

Fibreclad®

Technical Manual



Network
Architectural

Contents

Product Information	03
Surface Textures	04
Product Range Colours & Surfaces	05
Product Details	07
Ventilation	08
Panel Layout	09
Top Hat Installation	10
Fibreclad Fixing details	12 - 20
Perforation	21
Storage & Handling	22
Fabrication	23
Health & Safety	24
Technical Information	25
Accessories	26
Care & Maintenance	27

Product information

Fibreclad fibre cement is a modern and authentic building material made from natural and environmentally friendly raw materials.

Installed as a ventilated facade system Fibreclad contributes to the energy efficiency of the building by deflecting heat as well as eliminating condensation through natural ventilation.

Additionally Fibreclad is deemed a non-combustible material in accordance with C1.9(e) of the National Construction Code and with properties such as high impact strength, no maintenance, durability, scratch and graffiti resistant Fibreclad panels are the ideal facade material.

Fibreclad advantages

- **Durability**
- **Coloured through panels**
- **Performance**
- **Customisation Sizes & Colours**
- **Perforation**
- **Safety non combustible**
- **Fixing options: Screws, Rivets and Hidden mechanical fixing**
- **Cost effective: Facade and Interiors with 6mm panel**
- **Graffiti resistant**
- **Maintenance Free**
- **Fibre glass mesh backing for increased security**
(stop pieces falling off on strong impact e.g.; tunnel lining, ground floor etc.)



Surface Textures

Fibreclad



Fibreclad Linear



Fibreclad Stripes (smooth or groove panel)



Fibreclad Raw



Fibreclad Groove

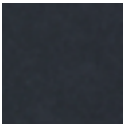
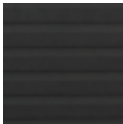
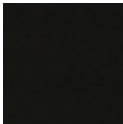
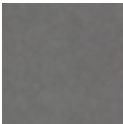
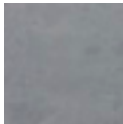
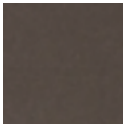
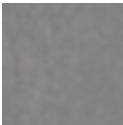
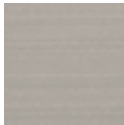
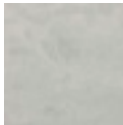
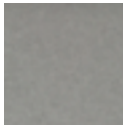
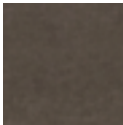
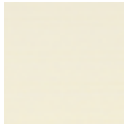
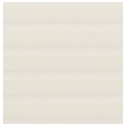
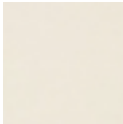
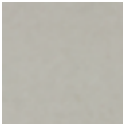
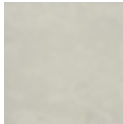
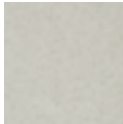
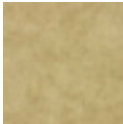
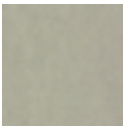
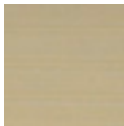
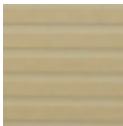
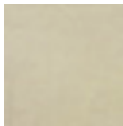
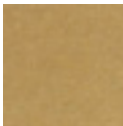
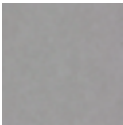
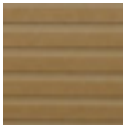
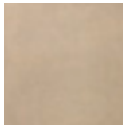
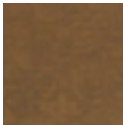
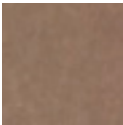
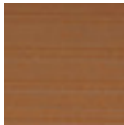
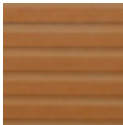
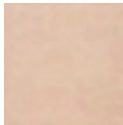
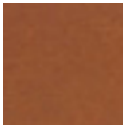
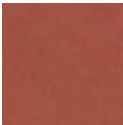
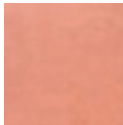
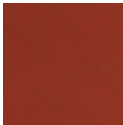
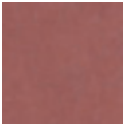
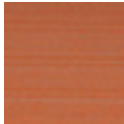
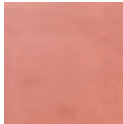
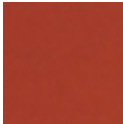
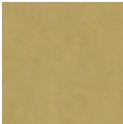
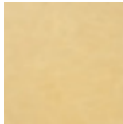
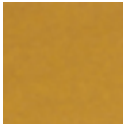
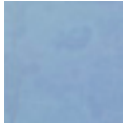


Fibreclad Stone



Product Range

Colours & Surfaces

	Fibreclad	Fibreclad Groove	Fibreclad Stripes (smooth or groove panel)	Fibreclad Linear	Fibreclad Raw	Fibreclad Stone	Fibreclad Anti-Graffiti
Charcoal							
Titanium							
Concrete							
Quartz							
Pebble							
Sand							
Almond							
Jarrah							
Oxide red							
Clay							
Gold							
Eucalyptus							
Opal blue							

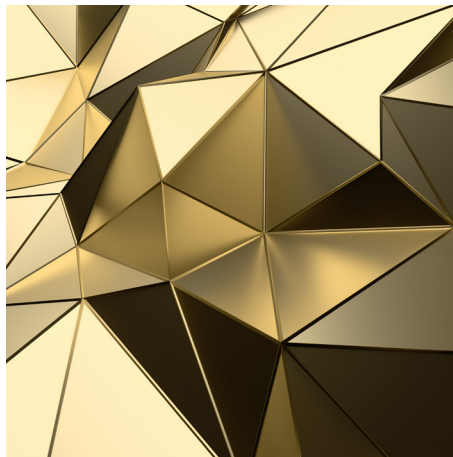
Product Range

Colours & Surfaces

Fibreclad Colour custom min 300m² from NCS/RAL



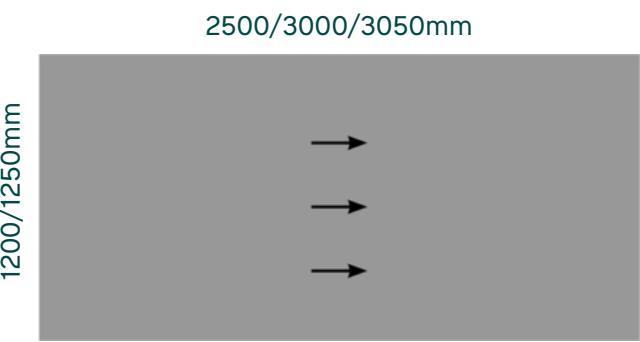
Fibreclad Print in matt and gloss finish



Product details

Grain Direction

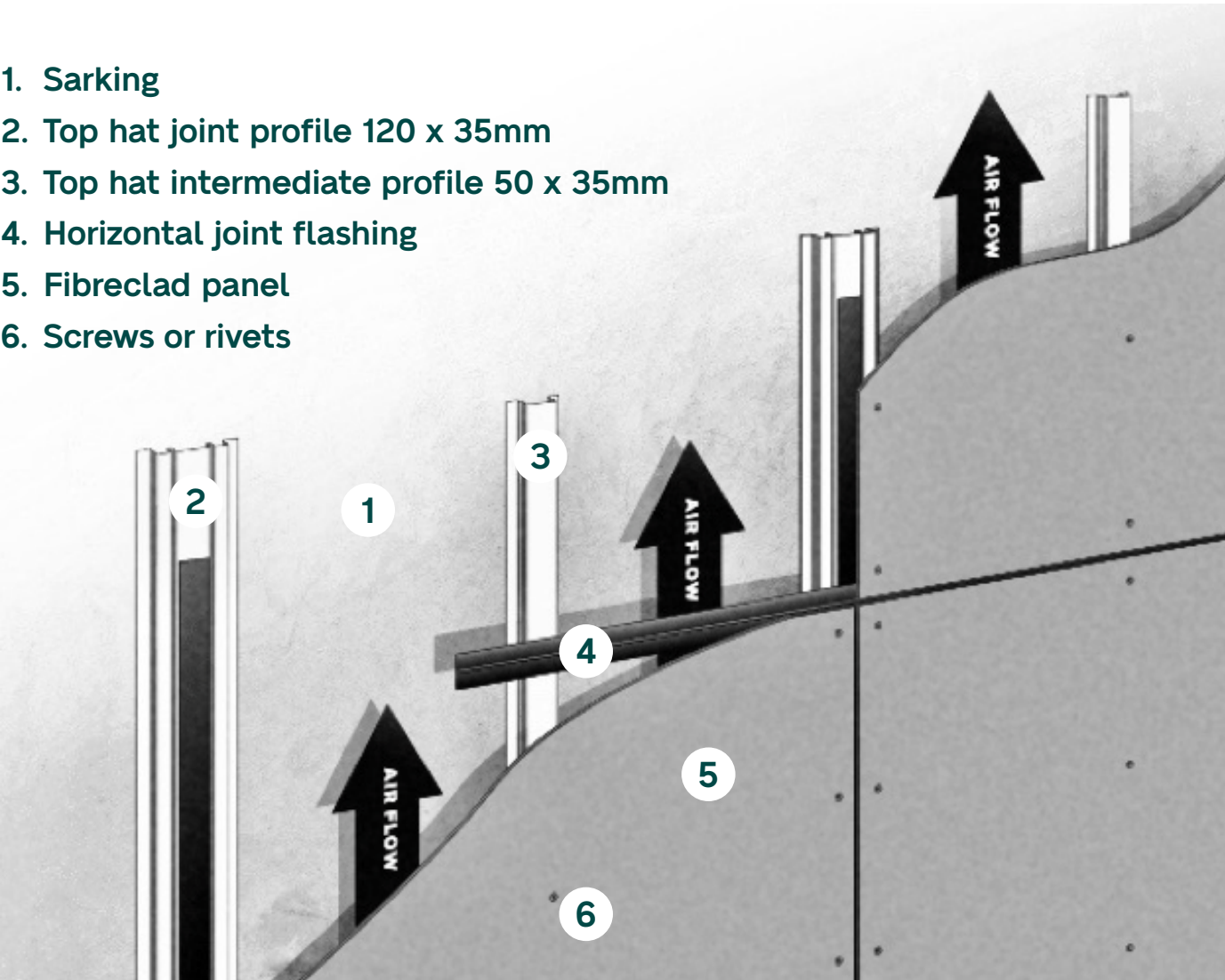
The FIBRECLAD panels (Fibreclad,Groove,Stripes,Linear) are manufactured with a unique surface texture. This unique finish is enhanced by a process which adds a directional grain to the board - leaving the boards with a different appearance dependent on lighting and the angle of the board.



	Facade				Interior	
Thickness	8mm	10mm	12mm	-	6mm	5mm
Weight/m ²	14.4kg	18kg	21.6kg	-	10.8kg	9.6kg

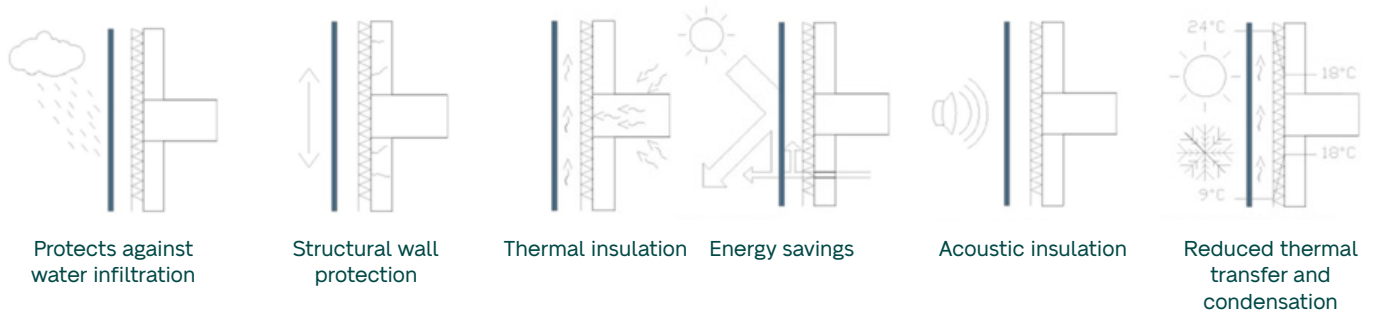
Installation summary

1. Sarking
2. Top hat joint profile 120 x 35mm
3. Top hat intermediate profile 50 x 35mm
4. Horizontal joint flashing
5. Fibreclad panel
6. Screws or rivets



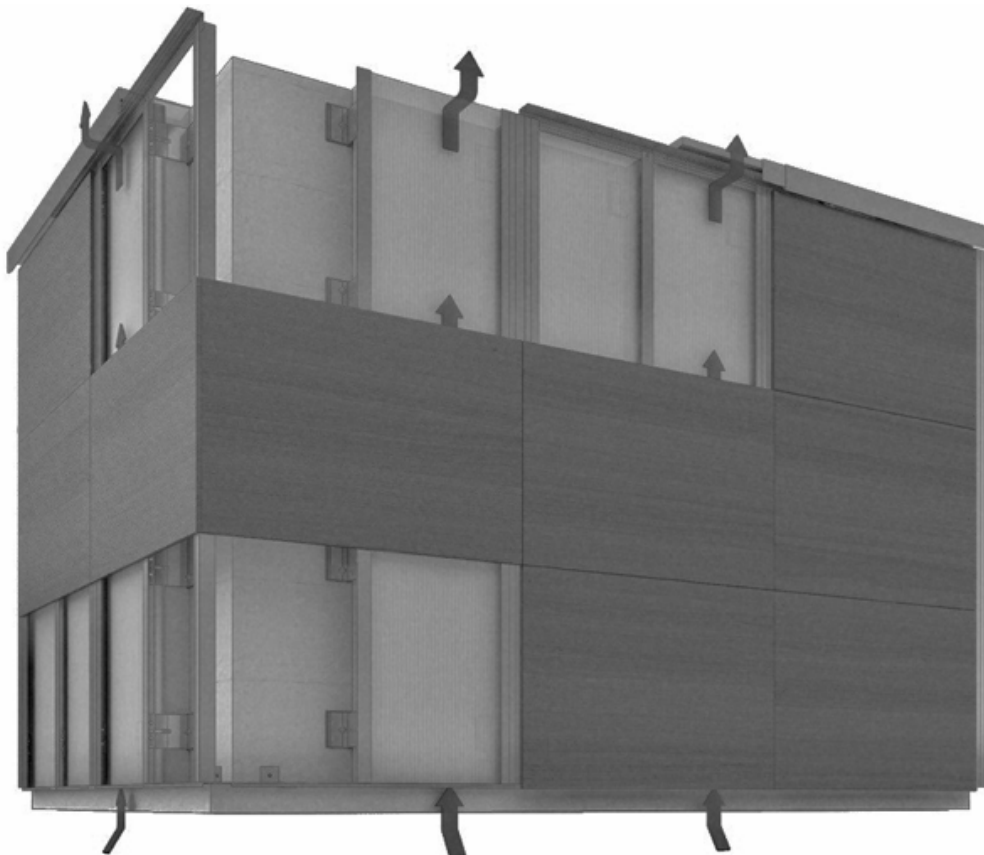
Ventilation

Installed as a ventilated facade system Fibreclad contributes to the energy efficiency of the building by deflecting heat as well as eliminating condensation through natural ventilation.



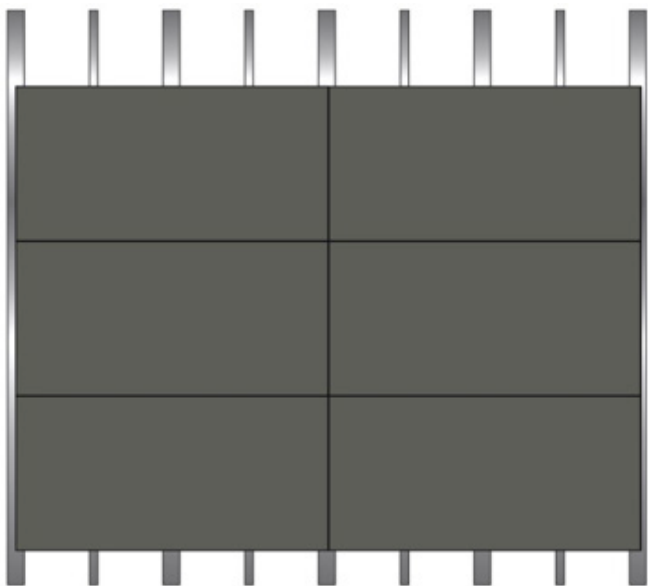
Key benefits

- Elimination of Humidity
- Energy saving
- Structural movement reduction
- Maintenance free = Self sustainable facade
- Acoustic = Increased comfort

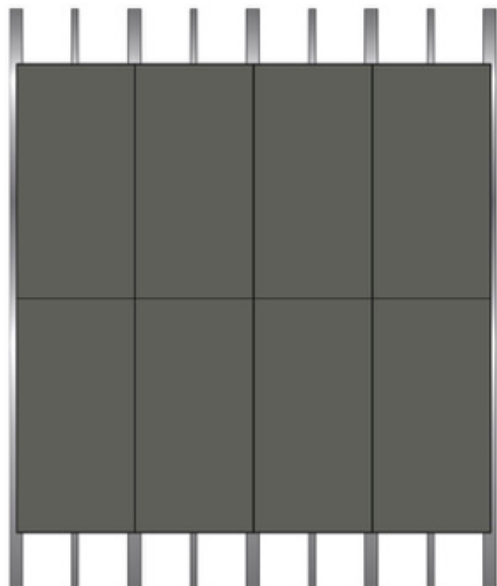


Panel Layout

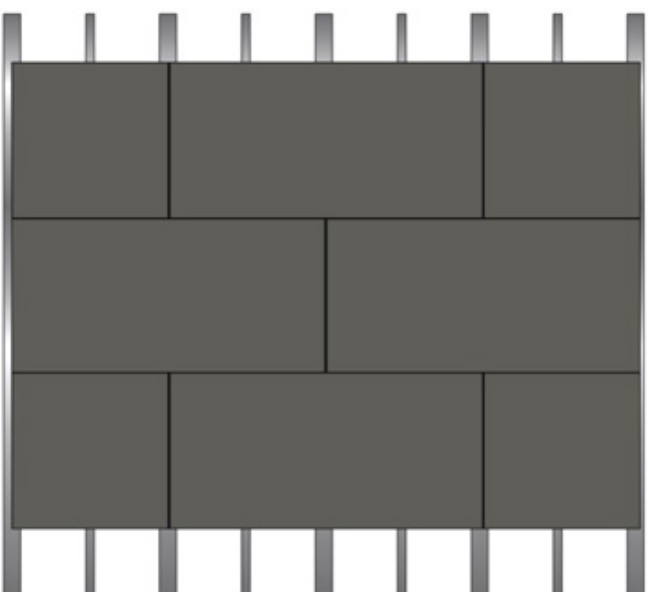
Horizontal layout:
Stack bond pattern



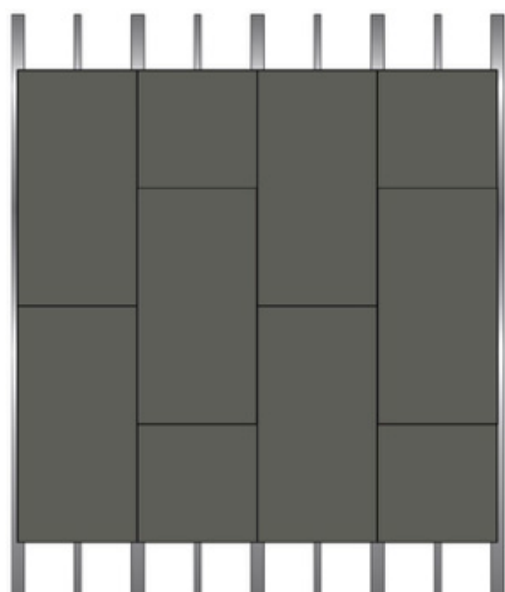
Vertical layout:
Stack bond pattern



Horizontal layout:
Running bond pattern



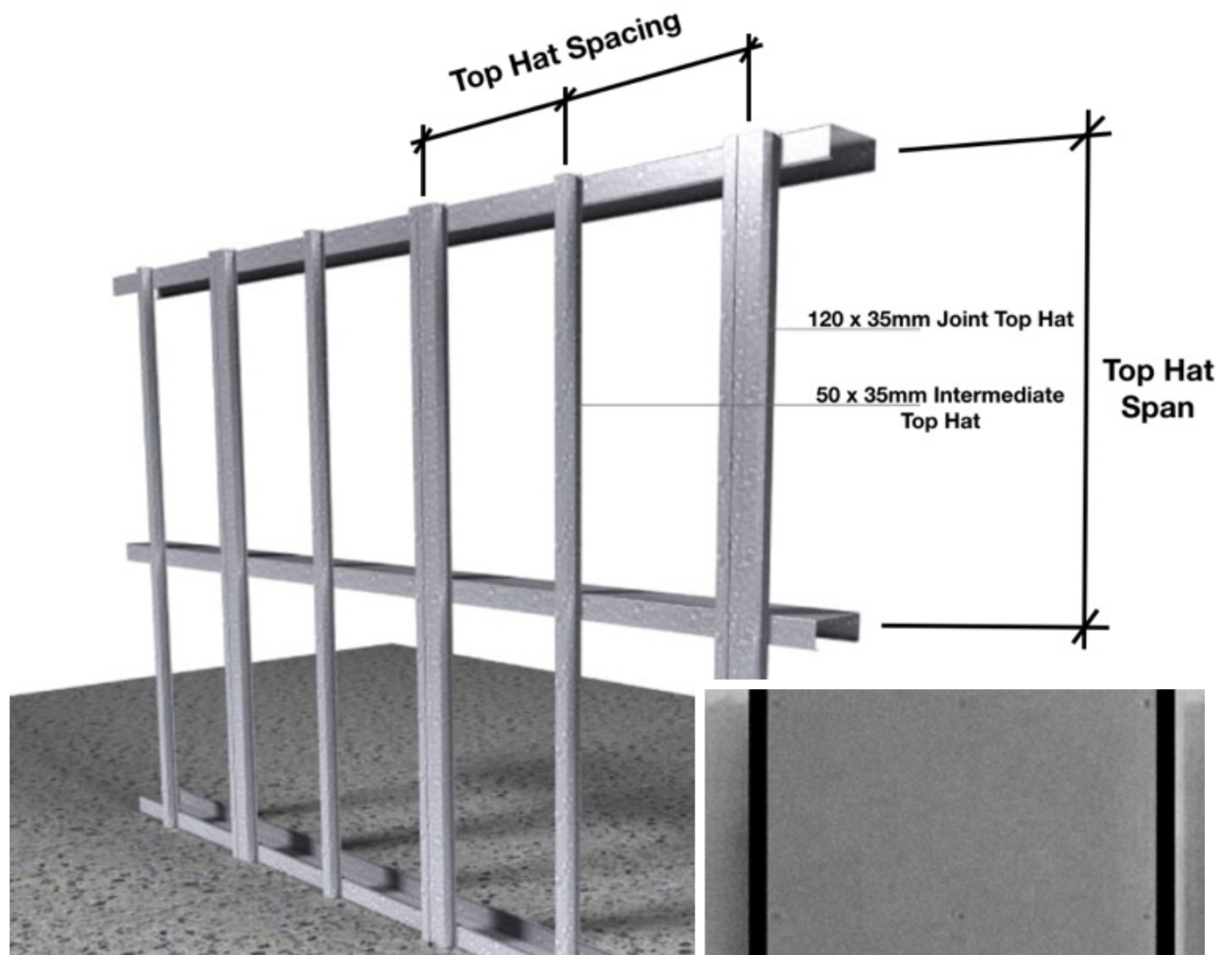
Vertical layout:
Running bond pattern



Top Hat Installation

It is the responsibility of the contractor to ensure that the metal support frame is installed in accordance with local building regulations.

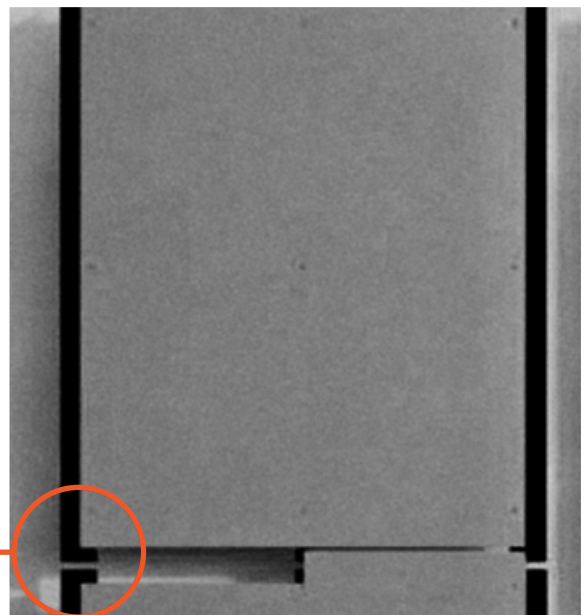
Certification for the structural stability of any supporting frame specific to project requirements must be obtained by the project engineer.



Minimum 20mm gap between top hat profile.

Joints between profiles must also coincide with horizontal joints between panels.

Panel should never be fixed to two separate profiles.



Top Hat wind load capacity

SERVICEABILITY - L/150 limit			SERVICEABILITY - L/240 limit		
Serviceability Wind Pressure	Maximum Tophat Spacing (mm)		Wind Pressure	Maximum Tophat Spacing (mm)	
	2 Tophats	3+ Tophats		2 Tophats	3+ Tophats
(kPa)	(Single Span)	(Double Span)	(kPa)	(Single Span)	(Double Span)
1.00	600	600	1.00	550	600
1.50	550	600	1.50	450	600
2.00	500	600	2.00	400	600
2.50	450	600	2.50	400	550
3.00	450	600	3.00	350	500
3.50	400	550	3.50	350	450
4.00	400	550	4.00	350	450
4.50	400	500	4.50	300	450
5.00	350	500	5.00	300	400
5.50	350	500	5.50	300	400
6.00	350	450	6.00	300	400

TOP HAT STRENGTH		TOP HAT SERVICEABILITY - L/300 LIMIT	
Ultimate Wind Pressure	Maximum Tophat Span	Design Wind Pressure	Maximum Tophat Span
(kPa)	(mm)	(kPa)	1750
1.00	1400	1.00	1500
1.50	1300	1.50	1400
2.00	1200	2.00	1300
2.50	1050	2.50	1300
3.00	950	3.00	1300
3.50	900	3.50	1250
4.00	850	4.00	1200
4.50	800	4.50	1150
5.00	750	5.00	1150
5.50	700	5.50	1110
6.00	650	6.00	1110
6.50	650		
7.00	600		

It is the responsibility of the contractor to ensure that the metal support frame is installed in accordance with local building regulations.

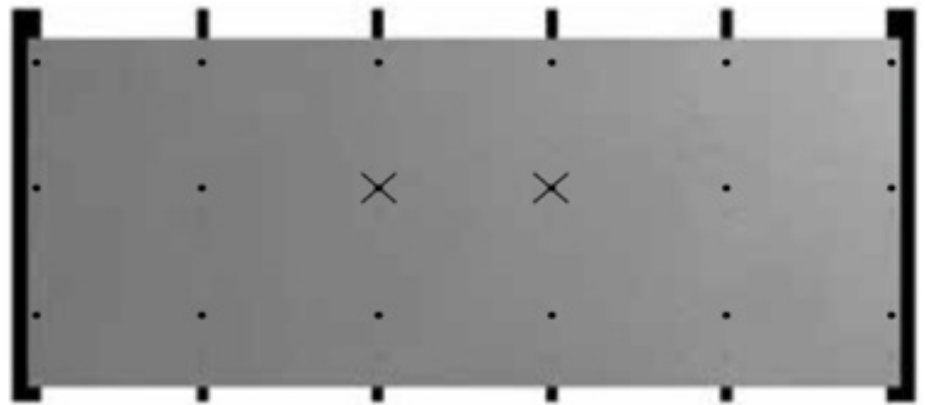
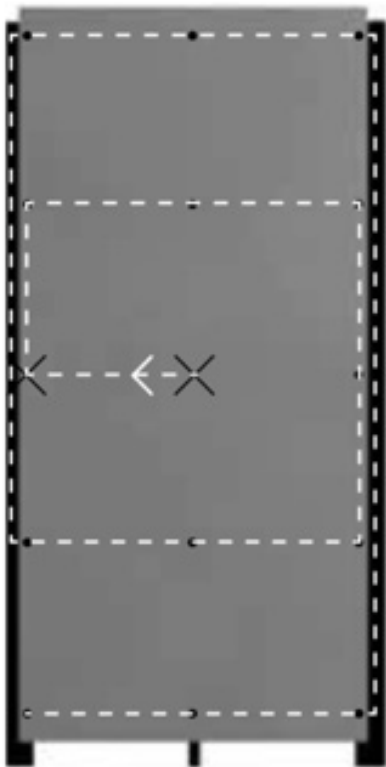
Certification for the structural stability of any supporting frame specific to project requirements must be obtained by the project engineer.

Design wind load	Maximum centre distances of rivet fasteners
≤ 1.2kPa	600mm
1.2–2.0kPa	500mm
2.0–2.5kPa	400mm
> 2.5kPa	300mm

Minimum profile thickness	Aluminium Galvanised/stainless steel	≥ 2.0mm ≥ 1.15mm
Minimal depth of profile		≥ 35mm
Minimal width of intermediate profile		≥ 40mm
Minimal width of vertical joint profile		≥ 90mm
Recommended width of joint profile		≥ 120mm
Maximum buckle under influence of strain		≤ Span/250
Safety factor calculation of strength		3
Maximum length of vertical profile		6m
Movement joints between adjacent profiles		20mm
Maximum unsupported length from last bracket/anchor		250mm

Fibreclad Fixing details

Fibreclad Fasteners -Screws/Rivets Fixings

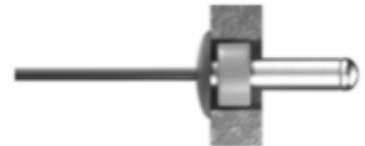


Face fix coloured Screws

Face fix coloured Rivets

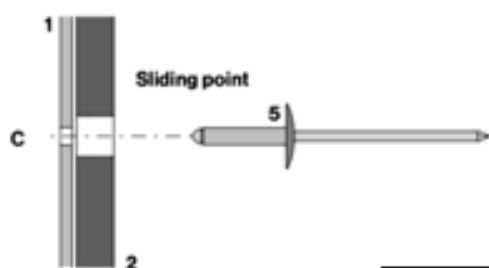
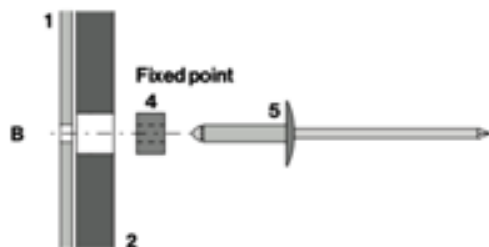
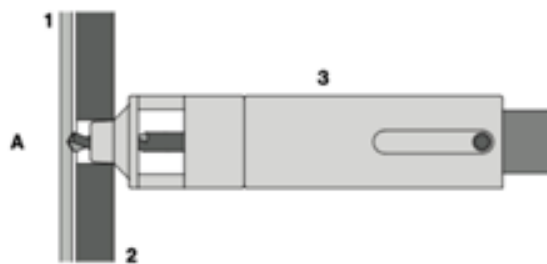


X : Fixing point hole diameter 5mm.
Drill bit 8mm for screws Floating point



X : Fixing point hole diameter 9mm.
Insert sleeve in the hole before rivets

Face fix sequence Rivets



1. Top Hat
2. Panel
3. Centralising tool
4. Rivet sleeve
5. Rivet

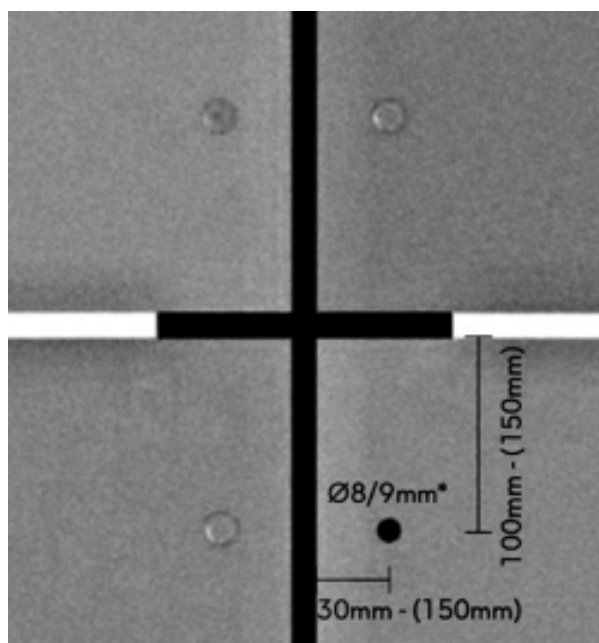
Fibreclad Fixing details

Fibreclad Fasteners – Screws/Rivets Fixings

Soffit/Ceiling application (8mm panel) - Max support centres 400mm - Max screw/rivet centres 400mm



Fixing distances from panel edges

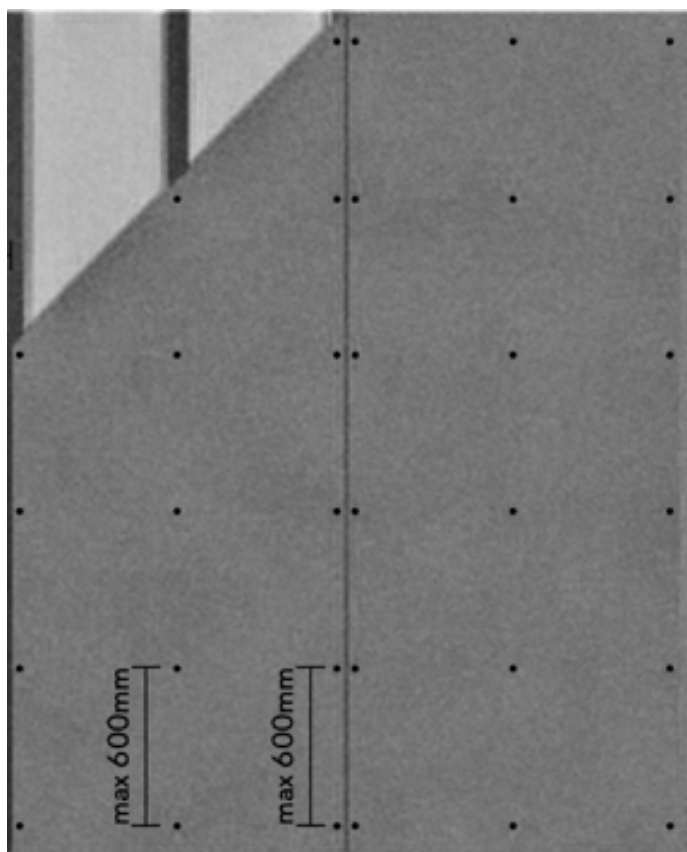


All panels should have 2 fixed points regardless of size and the remaining fixings as sliding points to allow for movement.

Fixed points should be located on separate carrier rails and located as near as possible to the horizontal central line as, if no central row of fixings are available, use the nearest row.

If more than one rail is available behind panels, use the centre most rails for fixed points.

Maximum fixing centres (subject to windload)



Fibreclad Fixing details

General distances

The Panel should finish between 10 and 30mm below the bottom end of the substructure.

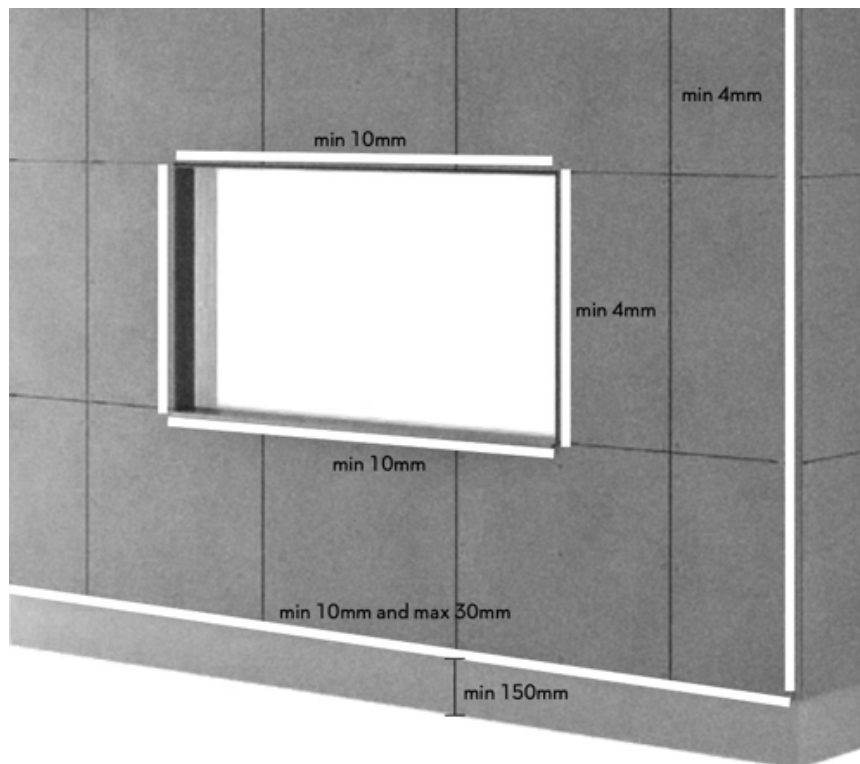
For overhang the maximum distance is 100mm.

The distance to terrain from the bottom edge of the facade board should be a minimum of 150mm

Vertical clearance to profiles such as Back Flashing or corner profiles should be a minimum of 4mm

For horizontal clearances at windows and doors etc., you must leave a minimum of 10mm for ventilation.

The clearance to other building materials should be minimum 8mm for movement and water drainage.

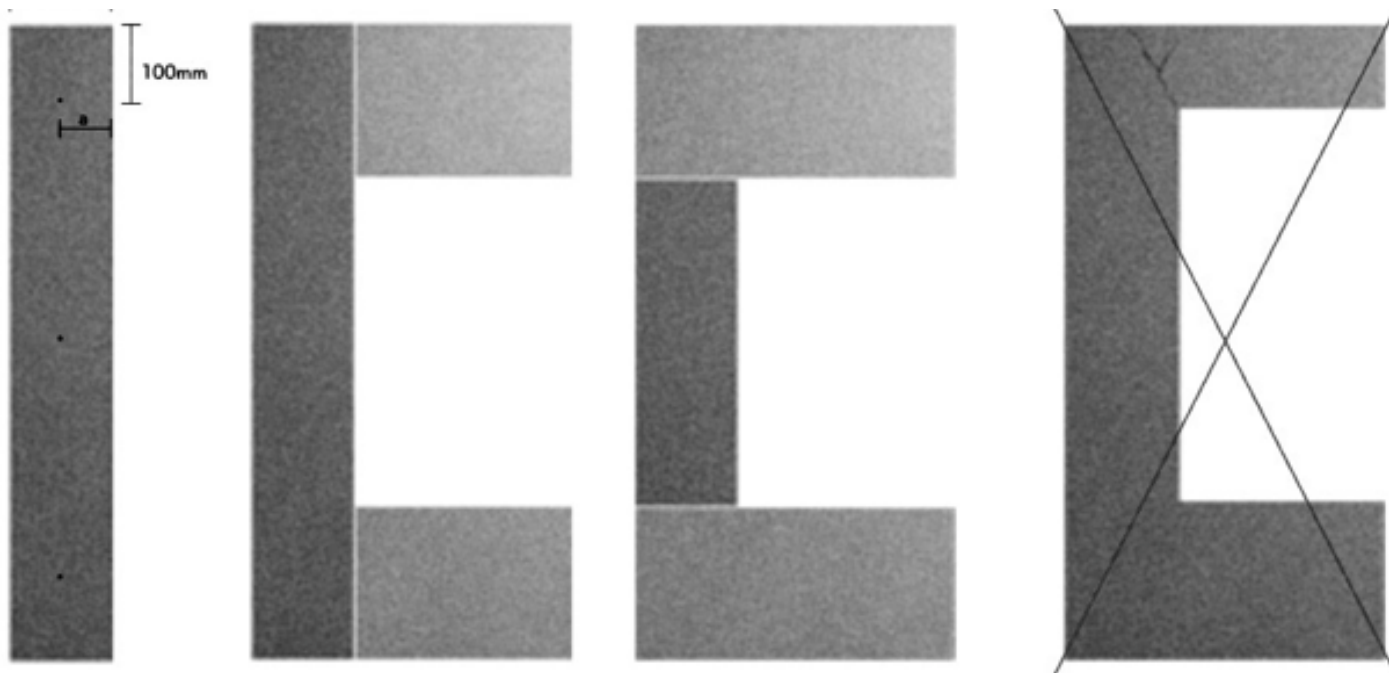


Cut outs

When Installing Fibreclad around windows, doors and other openings. To avoid cracking, cut smaller section and install them individually.

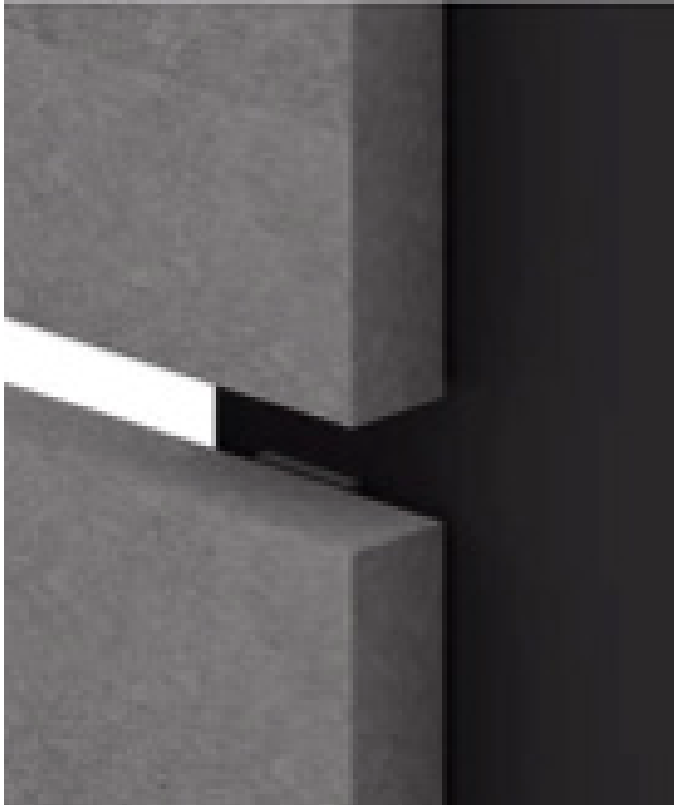
Keep all vertical joint to 8mm

Cut outs that are not wider than 100-150mm, can be mounted with one screw/rivets in the middle of the panel. This applies to window reveal or other narrow spaces.

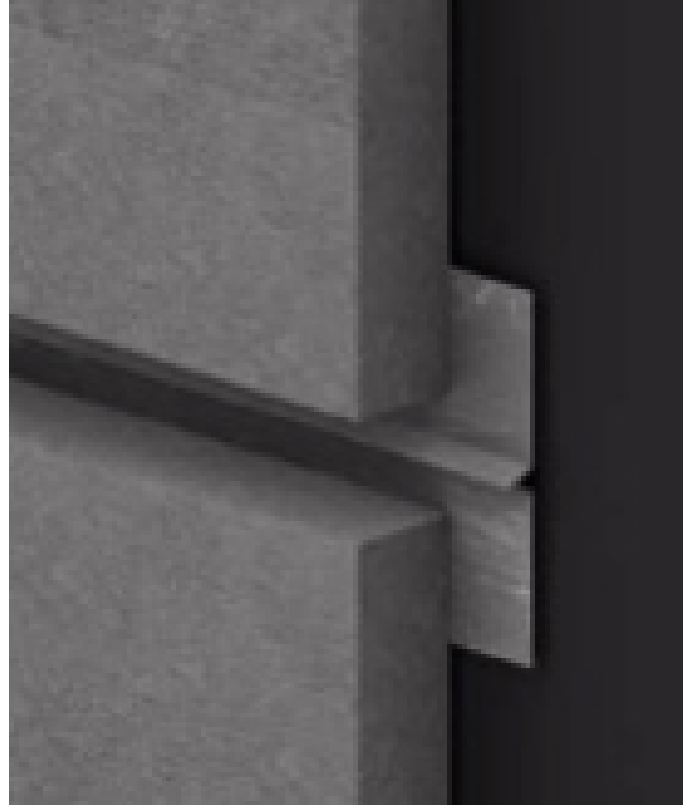


Fibreclad Fixing details

Joint details



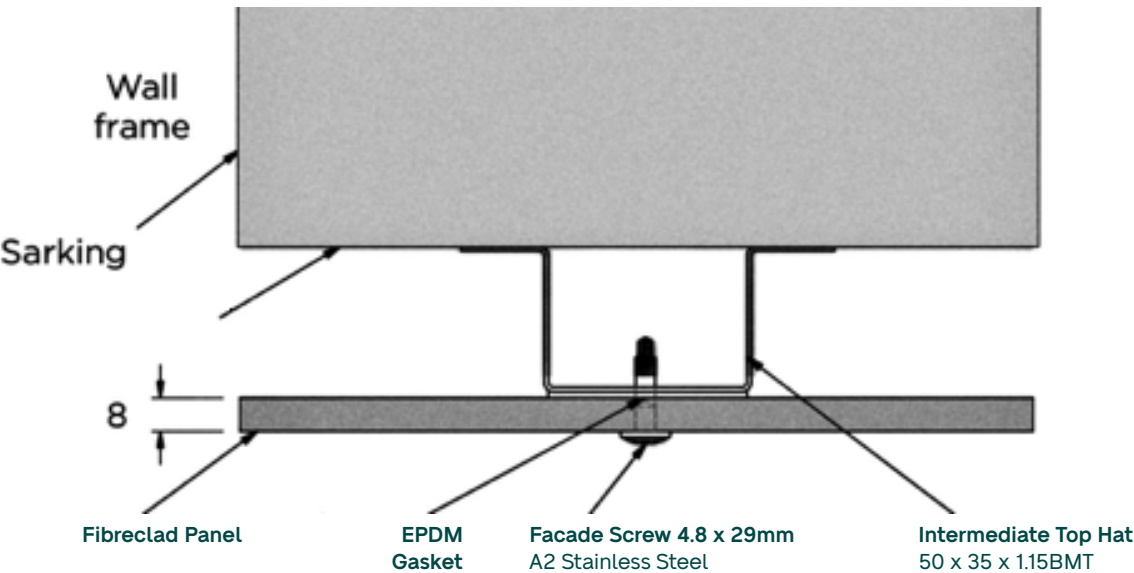
Open joint



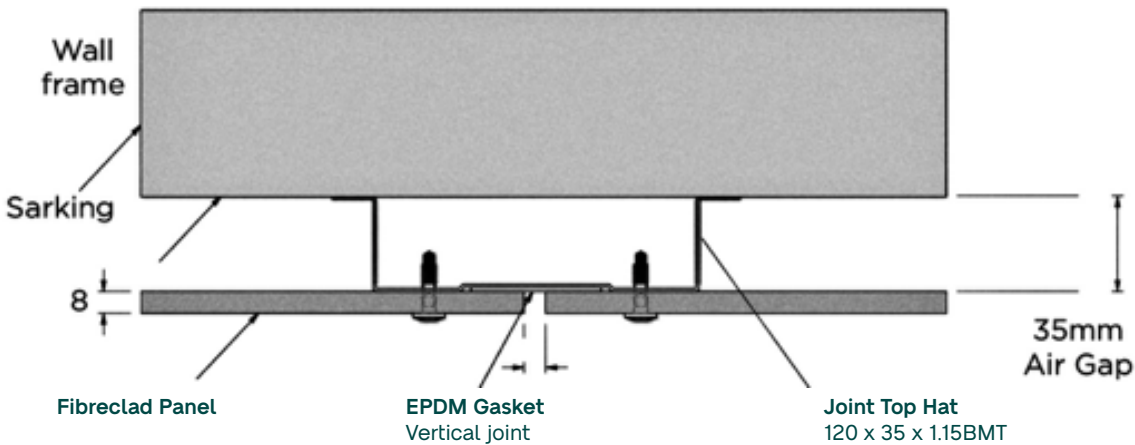
Closed joint back flashing

Fibreclad Fixing details

Horizontal Cross Section Intermediate Support

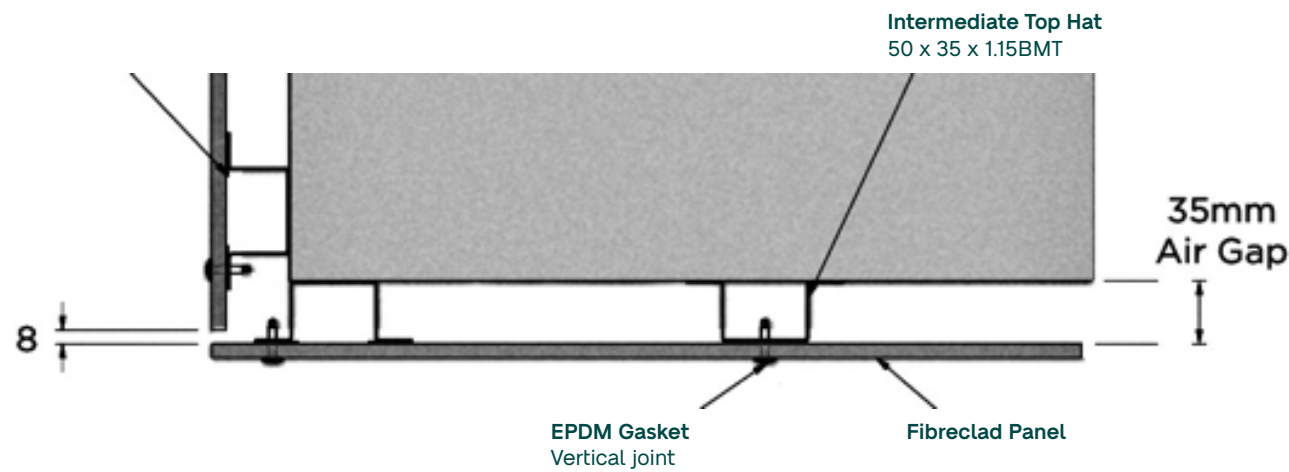


Horizontal Cross Section Vertical Joint

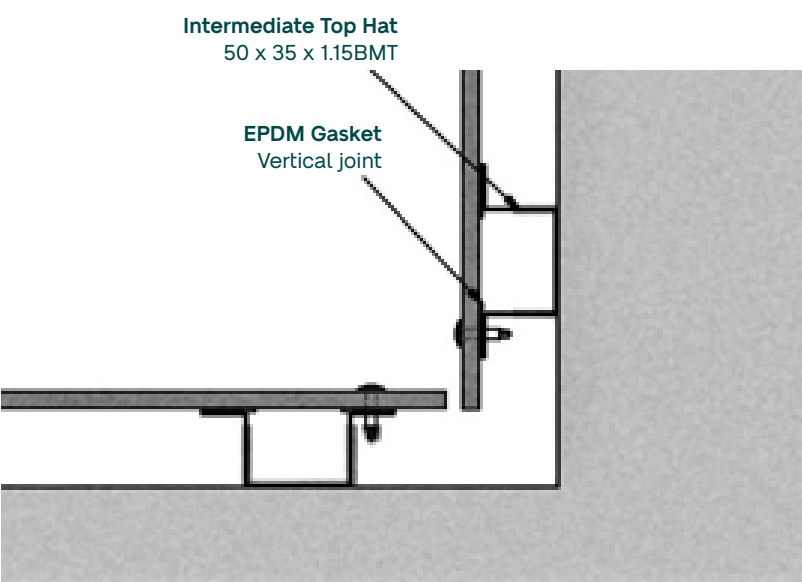


Fibreclad Fixing details

Horizontal Cross Section External Corner

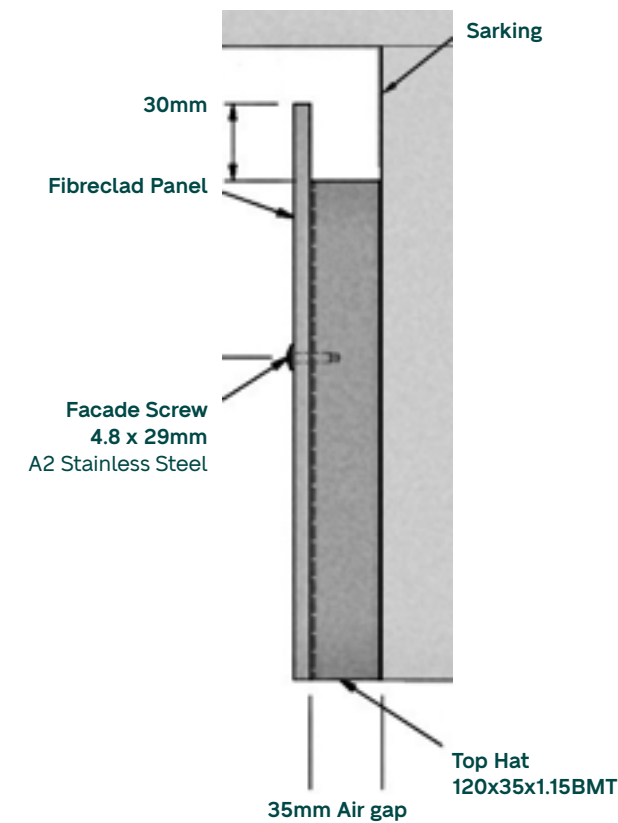


Horizontal Cross Section Internal Corner

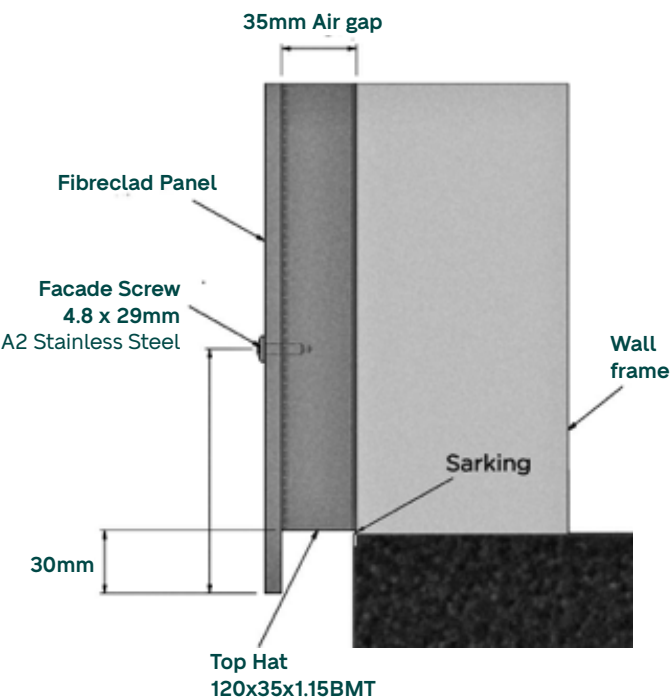


Fibreclad Fixing details

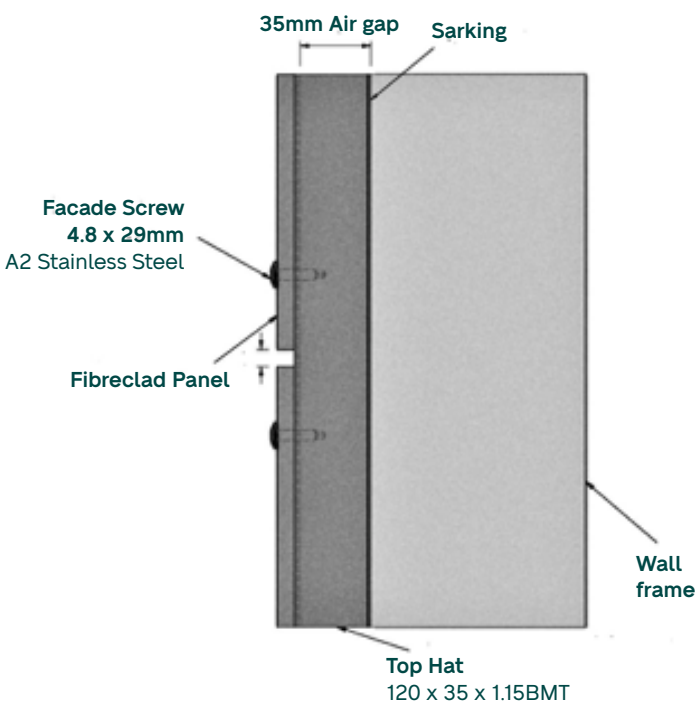
Soffit Detail



Bottom Detail

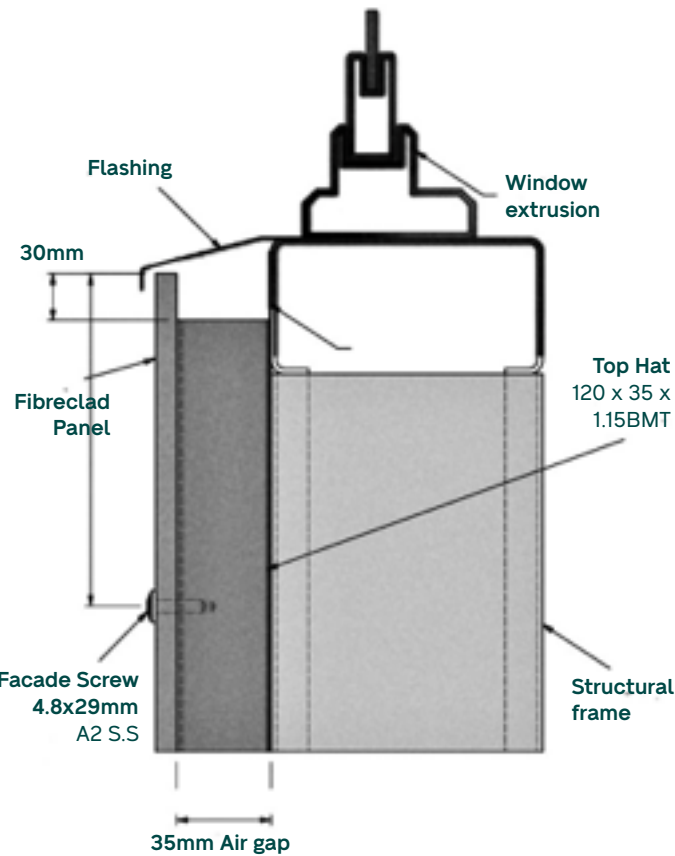


Horizontal Joint

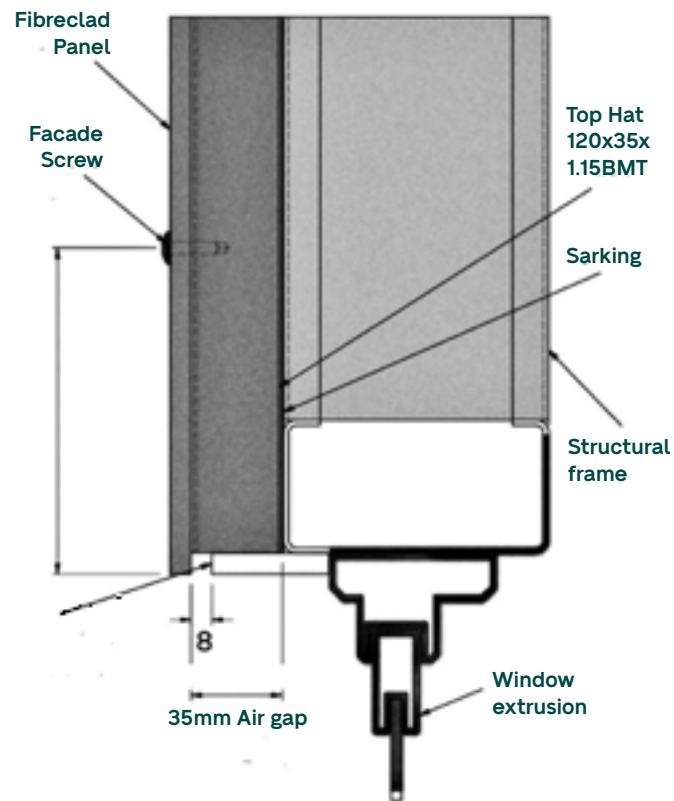


Fibreclad Fixing details

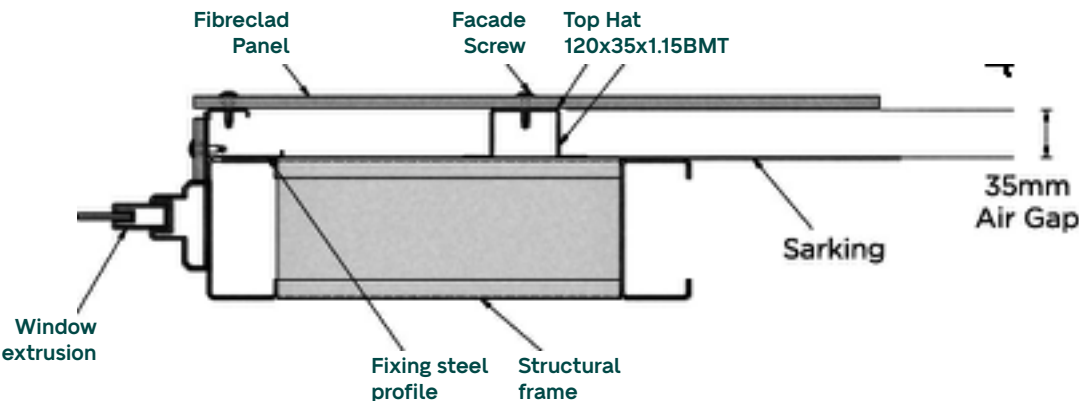
Window Sill



Window Head

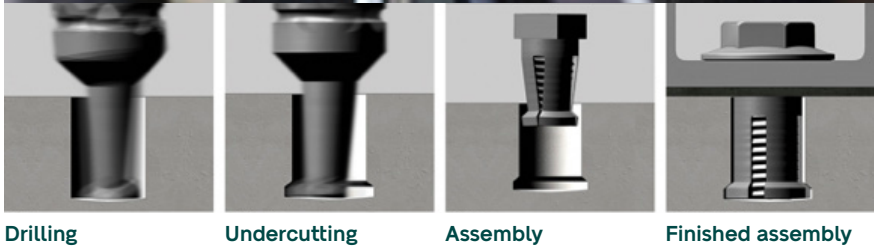
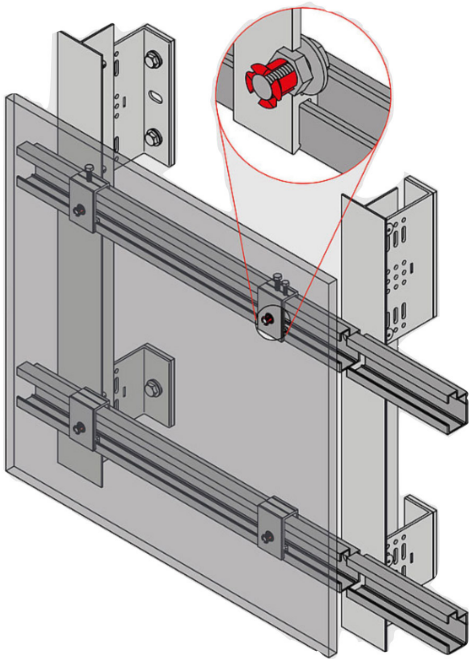


Window Reveal

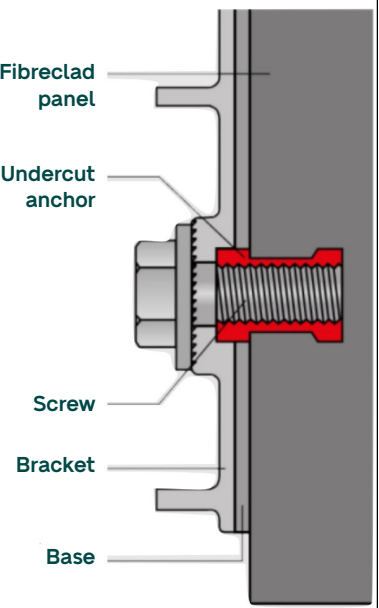


Fibreclad Fixing details

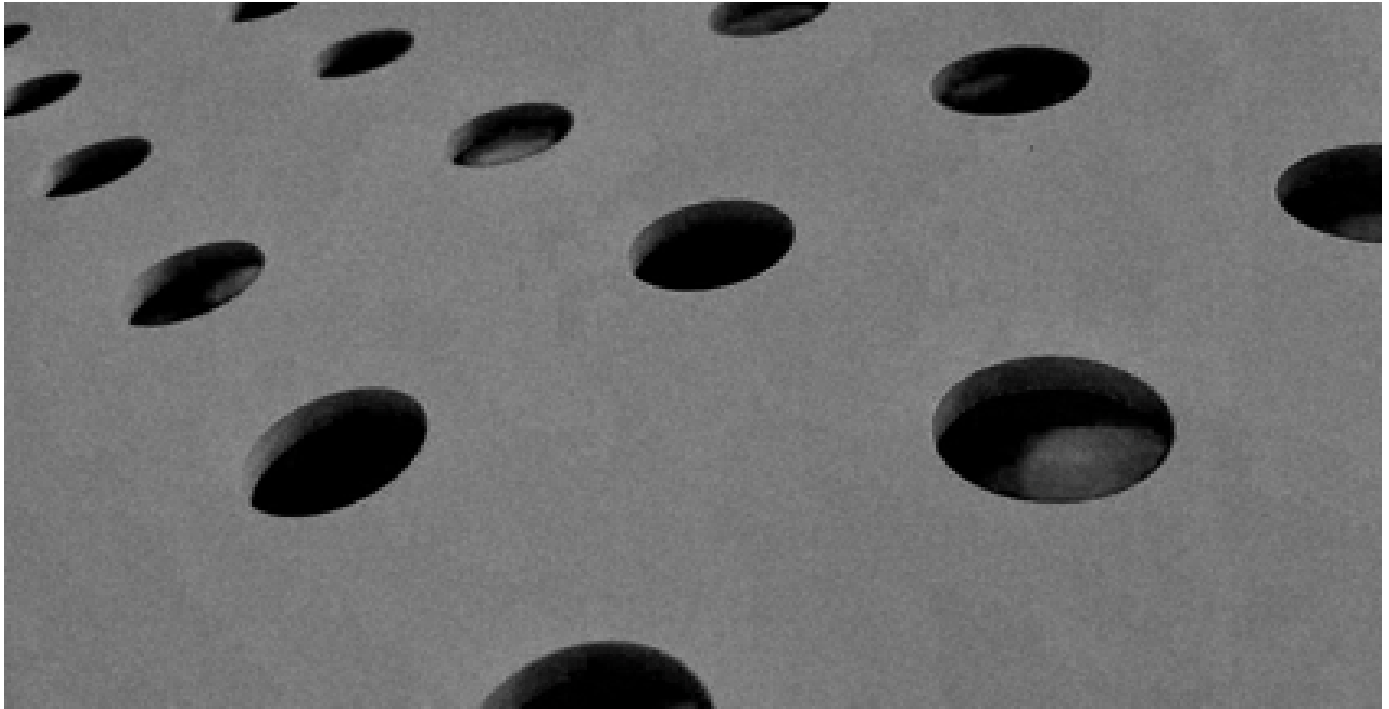
Hidden mechanical fixing system



Hidden mechanical fixing can be used to fix Fibreclad panels 10mm,12mm to the aluminium carrier system with drilled undercut fastener holes in the back of the panels, hanging brackets are attached to the back of Fibreclad panels.



Perforation



Perforation of Fiberclad panel

FIBRECLAD warranty covers perforation up to 10 years as standard based on the following criteria:

- **Maximum 20% of panel surface area removed**
- **Maximum hole diameter 100mm**
- **Minimum distance of 100mm from the edge and to fixings**
- **Distance between perforation holes is double the diameter of the hole**

Warranty

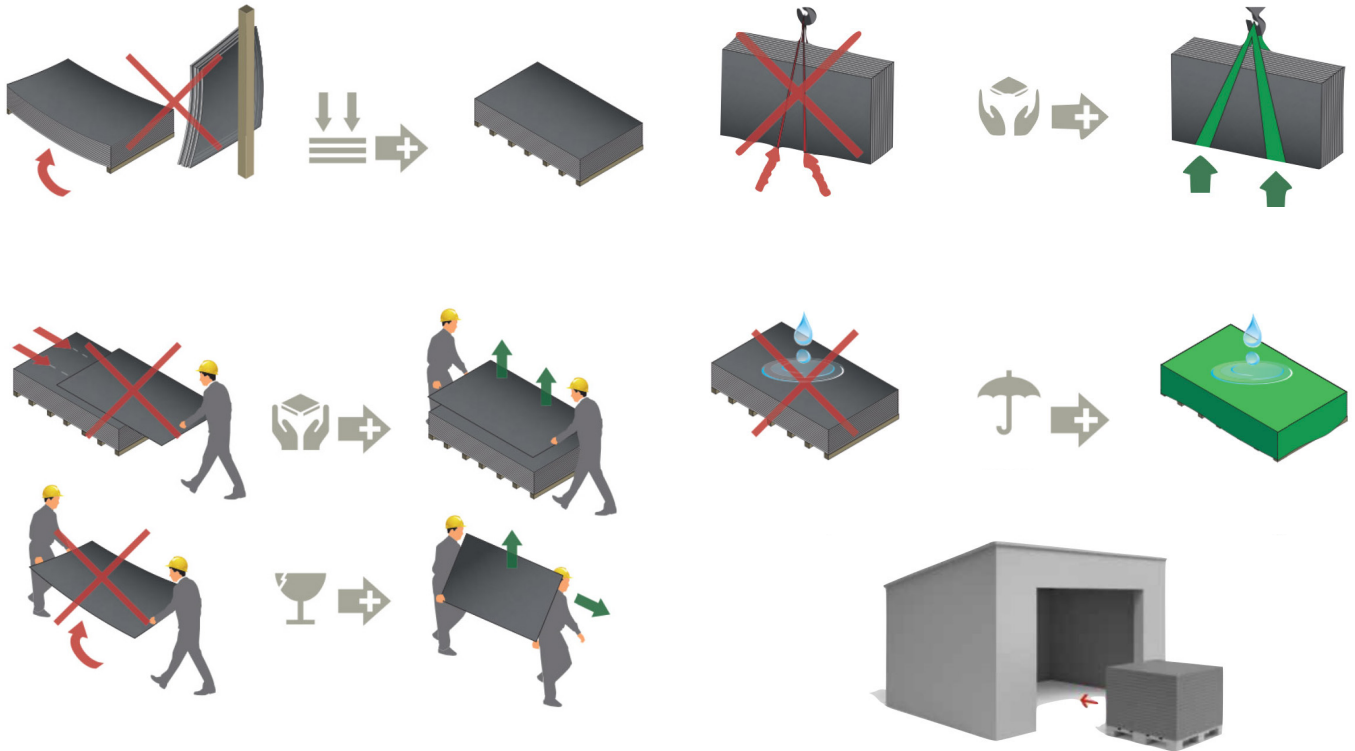
FIBRECLAD 10 years warranty is effective from the date of purchase.

FIBRECLAD will be free from defects in materials and manufacture, subject to the conditions outlined in the warranty document.

For the warranty to be effective, FIBRECLAD panels must be installed strictly in accordance with the recommended installation methods.

DISCLAIMER - The surface may show naturally occurring white flecks, variations in tone and appearance which adds to the aesthetics of the material.

Storage & Handling



Always store Fibreclad panels on a flat, dry and level surface.

Do not stack the pallets more than two high, and ensure protective material is placed between the pallets

If the pallets are stored outside, the plastic cover should be removed and replaced with a heavy-duty waterproof tarpaulin.

Ensure ventilation around the tarpaulin to ensure condensation is reduced.

If the Fibreclad facade panels are stored on site for more than 2 weeks, they should be kept indoors in a dry and well-ventilated location.

If sheets are removed from pallets, these should be stored flat on bearers spaced no more than 500mm to give correct ventilation.

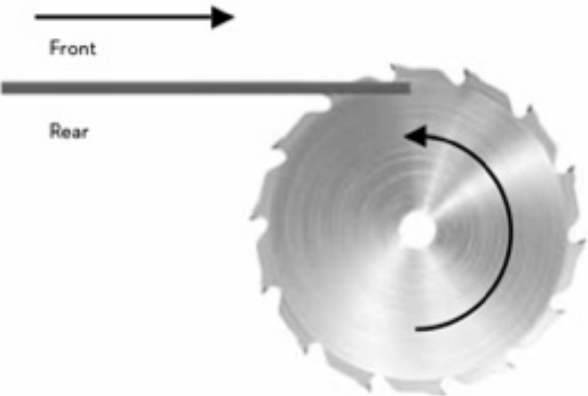
Always ensure after processing that the foam sheet is replaced between sheets when panels are being stored or transported.

Always lift panels cleanly off each other, do not slide panels over one another as scratching and damage may occur

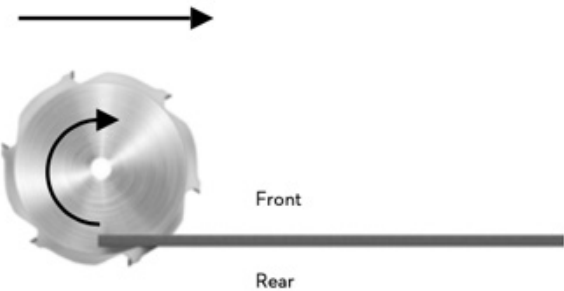
If using a crane, use wide, soft lifting straps that will not damage the panels

Fabrication

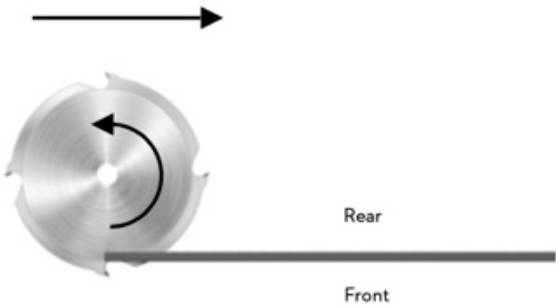
Cutting



When using a table saw, place the board with the face uppermost on the table and cut from the rear of the board.



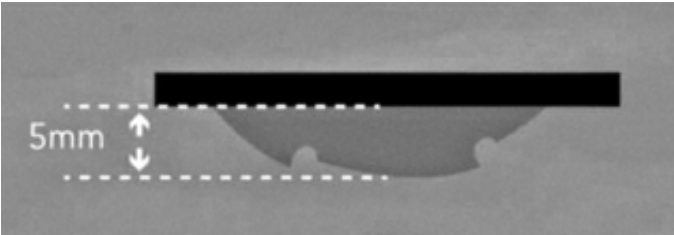
When using a mitre saw or drop saw, cut the board from the front



When using a circular saw or dive saw, cut the board from the rear

Once boards are cut, you can bevel the cut edge with a fine grinder (80 grain) to give the edge a pre-cut finish.

The bevel should be angled at 45° relative to the board. This retains edge strength and removes small irregularities



When cutting using saw blades, the blade should extend approximately 5mm below the panel.

Gother blades may also be suitable and results may vary depending on tooling and machine used. It is possible to cut Fibreclad on CNC machines, recommendations from tooling or machine manufacture should be sought.

BLADE DIAMETER	BLADE THICKNESS	BOREHOLE	NUMBER OF TEETH	SAW SPEED (RPM)
160mm	2.4mm	20mm	4	4000
190mm	3.2mm	20mm	4	3200
225mm	3.2mm	30mm	6	2800
300mm	3.2mm	30mm	6	2000

Drilling



Drill panels 1 at a time using hardened steel bits suitable for fibre cement.

Dust from cutting or drilling must be removed with a brush or compressed air immediately after the work has been completed, otherwise it can mark the surface of the boards.

Health & Safety

Cutting & Drilling

When cutting, grinding or drilling, dust from the fibre cement boards is released.

This dust is characterised as mineral dust. Breathing large amounts of dust may cause irritation to respiratory functions, eyes or skin.

Therefore, Fibreclad always recommends wearing personal protection equipment or stated by local law (Safety goggles, safety suit and a respiratory mask - P2 marked).

When cutting Fibreclad facade panels ensure adequate ventilation. it may be necessary to use an extractor system or a HEPA filter vacuum attachment attached to the power saw.

If ventilation is not adequate to limit exposure, wear a disposable respirator or air purifying cartridge respirator fitted with a Class P2 filter.

Sizes

1200 x 2500mm — 1200 x 3000mm

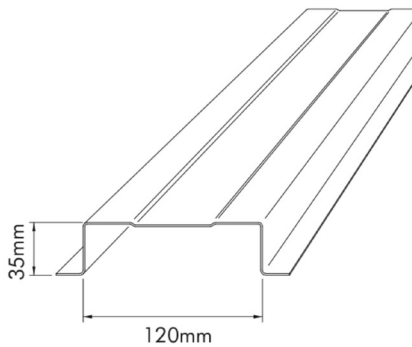
Thickness mm	6	8	10	12	15	20	25	30
Weights kg/m ²	10,8	14,4	18	21,6	27	36	45	54

Technical Information

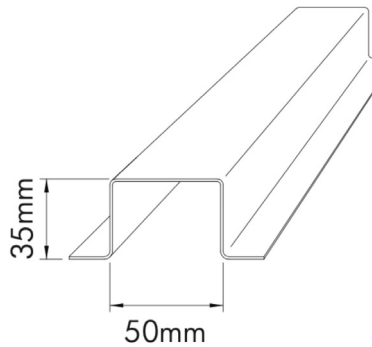
Characteristics	Fibreclad
Density (dry)	≥1,6 kg/dm ³
Max water absorption(*) - untreated sheets	≤ 25%
Max water absorption(*) - hydrophobic sheets	≤ 9%
Max water absorption(*) - UV treated sheets	≤ 3%
Natural humidity	10 ÷ 15%
Movement in extreme weather conditions/temperature and moisture conditions -5°C + 100°C; 20 + 90%	1,5 mm/m
Thermal conductivity	0,36 W/mK
Thermal expansion coefficient	0,00001 °C ⁻¹
Fire rating	class A2 - s1, d0
Freeze resistance	optimum
Oils, acids, bases, salts resistance	good
Waterproof - inalterability	absolute
Wear resistance	good
Bending strength (wet)	≥24 N/mm ²
Bending strength (dry):	
- perpendicular rupture to fibres	32 N/mm ²
- parallel rupture to fibres	22 N/mm ²
Standard sizes mm	2500 x 1200 & 3000 x 1200
Tolerances on nominal dimensions	Level 1 (±2 mm length / ±1 mm width)
Tolerances on straightness of edge	Level 1 (0,1%)
Tolerances on squareness of edges	Level 1 (2mm/m)
Tolerances on thickness for smooth sheets	±0,2 mm
Compression resistance	40 N/mm ²
Resilience	2 Nmm/mm ²
E modulus of elasticity (dry)	13.000 N/mm ²
Superior caloric power	0,14 MJ/kg
Vapour resistance factor	45
Durability classification (EN 12467:2012)	category A
Strength classification (EN 12467:2012)	class 5
CE marked prout	EN 12467:2012

*wet over dry

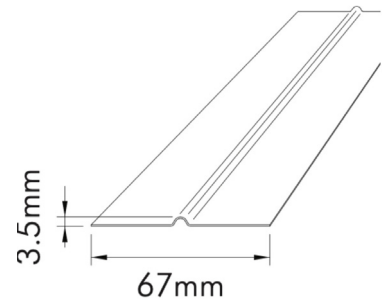
Accessories



Joint Top Hat 120x35x1.15BMT



Intermediate Top Hat 150x35x1.15BMT



3.5mm x 0.48 BMT
Finished black on external face



EPDM rubber closed cell gasket tape



Fibreclad Edge sealer

Use only with Fibreclad Anti-graffiti
Application conditions: +5 °C - +30 °C
and relative humidity <85 %

Screws

Profile



SCR-S 4.8x29mm A2 Stainless steel
LACQUERED

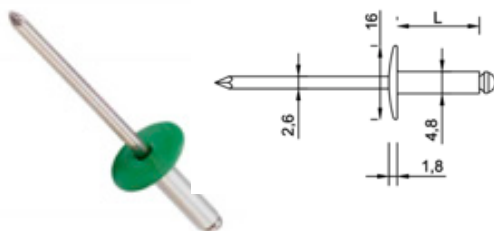


Sx3-L12 Torx L30 Screw For Metal
Lacquered



Screwing device E-420 for irius
head

Rivets



SSO-D15 Stainless 316 Rivet
AP16 Aluminium Rivet 4.8 x 16-20mm



Centering device - manual - for ap rivets

Centralising
tool



Fix point sleeve

Care & Maintenance

Care & Maintenance

Annual Inspection

Fibreclad facade panels do not require any maintenance. Weathering may however influence the appearance of the facade.

Therefore, an annual inspection of the ventilation gaps, joints and fixings is a good idea. Detection and repair of possible damage ensures a prolonged lifespan for the facade.

Cleaning

Fibreclad facade panels can be cleaned with cold or luke-warm water if necessary with the addition of a mild household cleaning agent not containing solvents.

Rinse with plenty of clean water until the facade is clean.

Before full scale cleaning, it is preferable to test the chosen cleaning method on a smaller area to ensure it's effective and does not damage the panels surface.

High-Pressure Cleaning may damage the surface and not recommended

Moss & Algae

Moss and algae growth can be removed with common detergents available on the market. Care should be taken to ensure that the cleaning agent does not cause damage to the surface of the Fibreclad facade panels. Confirm the compatibility of your cleaning agent with your cleaning agent supplier, and ensure it is applied according to the supplier's instructions. It is advised that before conducting a large-scale application a test is carried out on a small, inconspicuous area to ensure that the cleaning agent has no effect on the colour of Fibreclad facade panels.

Efflorescence

Efflorescence is a naturally occurring, white, powdery deposit that can appear on cement-based building materials (including bricks, cement walls, grout, and fibre cement). It is the result of a process in which moisture draws salt crystals to the surface, evaporates, and leaves a chalky substance behind. Efflorescence occurs when all three of the following-conditions exist:

1. Water-soluble salts are present in the building material.
2. There is enough moisture in the wall to turn the salts into a soluble solution.
3. There is a path for the soluble salts to get to the surface.

Efflorescence may also be a sign of water ingress behind the facade. Make certain that all openings are properly covered and there is no water intrusion due to over-driven nails.

While some efflorescence may weather away naturally on its own, it is best to take steps to treat it.

Efflorescence can be removed with household white vinegar and water. For most cases of efflorescence, Step 1 - 3 works well. But for substantial deposits of efflorescence go to Step 4

Cleaning instructions:

1. Protect areas that are not to be cleaned. Rinse all plants and vegetation around the facade with water before and after application of the vinegar.
2. Generously coat the entire surface area with vinegar. Allow the solution to sit on the surface for 10 minutes.
3. Rinse the treated area thoroughly with water from the top down and allow the area to air dry.
4. For extra tough efflorescence:

Use a 10% acetic acid solution and apply to affected area with a cotton cloth. A light scrubbing with the cotton cloth may be required. After about 15-20 seconds rinse with water.

Contact

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Network
Architectural