applications on both the sides and edges, before laying them. The boards can be PVC/Vinyl laminated, or covered with carpets, tiles etc....



CBOARD® SUSPENDED CEILINGS



Section .05

CBOARD® SUSPENDED CEILINGS

Cboard® is a durable board suitable for suspended ceiling applications. It offers superior resistance with special design options and patterns. It is a high strength, highly performant board suitable for many ceiling applications including multistory balconies, walkways, underground parkings, and more. The ceiling system can consist of the three types of Cboard® (Cboard® RG, Cboard® WP and Cboard® HD).

Cboard® suspended ceiling is an advanced solution to cover MEP and other services.

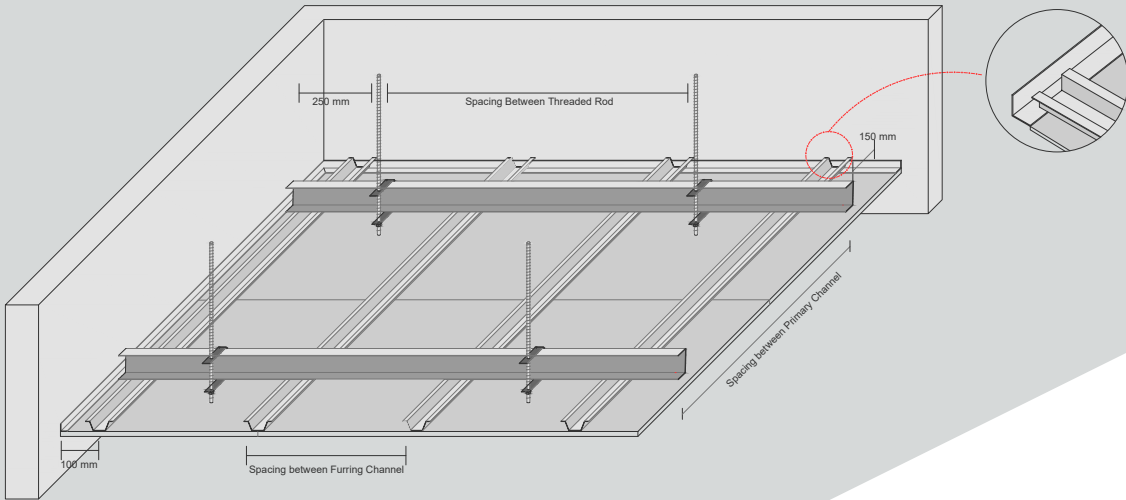
Advantages

- Thermal insulation
 - Fire resistant
 - Sound absorbing
 - Termite resistant
- Weather resistant
 - Seismic resistant
 - Aesthetically pleasing
 - Eco friendly
- Easy handling
 - Low maintenance
 - Multiple designs

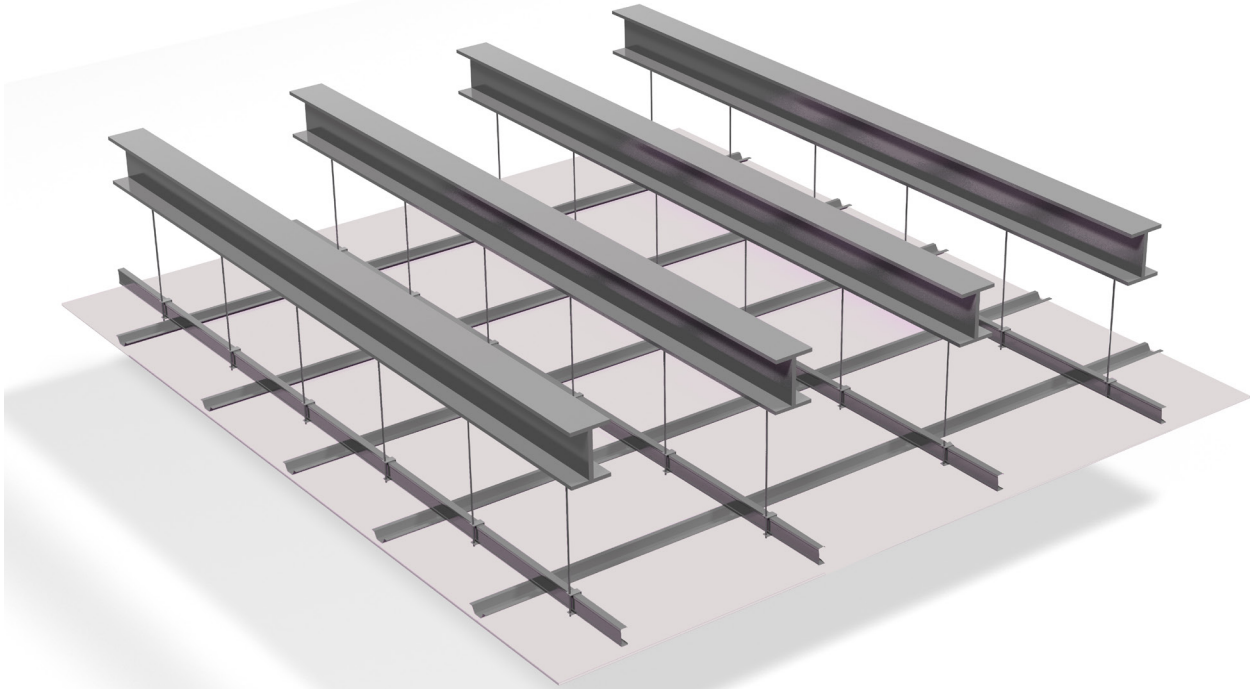
INSTALLATION GUIDE

Finishing

- Step 1** Fasten Gframe™ L-angles to the walls along the perimeter at measured levels using Anchor Bolts spaced at 600mm.
- Step 2** Fix the Threaded Rods (6mm) to the soffit ceiling using Drop-in Anchors with a maximum spacing of 1200mm center to center (spacing varies based on design load). The first hanger should be 250mm away from the wall.
- Step 3** Suspend Gframe™ C38-channels, in a longitudinal direction, from the soffit ceiling using Threaded Rods. The Gframe™ C38-channels are connected to the Threaded Rods using a C-clamp. The C-clamps fit around the Gframe™ C38-channels and are fastened to the Threaded Rods from the top and bottom ends.
- Step 4** Note that the Gframe™ C38-channel should be 150mm away from the wall; Spacing between primary Gframe™ C38-channels is 1200mm maximum and varies based on the design loads.
- Step 5** Connect the Gframe™ Furring Channels to the primary grid in a transverse direction using Wafer Head Screws. The first Gframe™ Furring Channel should be 100mm away from the wall; with a spacing of 400 to 600mm center to center depending on design loads.

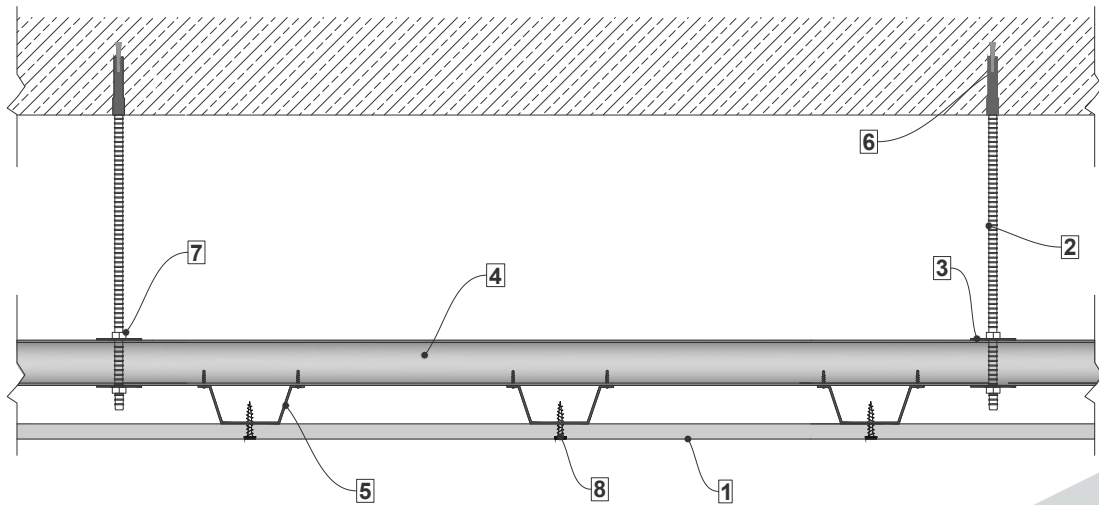


Load Class (kg/m²)	Gframe™ C38-channel spacing (mm)	Threaded Rod spacing (mm)	Gframe™ Furring Channel spacing (mm)
>15	1200	1200	600
>20	1100	1100	600
>25	1000	1000	600
>35	900	900	400
50 >Load Class >65	800	800	400

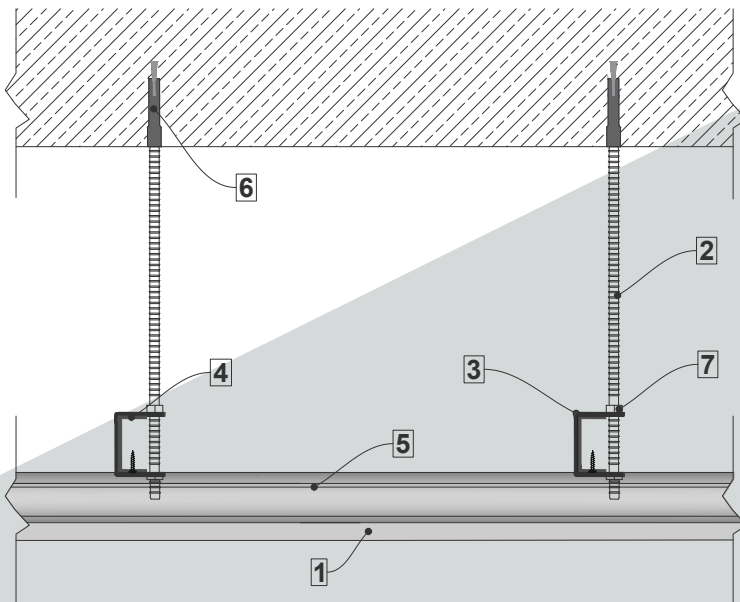


Boarding

- Step 1** Screw Cboard® to the Gframe™ Furring Channels in a longitudinal direction using Zinc Self-tapping or Self-drilling Screws.
- Step 2** Keep a 4mm gap between Cboard® for jointing.



Front View



Side View

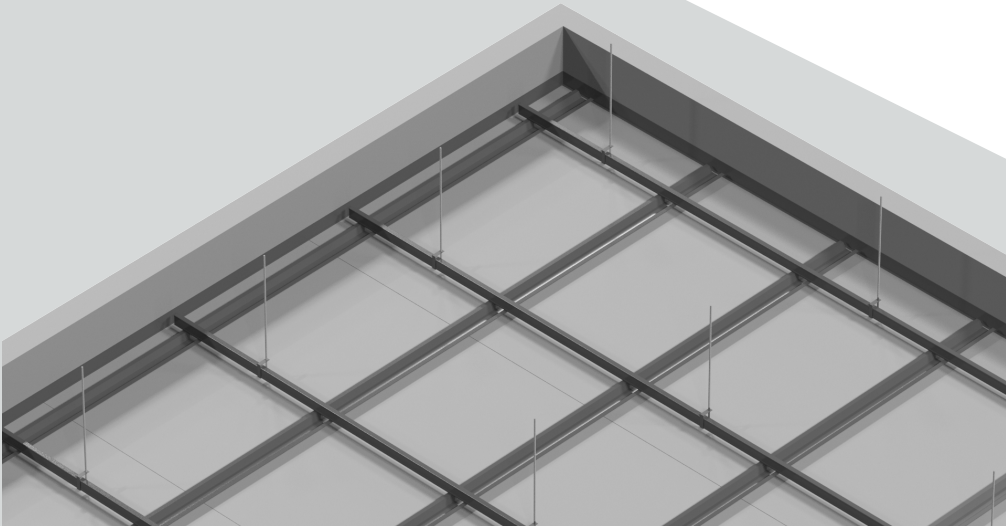
Number	Description
1	Cboard®
2	Threaded Rod
3	C-clamp
4	Gframe™ C38 Channel
5	Gframe™ Furring Channel
6	Drop-in Anchor
7	Nut
8	Zinc Screw

Jointing

- Step 1** Clean the surfaces from dust and other impurities.
- Step 2** Cover the head of the screws with a thin layer of Ccoat™ Fiber Cement Multi-Purpose Compound.
- Step 3** Apply the self-adhesive fiberglass mesh tape along the joints, then apply the first layer of Ccoat™ with a width of 100mm that extends 50mm beyond both sides.
- Step 4** Embed the Mesh Tape in Ccoat™ to reinforce the joints between the boards.
- Step 5** Smooth the first layer two hours after it dries with appropriate sanding paper then apply the second layer of the compound with a width of 200mm.
- Step 6** Repeat for the second layer then apply a third thin layer of Ccoat™ with a width of 300mm.
- Step 7** Skim the entire surface with one coat of Ccoat™ with a maximum thickness of 3mm.

Finishing

- Step 1** Coat the surface with a primer using a brush.
- Step 2** Use emulsion-based paints, alkyd paint, or any other type for final coatings.



STORAGE AND HANDLING





RECOMMENDATIONS

- Use dust mask while cutting Cboard® to avoid respirable silica dust exposure.
- Wear gloves and protective clothing to avoid allergic exposure.
- Wash your mouth when swallowing or inhaling any material.
- Cut Cboard® outdoors or in a well-ventilated area.
- Vacuum to clean up the dust before using an electrical saw.
- Define a straight line on the sheet as a guide, then cut along the line by sliding the saw base perpendicularly to the sheet. Cut slowly to let the vacuum machine collect the emitted dust.
- Use the Snapper Shear as it is the fastest and safest among the cutting tools for Cboard®. It does not emit dust, achieves a quiet operation, and is ideal for indoor usages.



STORAGE AND HANDLING

- Lift Cboard® from the long edges by 2 persons to avoid corners damages.
 - While loading process, the board should be left from its 4 corners.
 - Pack and protect the edges and corners of Cboard® during transportation.
 - Store Cboard® horizontally on wooden pallets and not in direct contact with the ground.
 - Avoid storage for prolonged periods of time in areas with moisture and temperatures higher than 50°C.
 - Avoid cracking or damaging the boards during transportation and installation.
-

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