



Face Fixed on Wood Frame Planning & Application Guide



Architect: DOMUS Studio Project SC Sieniański & Sieniański Location: Gdansk, Poland

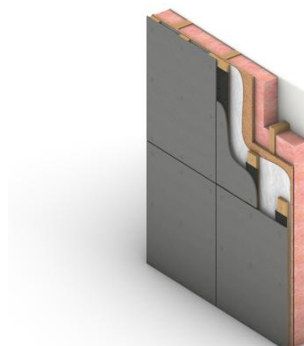
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Introduction

General information

This Planning and Application Guide serves only as a general guide providing basic design considerations and information in relation to the application and installation of EQUITONE façade panels for common external applications. This guide illustrates that the installation of EQUITONE fiber cement façade materials is straightforward, provided some simple rules are followed.

EQUITONE typical construction details are available as separate documents which **must be read** in conjunction with this Planning and Application Guide.



About EQUITONE

EQUITONE is a high strength cement rainscreen panel of high-density fiber cement material. Fiber cement is a mineral composite with outstanding physical and aesthetic properties. Our company, Etex, has led development and innovation of this versatile architectural building material for more than a century, and offers a full range of exterior solutions including aesthetic fiber cement panels, sidings for the residential and architectural sectors under various brands. EQUITONE high density fiber cement is available globally and manufactured in state-of-the-art facilities in Belgium, Germany and Poland.



LIGHTWEIGHT



EXCELLENT
RESISTANCE TO FIRE



MINIMAL MAINTENANCE



STRONG



FROST PROOF



AESTHETICALLY
PLEASING



VERY DURABLE



RESISTANT TO FUNGI
AND INSECTS

Disclaimer

This guide provides comprehensive information, but it is not exhaustive. Readers should ensure that the contents are appropriate for their intended use. It is the responsibility of the project consultants (designer, architect, and engineers) to ensure that the information and details provided in this document are appropriate for the project.

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EQUITONE materials

Materials

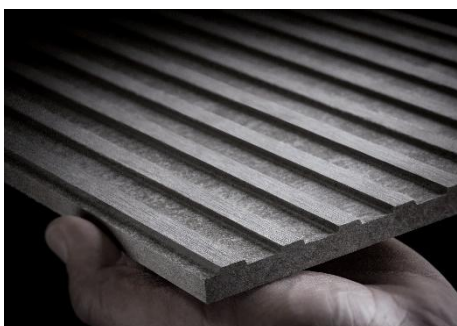


For detailed information about EQUITONE materials, manufacturing tolerances and their technical properties, refer to their Material Information Sheet available from the EQUITONE website. EQUITONE finishes are available in a variety of colors. For all available colors refer to the EQUITONE website.



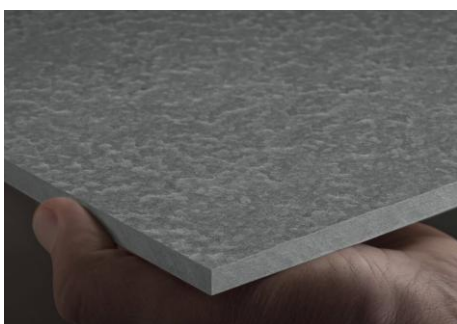
EQUITONE [tectiva] is a through-colored, uncoated fiber cement façade material, characterized by a sanded surface and naturally occurring hues within the material. Every [tectiva] panel is unique, expressing the raw texture of the core fiber cement material.

Thickness	Weight
5/16 in (8 mm)	3.05 psf (14.9 g/m ²)
3/8 in (10 mm)	3.81 psf (18.6 kg/m ²)



EQUITONE [linea] is a unique 3D-shaped, through-colored fiber cement façade material that plays with light and shadow. Its surface with longitudinal grooves displays a linear structure that highlights the raw inner texture of the core fiber cement material. Throughout the day, the shifting angles of light and shadow transform the facade material, revealing a dynamic and ever-changing character.

Thickness	Weight
3/8 in (10 mm)	3.44 psf (16.8 kg/m ²)



EQUITONE [lunara] is a through-colored, uncoated fiber cement façade material, that embodies an honest and pure appearance. Featuring a unique texture, the surface of the panel is determined by a randomized surface treatment, which means no recurring pattern ensuring each panel is unique. Naturally occurring color differences are accentuated by the surface, as the extraordinary look and feel emphasizes the originality of the fiber cement material.

Thickness	Weight
3/8 in (10 mm)	3.81 psf (18.6 kg/m ²)

EQUITONE materials



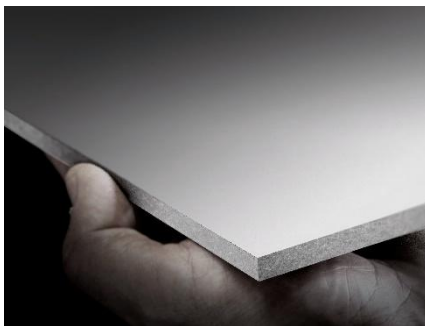
EQUITONE [natura] is a through colored fiber cement base board, with a semi-transparent colored finish, subtly displaying the raw texture of the core fiber cement material. The rear face has a transparent sealing coating.

Thickness	Weight
5/16 in (8 mm)	3.15 psf (15.4 kg/m ²)
15/32 in (12 mm)	4.67 psf (22.8 kg/m ²)



EQUITONE [natura] PRO is comprised of a UV-hardened, anti-graffiti, and high abrasion-resistant surface coating. This coating offers protection against common spray paints and scratches, making it an ideal choice for internal and high-traffic areas.

Thickness	Weight
5/16 in (8 mm)	3.15 psf (15.4 kg/m ²)
15/32 in (12 mm)	4.87 psf (22.8 kg/m ²)



EQUITONE [pictura] is a fiber cement façade material with ultra matte finish comprised of a UV-hardened, anti-graffiti, and high abrasion resistant surface coating. This coating offers protection against common spray paints and scratches, making it an ideal choice for internal and high-traffic areas.

Thickness	Weight
5/16 in (8mm)	3.15 psf (15.4 kg/m ²)
15/32 in (12 mm)	4.87 psf (22.8 kg/m ²)



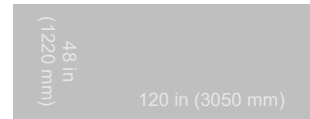
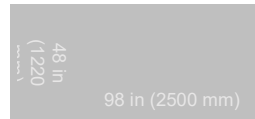
EQUITONE [inspires] is a hi-strength (high-density) fiber cement panel designed for ventilated rainscreen systems. Its smooth, matte surface features a digitally printed design protected by a UV-resistant finish, offering the look of natural materials with the durability of cement. [inspires] brings bold visual impact to facades without compromising on performance.

Thickness	Weight
5/16 in (8mm)	3.44 psf (16.8 kg/m ²)

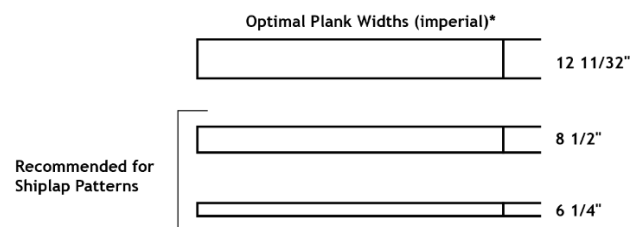
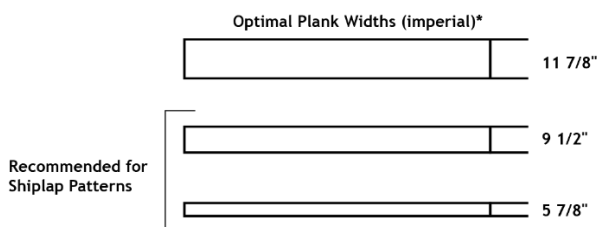
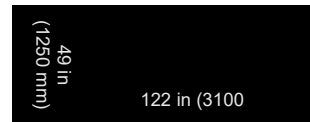
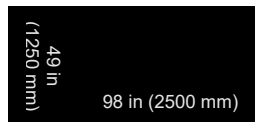
EQUITONE rainscreen façade

Maximum usable panel sizes

EQUITONE [linea]
EQUITONE [lunara]
EQUITONE [tectiva]



EQUITONE [natura]
EQUITONE [natura] PRO
EQUITONE [pictura]
EQUITONE [inspires]



Ventilated rainscreen

EQUITONE fiber cement materials have been developed for an open-joint ventilated rainscreen system. A rainscreen is an assembly applied to an exterior wall which consists of, at minimum, an outer layer, an inner layer, and a cavity between them sufficient for the passive removal of liquid water and water vapor. What makes a rainscreen ventilated is allowance for air openings at the top and bottom of the rainscreen system.

For this manual, we will use the terms of cladding system or rainscreen to mean the complete system whereas facade or cladding will refer to just the outer most aesthetic layer.

The cladding shields the backup wall from direct rain. However, depending on the nature of the joints between panels some water penetration may occur. The cavity and water barrier combine to limit this penetration. The cavity space can evaporate or drain this moisture away safely.

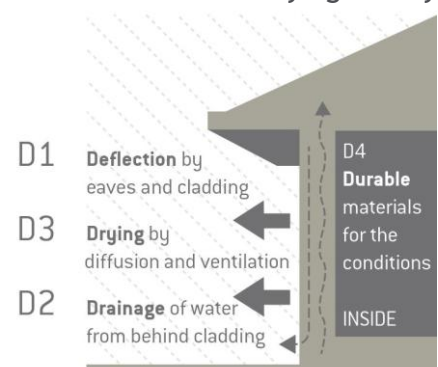
The concept of the 4 D's of weather tightness is simple way of explaining a ventilated façade. This principle is gaining popularity as it draws particular attention not only to the weather tightness of a building envelop with the proper application of a suitable weather barrier but also to the application of appropriate flashings and the like for the deflection and directing of any moisture, entering the ventilated facade cavity, out and away from the building envelope rather than over-relying on any exposed sealants and sealing of cladding skin.

Deflection: Proper detailing of the façade and flashings for deflection, with the aim of keeping water out

Drainage: Allowance for clear paths for the water to drain outside, should water get in

Drying: Adequate provision for ventilation and vapor diffusion within the cladding cavity to eliminate remaining water

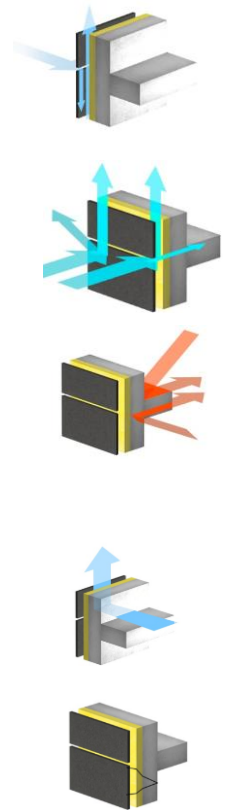
Durable: Use of components with adequate durability appropriate to the project location



EQUITONE rainscreen façade

Allowance for adequate ventilation is paramount in ensuring a successful EQUITONE rainscreen. A ventilated façade provides several added benefits to the building and its occupants, compared to non-ventilated systems. These may include but are not limited to the following:

- Drained and ventilated systems are provided with openings that provide both ventilation and a drainage escape route. This combination allows air to circulate in and dry the cavity between the inner and outer layers.
- In the wintertime, a ventilated facade helps keep the building warmer via the air acting as a moderating insulation; protecting the actual insulation from rapid temperature swings.
- In the summer convection causes air to rise and exit the facade while pulling in cooler air in at the bottom.
- Rainscreen cladding helps dissipate radiant heat through reflection or absorption. Energy absorbed by the cladding is then dissipated by the ventilation effect in the cavity.
- Positive contribution to energy savings because the continuous insulation is placed on the outer face of the structure.
- Can minimize the buildings thermal bridges when designed to minimize interruptions through external continuous insulation.
- Assists with condensation management. Any risk of interstitial condensation occurs in the ventilated cavity. The breathable structure allows water vapor to pass from the inside into the ventilated cavity.
- Reduces thermal movement of the building structure and cladding support frame.
- Provides improved sound insulation.
- Proven to be a healthier facade construction.



Besides the typical building physics advantages, a ventilated façade with High-Strength fiber cement:

- Unlike other facade materials, high density eliminates the need for exposed caulking and sealant, therefore reducing maintenance requirements.
- Unlike other facade materials, it does not need repainting to maintain its aesthetic appeal.
- Provides opportunities for concealing external services such as downpipes within the cavity.
- Offers architectural design flexibility.
- Can be installed in various weather conditions.
- Can deal with tolerances of the building (e.g., renovation of old building).
- Is non-combustible.
- Can be dismantled into its individual components and re-used.

EQUITONE rainscreen façade

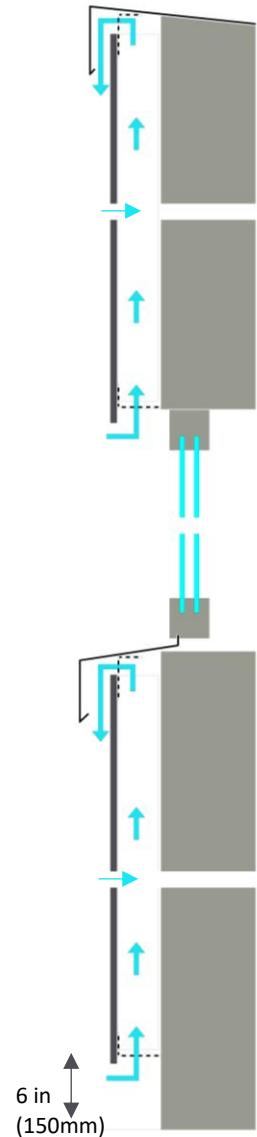
Air inlets and outlets

Air must be allowed to enter the cavity from the bottom of the panels, window head, soffit, slab junctions, and the like, and exit at the top of the panels, capping, windowsill, slab, and soffit interfaces, and the like.

The size of air inlets and outlets depends on the continuous height of the facade panels. For effective ventilation, the size of the air outlet should always be greater than or equal to the size of the air inlet.

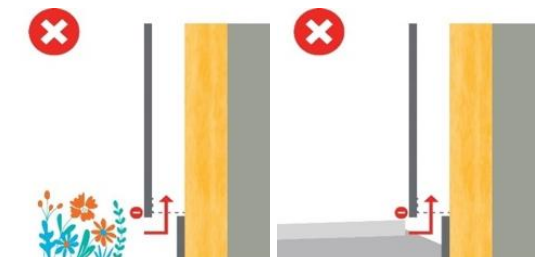
Open Joint System		
Height from Façade Inlet to Outlet	Min. Air Inlet/Outlet Unobstructed Opening	Min. Inlet/Outlet Open Air Area
0-16 ft [0-5 m]	3/8 in [10 mm]	4.5 in ² /ft [100 cm ² /m]
>16-33 ft [> 5-10 m]	1/2 in [13 mm]	6 in ² /ft [130 cm ² /m]
>33-44 ft [> 10-13.5 m]	3/4 in [20 mm]	9 in ² /ft [200 cm ² /m]
>44-66 ft [> 13.5-20 m]	3/4 in [20 mm]	9 in ² /ft [200 cm ² /m]
>66-99 ft [> 20-30 m]	1 in [25 mm]	12 in ² /ft [250 cm ² /m]
>99-134 ft [> 30-41 m]	1 1/4 in [32 mm]	15 in ² /ft [320 cm ² /m]
>134-165 ft [> 41-50 m]	1 1/2 in [38 mm]	18 in ² /ft [380 cm ² /m]

Closed Joint System		
Height from Façade Inlet to Outlet	Min. Air Inlet/Outlet Opening	Min. Inlet/Outlet Open Air Area
0-16 ft [0-5 m]	3/8 in [10 mm]	4.5 in ² /ft [100 cm ² /m]
>16-28 ft [> 5-8.5 m]	3/4 in [20 mm]	9 in ² /ft [200 cm ² /m]
>38-44 ft [> 8.5-13.5 m]	1 in [25 mm]	12 in ² /ft [250 cm ² /m]
>44-77 ft [> 13.5-23.5 m]	1 1/4 in [32 mm]	15 in ² /ft [320 cm ² /m]
>77-99 ft [> 23.5-30 m]	1 1/2 in [38 mm]	18 in ² /ft [380 cm ² /m]
>99-137 ft [> 30-42 m]	2 in [51 mm]	24 in ² /ft [510 cm ² /m]
>137-165 ft [> 42-50 m]	2 1/2 in [64 mm]	30 in ² /ft [640 cm ² /m]



The air inlets and outlets must be kept open and unobstructed to maintain drainage and ventilation of the cavity. No planting or garden, decorative or ornamental plants should be allowed near the air inlets as over time these may block the air inlets

At the base of the façade, typically a minimum clearance of 6 in (150 mm) above the finished ground/floor level is suggested. This will help prevent rain splash-back from the ground while maintaining sufficient space for the air to enter the cavity. Where rain splash-back effect is not a concern, e.g., in covered areas, the ground clearance may be reduced with respect to the above recommended minimum air inlet sizes.



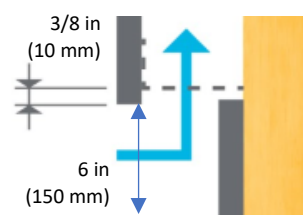
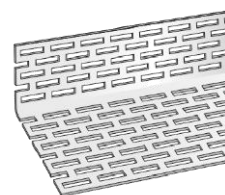
EQUITONE rainscreen façade

Ventilation with perforated closure

If by local regulations, or architectural design, the use of a perforated closure is required e. g. to vermin-proof the cavity then the size of the inlet and outlet must be increased depending on the open area percentage of the used profile to achieve a bare minimum open area listed in the tables above. E.g., in the case of a 35% perforated closure, the minimum open gap should be a minimum of 1 3/32 in [27.8mm] to achieve a minimum open area of 4.5 in²/ft [100cm²/m].

The perforated angle should be less than 23 gauge (0.8mm) in thickness when placed between EQUITONE and the support frame.

The perforated angle shall be positioned to allow an adequate drip edge to the cladding panel. Preferably the façade panel overhangs more than 3/8 in (10 mm) below the perforated closure.



Cavity

The cavity is a primary feature of a ventilated façade. It is designed to act as a pressure cushion to prevent water from reaching the backing wall. By ventilating the cavity, moisture that arises from water passing the panel, moisture migrating from the inner surface of the wall, or the action of condensation will be removed either by evaporation or simply running down the back of the panel and draining out of the cavity.

Cavity width

It is generally considered that the minimum cavity width should be at least 3/4 in (20 mm) immediately behind the back of the panel. This minimum width is only suitable for open jointed systems on mid-rise buildings up to 44 feet (13.5 m) high. As the façade gets higher, the cavity width needs to increase accordingly.

Generally, the recommended cavity width is as below:

Open Joint System							
Height from Façade Inlet to Outlet	0-16 ft [0-5 m]	>16-33 ft [>5-10 m]	>33-44 [>10-13.5m]	>44-66 ft [>13.5-20 m]	>66-99 ft [>20-30 m]	>99-134 ft [>30-41 m]	>134-165 ft [>41-50 m]
Min. Air Cavity	3/4 in [20 mm]	3/4 in [20 mm]	3/4 in [20 mm]	1 in [25 mm]	1 in [25 mm]	1 1/4 in [25 mm]	1 1/2 in [38 mm]

Closed Joint System							
Height from Façade Inlet to Outlet	0-16 ft [0-5 m]	>16-28 ft [>5-8.5 m]	>28-44 [>8.5-13.5m]	>44-77 ft [>13.5-23.5m]	>77-99 ft [>23.5-30 m]	>99-137 ft [>30-42 m]	>137-165 ft [>42-50 m]
Min. Air Cavity	3/4 in [20 mm]	3/4 in [20 mm]	1 in [25 mm]	1 1/4 in [25 mm]	1 1/2 in [38 mm]	2 in [51 mm]	2 1/2 in [64 mm]

NOTE: When designing the width of the cavity, it is important to make allowance for tolerance. Building irregularities, especially uneven backing walls, external insulation, and/or weather barriers, must never compromise the effective width of the cavity required for a clear airflow behind the panels. This is critical when a horizontal support frame is incorporated into the cavity space. The airflow within the cavity must not be hindered by any horizontal member e.g., framing, pipes, services, and the like.

Cavity Fire barriers

Fire regulation may require fire barriers to be incorporated into the cavity. Only fire barriers that allow for an uninterrupted airflow in the cavity are suitable.



More elaborate information on fire barriers in the specific chapter further in the document.

General components

Cladding components

UNI-Wood-Screw

EQUITONE is face fixed to timber support frame (batten/furring strip) using proprietary UNI-Wood-Screw with Standard T20 Torx socket cap with a 19/32 in (15 mm) diameter head. The head of the screw is available colored to match the panels. An uncoated UNI-Wood-Screw is also available.

The screw has a drilling point tip.

UNI-Wood-Screw is available in the following materials:

- Stainless Steel 304 (A2)
- Stainless Steel 304 (A2) with additional marine and coastal protective coating (recommended for C5 corrosion zones)
- Stainless Steel 316 (A4) (used where a higher corrosion resistance level is required)

Screw sizes

For 8 mm EQUITONE panel, and EQUITONE [linea]

Screw type
5,5x40 DP K15 Stainless Steel UNI-Wood-Screw

For 10 mm EQUITONE panels

Screw type
5,5x40 DP K15 Stainless Steel UNI-Wood-Screw

For 12 mm EQUITONE panels

Screw type
5,5x50 DP K15 Stainless Steel UNI-Wood-Screw

The benefits of using the DP UNI-Wood-Screw are easier and faster drive into timber and easier application through any metal flashings located between the panels and timber battens.

UNI-Wood-Screw collar for EQUITONE [natura] PRO and EQUITONE [pictura]

The UNI-Wood-Screw collar offers extra protection to the coating of EQUITONE [natura] PRO and [pictura]. It is not required for other EQUITONE finishes.

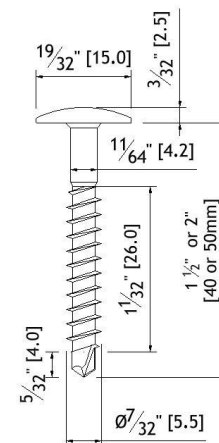
Like the UNI-Wood-Screw, the collar is also available in different grades of stainless steel as follows:

- Stainless Steel 304 (A2)
- Stainless Steel 304 (A2) with additional marine and coastal protective coating (recommended for C5 corrosion zones)

The collar should be inserted into all panel holes before screw fixing.



For further information about EQUITONE UNI-Wood-Screw and its technical properties, refer to their Material Information Sheets.



Panel hole size is 7 mm, drilled with 7 mm EQUITONE drill bit.



General components

EPDM strip

The face of all timber battens must be fully covered with an EPDM strip to protect them from moisture. EQUITONE EPDM strip is available in different widths as flat tape or as tape with ridges.

Black UV-resistant EPDM is used over timber battens/furring strips to protect the timber against moisture ingress.

Available as flat tape in different widths to suit a range of support frame batten 2 3/4 in (70 mm), 4 5/16 in (110 mm), and 5 1/8 in (130 mm) widths.

Available thicknesses: 1/16 in (1 mm)



For information about technical properties of these components refer to their Material Information Sheets available on request.

Optional components

Optional: Horizontal joint profile (baffle)

Black coated aluminum baffle is used to close the panel's horizontal joints. The profile has a thickness of 1/32 in (0.6 mm.)



Optional: Perforated closures

An aluminum perforated profile is used to close the cavity entry and outlet to prevent the entry of birds and vermin. Available in four different widths to suit a range of cavity thicknesses and two different colors: uncoated aluminum and black-coated aluminum. The perforation rate is approximately 35%.



Accessories

General accessories

EQUITONE saw blades

These blades have been designed especially for cutting high-density fiber cement panels, and when correctly used, result in a high level of finish. The blade is unique with its minimal diamond-tipped teeth which are shaped to give a tear-free edge, and its vibration-damping composite body construction. These blades can remain good for up to 5,000 m of cutting provided it is correctly used.



For information about technical properties of these components refer to their Material Information Sheets available on request.

Blade Diameter	Bore Diameter	Number of Teeth
6 5/16 in [160 mm]	3/4 in [20 mm]	4
7 1/2 in [190 mm]	3/4 in [20 mm]	4
7 1/2 in [190 mm]	1 3/16 in [30 mm]	4
8 27/32 in [225 mm]	1 3/16 in [30 mm]	6
11 13/16 in [300 mm]	1 3/16 in [30 mm]	8

Please review the EQUITONE Saw Blade Material Information Sheet for document for more information.

Jigsaw blade

Bosch T141HM jigsaw blade is recommended for curved cut-outs. It is available in a pack of three.



EQUITONE 7 mm drill bit

These are specially designed fiber cement drill bits for drilling the holes in the panels. This drill bit is a fully hardened steel bit with a cutting edge to suit fiber cement. This drill bit reduces risk of sliding on the panel surface, provides a clean cut with no burrs and does not cause burning. This results in a drill bit with a very long life.



Accessories

Material specific accessories

EQUITONE [linea] mill and drill tool

This accessory has been designed for milling and drilling EQUITONE [linea] when face fixed. The tool is equipped with built-in 7 mm bit and milling blades to both drill a 7 mm panel hole and mill the panel ridge in one operation.



LUKO edge sealer for EQUITONE [natura] & EQUITONE [natura] PRO¹

LUKO is a translucent liquid sealer that is applied to the cut edges of [natura] and [natura] PRO panels to help prevent moisture ingress in the panel. It is available in 0.5, 1, and 10 liter containers. Depending on the application, 0.5 L of LUKO could cover up to 500 linear meters of panel edge.



LUKO applicator kit for EQUITONE [natura] & EQUITONE [natura] PRO¹

A LUKO applicator kit, including an applicator and tray, is available to assist with the correct application of LUKO. Replacement sponges are also available.



¹ It is also possible to apply LUKO to the cut edges of [pictura] to prevent any possible risk of whitening of the edges (efflorescence).

Support frame

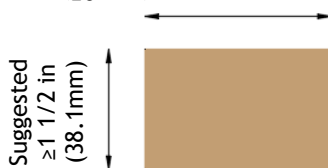
General support frame options

Batten dimensions are valid only for UNI-Wood-Screws with Drill-Point.

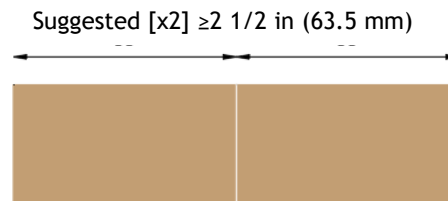
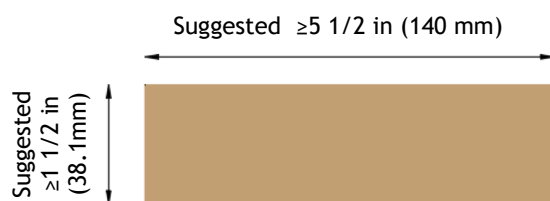
Timber battens/furring strips specifications:

- Minimum thickness: 3/4 in (20 mm)
- Minimum width for intermediate batten: 1 3/8 in (35 mm)

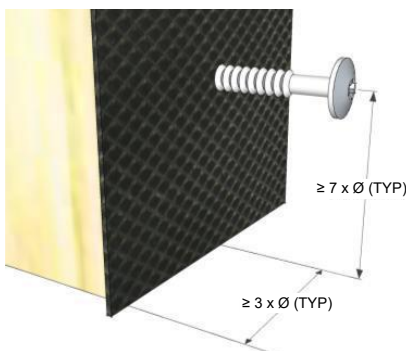
Suggested $\geq 1\ 1/2$ in (38.1 mm)



- Minimum thickness: 3/4 in (20 mm)
- Minimum width for vertical joint support: 4 in (100 mm) or two times 2 in (50 mm)



- Suggested Min. edge distance from batten end: 7x the diameter of the fastener.
- Suggested Min. edge distance from batten edge: 3x the diameter of the fastener.



The minimum recommended strengths of wood battens should be as follows:

- 3/4 in 5 ply CDX plywood
- 3/4 in Grade III OSB
- 3/4 in SPF lumber with a specific gravity of 0.42.

Note: The above values are recommended minimums and could be greater according to local regulations, standard batten sizes, and project specific load conditions. The wood battens must be sufficiently durable for the application in accordance with applicable local regulations. Timber shall be seasoned or have reached an equilibrium moisture content of 20% or less at the time of installation. Unseasoned timber is not recommended.



It is advisable to use a vertical profile that allows for some degree of installation tolerance. Support frame should have adequate corrosion resistance appropriate to the location of the project. It is the responsibility of project engineer or designer to determine the level of corrosion resistance and suitable support frame with adequate corrosion resistance required for the intended application. Maximum deflection of support frame must be limited to $\text{Span}/300$ with a maximum of 3/16 in (4 mm).

Support frame

Wood preservation

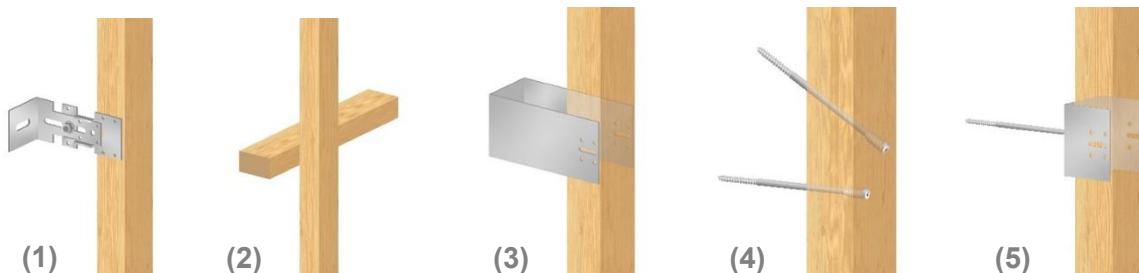
EQUITONE recommends that timber battens/furring strips be treated with a wood preservative, in accordance with local regulations to meet the longevity of the fiber cement materials. Where preservatives are used, the cut ends of the batten/furring strip should be retreated with extra preservative. Untreated timber, however, is easier to recycle or dispose of at the end of its life.



Timber batten fixings

There are various number of fixings methods, very often based on local habits and construction methods. The most common ones are being prescribed here:

- Adjustable brackets (1)
- Construction with counter battens (2)
- U-shaped batten holders (3)
- Window frame dowel (4)
- Batten holders with spacer (5)



The cladding support frame and its connection to the substructure shall be designed and selected by the project engineer in accordance with the relevant standards. The support frame maximum deflection under the influence of load shall be limited to $\text{Span}/300$ with a maximum of 3/16 in (4 mm), excluding the influence of creep. Timber framing must comply with local standards.

Angle bracket construction

In general, the angle brackets need to have several round holes for fixing the battens. Most brackets come with a sliding piece to simply adjust the length of the brackets according to the insulation and/or cavity width. Most suppliers also offer a proprietary thermal isolator gasket, suiting the brackets to reduce thermal bridging.



Instances where a bracketry framing system may be used include, but are not limited to, the following:

- Where cladding cavity width varies either due to design or uneven substrate.
- Where a wider cavity is required.
- Where external insulation is intended to be used.



For further information about framing components and product specifications, refer to the supplier of the systems. The application of framing systems shall be in accordance with its supplier's recommendations and guidelines.

Support frame

Counter batten construction

In general, the counter batten thickness and center distance suit the thickness and width of the used insulation panels.

Instances where a counter batten construction may be used include, but are not limited to, the following:

- Where the substrate has an even surface.
- Where only a limited layer of insulation is required.

U-shaped batten holder construction

The principle is similar to the angle bracket construction. The depth adjustability is limited because there is no sliding piece. Connecting insulation around the batten holder requires more precision work.

Instances where a U-shaped batten holder may be used include, but are not limited to, the following:

- Where the substrate has an even surface.
- Where no external insulation is required.

Distance screws construction

This type of construction limits the thermal bridging because of the small penetration of the insulation layer. The insulation is put in place first. The distance screws are drilled and screwed through the insulation layer in the backing wall.

Instances where a distance screw construction may be used include, but are not limited to, the following:

- Where cladding cavity width varies either due to design or uneven substrate.
- Where a wider cavity is required.
- Where external insulation is intended to be used.
- Where hard insulation types will be used.

Batten holder with spacers construction

This type of construction limits the thermal bridging because of the small penetration of the insulation layer. The fastener may be fabricated of composite material for better thermal performance. The fastener is fixed in the wall with composite mortar prior to the placement of the insulation. Once the insulation has been applied, the batten holder is screwed onto the fastener.

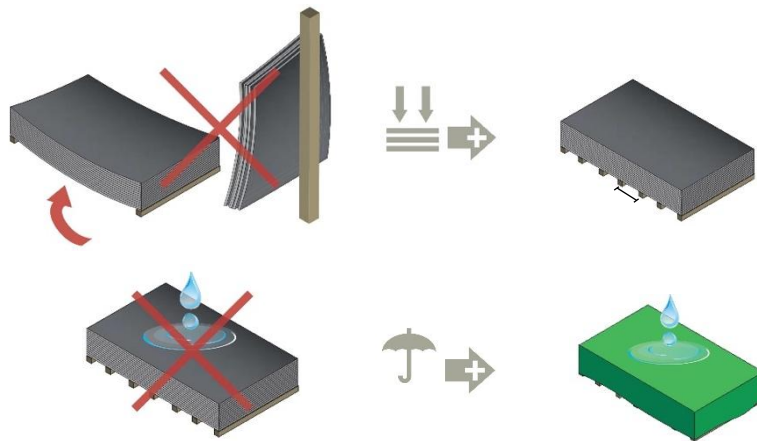
Instances where a distance screw construction may be used include, but are not limited to, the following:

- Where the substrate is even.
- Where external insulation is intended to be used.
- Where hard insulation types will be used.
- Where an external insulated render system is already in place.

Panel storage

General requirements

EQUITONE panels must be stored flat on pallets, inside and undercover in dry conditions, protected from weather and potential influence of other trades. Store panels clear of the ground and on level bearers at a maximum of 23 5/8 in (600 mm) centers.



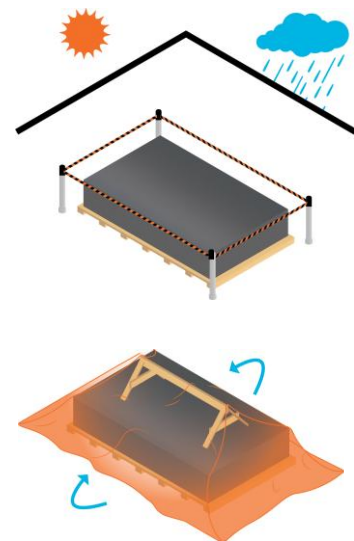
Before installation, EQUITONE panels must not get wet. Do not deliver any panels to a site that cannot be installed immediately or unloaded into a suitable well protected storage area. EQUITONE is a prefinished material; poor or inadequate storage will increase the risk of damage to the finished surfaces.

Outside storage

Where panels must be stored outside, extra care and attention is needed to protect them from rain and direct sun. Remove the outer plastic protection as this may cause condensation if left in place, especially in direct sunlight. Direct sunlight is to be avoided as this leads to uneven drying of the panels and can lead to the sticking of the protective film.

Protect the pallet from rain or condensation by covering the pallet with an opaque waterproof cover like tarpaulin. This cover must be provided with a slope, so all moisture runs off quickly, and must not be allowed to pond on the pallets. This will also allow the air to circulate around the panels. Use only opaque coverings. Clear plastic is not recommended.

If moisture can penetrate between the stored panels, permanent surface staining in the form of efflorescence may occur and may prevent the panels from being used.

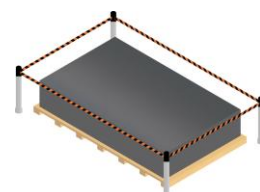
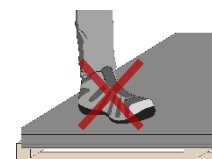


Other trades

Be aware of other trades on the job site as they may not respect the material in the same way.

Do not leave material in such a way that allows people to walk over the panels as this will leave footprints on the surface. These prints may scratch the panels or leave an oily residue on the surface, which could permanently stain the panels.

It is advisable to barricade the storage area and workstation around the panels to reduce any risk of damage by other trades.

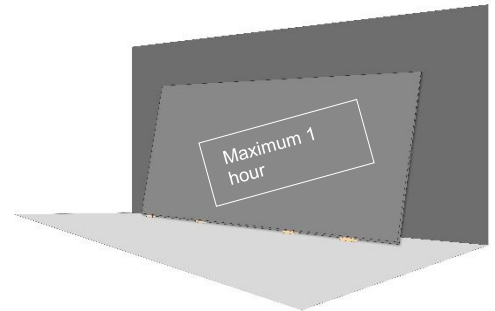


Panel storage

Panels on edge

When storing EQUITONE panels on their edges, use soft supports such as pieces of insulation or rubber-faced timber battens to rest the edge on. This can help prevent chipping or edge damage.

Only leave panels stored on their edge for a short time (maximum 1 hour) and never in wet weather. Standing the panel on its edge is not a long-term method of storage and may cause deformation.



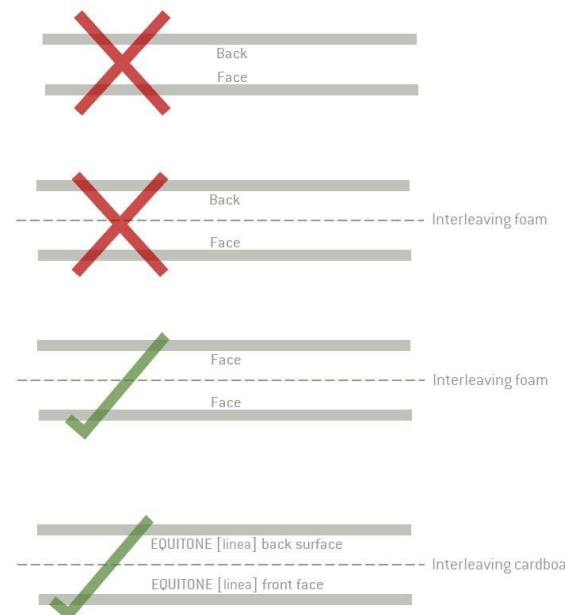
Stacking panels

EQUITONE [natura], [natura] PRO, & [pictura]

These EQUITONE panels are supplied with interleaving foam between the decorated faces. This foam must not be removed.

When restacking these panels:

- Stack the panels front-face-to-front-face or back-surface-to-back-surface. The panels should not be placed face-to-back.
- Reuse the interleaving foam between each layer which is face-to-face to prevent scratches.



EQUITONE [linea]

EQUITONE [linea] panels are stacked front-face-to-back-surface with interleaving cardboard in between. Only the first two top panels on a pallet are positioned front-face-to-front-face to reduce the risk of damage to the top panel face during transport and storage, while the rest of the panels on a pallet must be stacked front-face-to-back-surface.

EQUITONE [tectiva] & [lunara]

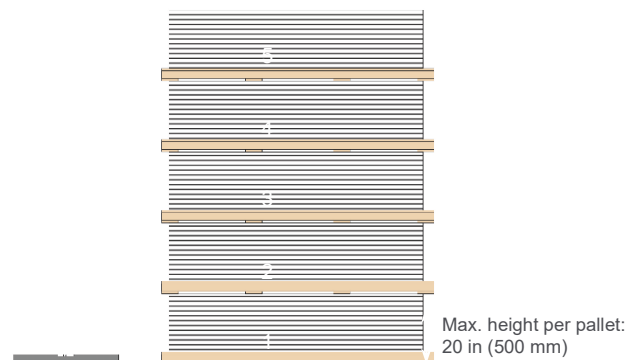
EQUITONE [tectiva] and [lunara] panels are stacked front-face-to-back-surface with no interleaving spacer or foam in between the panels. Only the first two top panels on a pallet are positioned front-face-to-front-face to reduce the risk of damage to the top panel face during transport and storage.

Pallets

Pallets are to be kept in good condition. Damaged or broken pallets increase the risk of damage to the panels.

When sorting from one pallet to another ensure that the timber pallets are oversized or larger than the panels to prevent possible damage to the panel edges.

Individual pallets can be 20 in (500 mm) high, and not more than 5 pallets can be put on top of one another provided the ground is flat and level.



Panel moving

Lifting

Only move stacked panels that are stored on pallets.

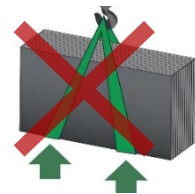
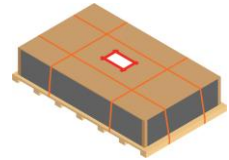
Ensure the panels are secured to the pallet in a way that will not cause damage. Soft protection is needed where straps touch the panels.

Stacks should be transported under a waterproof cover.

Panels should only be moved when stacked on a pallet and secured on the pallet from all 4 sides.

Moving panels that are stacked on pallets should be done with a forklift or a crane.

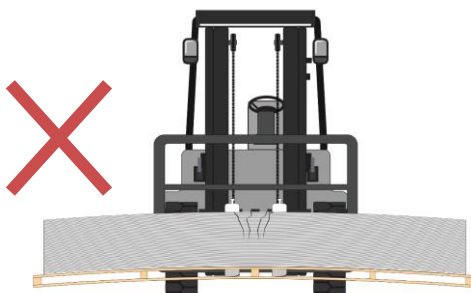
Lifting panels, that are not on a pallet, with straps is not recommended.



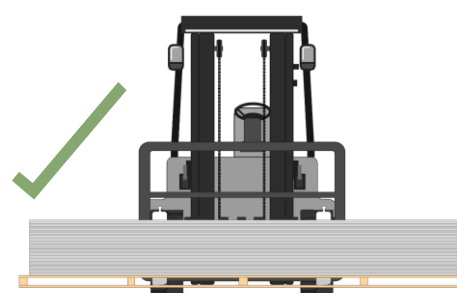
Forklift

When moving the pallets with a forklift, it is recommended that a multi-fork attachment (4 forks) is used.

If using the standard 2-fork attachment, these must be positioned with a wide setting. This will stop the pallets from bending when lifted.



Wrong forks setting (too close)



Wide forks setting

Panel handling

Handling

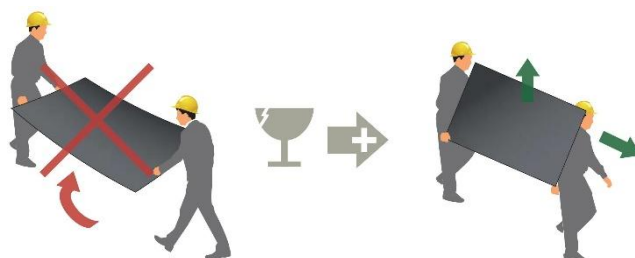
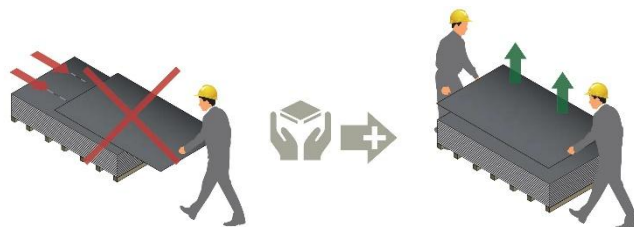
Carefully plan how the panels will be handled. Decide on a suitable route for moving the panel from the storage area to the façade and then up the façade. Be aware of obstacles such as scaffolding, temporary supports, or uneven walking surfaces.

Always lift panels off each other, and never slide them over one another, since scratching may occur on the surface.

To carry the panels, stand them on their back edge on soft bearers and lift with two people, one person at each end, protecting the panel face from scratching or damage.

Always lean the panel towards its back edge to avoid damaging the visible front edge.

Always abide by the Health & Safety guidelines in all aspects of manual handling.



Suction lifters

The use of suction lifters is strongly discouraged because there is a high risk of leaving marks on the panel.

If suction cups are to be used, a test should be carried out to ensure that the suction cups do not leave marks on the panel surface. When suction lifters are used to lift and move panels, it is important to ensure they are strong enough. Only suitable with the smooth surface panels.



Carrying straps and panel lifters

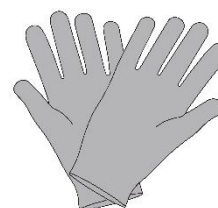
To ease the lifting of large panels, carrying or manual lifting straps can be used. Make sure the strap material will not damage the panel edges. Take care when removing the straps.



Gloves

Clean gloves must be used to prevent fingerprints on the panels. Gloves should be of a type that ensures good grip and are easily cleaned. Make sure the gloves are waterproof if working in damp or wet weather and will not cause any risk of cement dust reaching the skin as this may cause irritation.

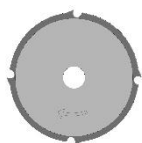
At times when working with white EQUITONE panels wearing cotton work gloves prevents staining. Make sure gloves are always clean.



Panel preparation

Tools & accessories

General tools and accessories required for panel preparation are as follows. The following list is by no means exhaustive.



EQUITONE blade for manual cutting



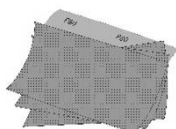
Bosch T141HM jigsaw blade for curved cuts



EQUITONE 11 mm bit for panel drilling



EQUITONE drill & milling tool for drilling EQUITONE [linea]



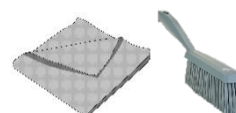
80 grit sandpaper for sanding panel edges (to be affixed to a timber)



LUKO sealer & LUKO applicator kit for edge sealing of EQUITONE [natura] & EQUITONE [natura] PRO



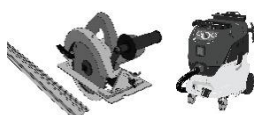
Paper towel for removing any LUKO residue



Soft brush and clean microfiber cloth for dust removal



Measuring tools & pencil for marking



Saw, guide rail, & vacuum for panel cutting



Jigsaw for curved cut-outs



Drill for panel drilling

Health & safety

The released dust during the mechanical machining of EQUITONE panels may contain quartz particles. Inhalation of high concentrations of dust may irritate the airways, and dust may also cause irritation of eyes and/or skin. Inhalation of dust containing quartz, especially fine (respirable size) particulate matter, in high concentrations over prolonged periods of time, can lead to lung disease (silicosis) and an increased risk of lung cancer.

Avoid dust inhalation with the use of cutting/sanding equipment fitted with dust extraction/suppression accessories wherever practical.

Ensure adequate ventilation of all work sites.

Avoid contact with eyes and skin by wearing an approved respirator (a dust mask type FFP2 or better compliant with EN149:2001) together with appropriate personal protective equipment (safety glasses, hard hat, boots, and protective clothing).



Refer to EQUITONE Material Safety Information Sheet (SIS) for more information about health and safety, including common hazards associated with working with EQUITONE, and measures to minimise risk.

Panel preparation

Panel cutting

It is recommended that cutting of the panels is carried out off-site as much as possible. In situations where this is not possible, on-site cutting may be done.

Where factory untrimmed [natura], [natura] PRO, and [pictura] is used, at least 15 mm needs to be trimmed from each of the untrimmed (raw) edges. The final cut edges must then be sealed with Luko edge sealer before panel installation.

Where factory untrimmed [tectiva], [linea], and [lunara] is used, at least 10 mm needs to be trimmed from each of the untrimmed (raw) edges.

Untrimmed and treated factory edges must NOT be used on a façade. Any untrimmed panel used on a façade will render the EQUITONE warranty void. Any claim or complaint relating to the use of untrimmed panels will not be accepted.

Cutting procedure

EQUITONE saw blades are recommended to be used for cutting the panels. Review the EQUITONE Saw Blade Material Information Sheet for document for more information.

When using portable saws, EQUITONE panels must be positioned so that cutting is conducted into the panel face to reduce the risk of chipping the edges. This may imply the panel is placed face down. Therefore, it is important that the workbench has a clean and soft material covering it to prevent scratching and marking of the panels.

Only use a portable saw with an enclosed blade to prevent the escape of dust and a guide rail to ensure that the saw stays steady and gives straight cuts.

The blade should be set to extend approximately 13/64 in (5 mm) below the panel to allow the debris material to escape.



Only one panel should be cut at a time. Do not cut multiple panels together at the same time. The panel should be held firmly in place to avoid vibration.

Do not cut the panel by allowing the panel to overhang the edge of the workbench as this will damage the edge.

When cutting the panel, it is advisable to place the panel on a solid workbench preferably indoors or under cover. This will reduce the risk of staining from damp/wet weather and make dust cleaning easier.

Ensure the level of the workbench is set at a comfortable height to allow safe use of the saw and to prevent overstretching by the operatives. Due to the large number of variables, trial cutting on a waste piece of panel should be carried out to determine the optimum saw setting and movement speed of the saw.

EQUITONE saw blades

The following table as the recommended speed when it comes to blade sizing.

Blade Diameter	Saw Speed (rpm)
6 5/16 in [160 mm]	4,000
7 1/2 in [190 mm]	3,200
8 27/32 in [225 mm]	3,200
11 13/16 in [300 mm]	2,800
6 5/16 in [160 mm]	2,000



Panel preparation

Cutting equipment

Various types of equipment or machinery may be used for cutting EQUITONE panels. These may include portable saws e.g., circular saw, flat-bed horizontal or vertical (wall) saw, and CNC and waterjet machines. The following needs to be noted when considering different types of cutting equipment or machinery.

- Each cutting procedure, equipment, or machinery may produce a different edge finish.
- Where waterjet is used for panel cutting, panels must be fully dry before they can be stacked or packed.
- The panel must be positioned such that cutting is conducted into the panel face to reduce the risk of chipping the edges.



Curved cut-outs

For curved cuts or cut-outs

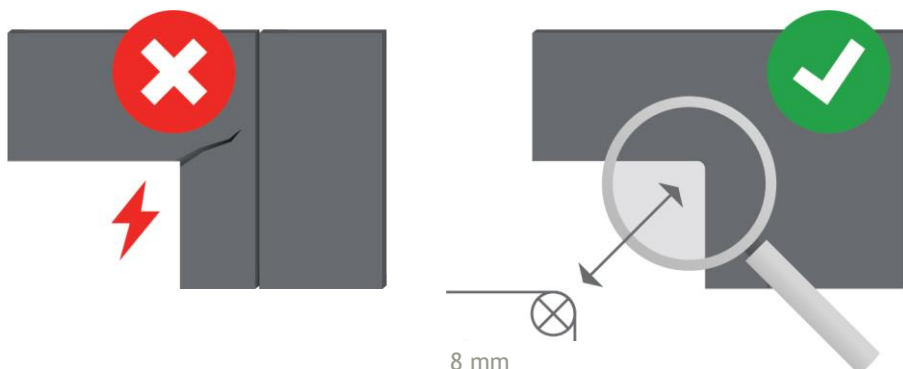
- place the panel face down (ensure there is a soft coverage on the workbench to protect the panel face),
- drill a hole in the panel at the edge of the intended curved cut-out area,
- ensure the jigsaw pendulum function is switched off, and
- insert Bosch T141HM jigsaw blade and proceed to cut.



Due to the length of the blade, space must be provided under the panel to allow the blade to work.

Notching a panel

Notching fiber cement panels should not be at a sharp angle. Sharp-edged cut-outs form so-called "notches", which are often the starting point for crack formation. Cracks that have formed "grow" over time and the result can be material breakage. The risk of occurrence of notch cracks can be reduced if a hole 5/16 in (Ø8 mm) is drilled at the corner when notching, creating a slight rounding. Then start or end the cut into this hole. If using a hand router on-site or an offsite CNC machine, most of these machine drillers will result in this curved corner.



Poorly maintained cutting tools or incorrect saw speed as opposed to blade speed can result in localised heating/ burning of panel edges. Do not use grinder tools as these usually have a high cutting speed. This produces higher than average pressure on panel edges. Most grinding tools also produce excessive, unwanted dust.

Panel preparation

Penetrations

Where the panels need to be drilled on-site for holes for cables, use the EQUITONE fiber cement drill bits. On-site drilling of the panel to be drilled face up on a solid workbench that supports the full panel. At no time should drilling the panel be carried out in the rain. Immediately after drilling clean off all dust with a soft brush and compressed air.

Finishing cut edges

Panel edges must always be sanded after cutting them. This reduces the possibility of damage and improves their appearance. To help prevent this phenomenon from occurring, the edges of all factory trimmed panels come pre-sanded.

Use 80-grit sandpaper secured to a block of wood, approx. 15 3/4 x 3 15/16 in (400 x 100 mm) in size. Using a small timber block may result in uneven sanding.

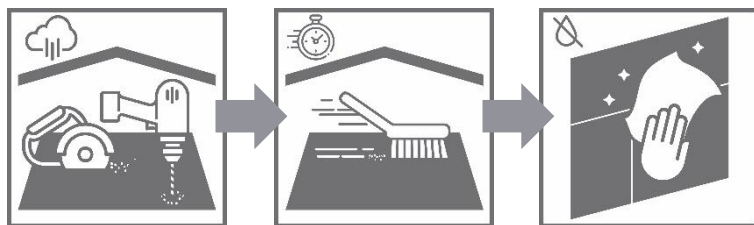
Do not use sanding pads, sponge blocks, or sandpaper without a hard backing, as these may cause curving of the edge finish.

To speed up the sanding process and chamfer the edges at the same time, cut an angled groove from a block of timber and carefully wrap sandpaper into the groove.

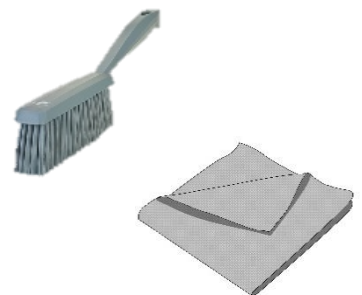
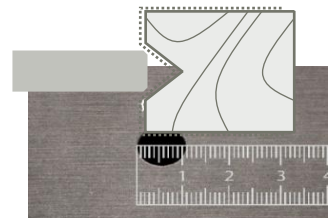
Cleaning after cutting

Immediately after cutting or sanding clean off all dust from the panel surface with a soft brush

Then wipe the entire panel clean using a dry, clean microfiber cloth. Do not use a wet cloth as staining may occur. It is important to change out the cloth frequently to prevent grit buildup from staining the panels. Only use cloth for cement dust removal.



A special cleaning toolset including a brush and microfiber cloth is available from Etex.



Panel preparation

Panel drilling

Panels should be drilled using the EQUITONE 7 mm drill bit.

Ensure the panel is positioned face up, and that the drill is held perpendicular to the panel face.

When drilling a panel, it is advisable to place it on a solid workbench preferably indoors or under cover. This will reduce the risk of staining as a result of damp/wet weather.

Drill only one panel at a time. Do not drill multiple panels at the same time to ensure accurate positioning of panel holes.

The panel should be held firmly in place to avoid vibration. Turn off the hammer-action function on the power drill as this can cause the drill to move and slip.

Do not drill any panels in situ on a façade.

Other machinery

Panel holes may be drilled with other machinery such as CNC machines provided that the hole size is ensured to be 7/16 in (11 mm). Smaller size holes reduce the movement allowance within the connection, and larger holes reduces the pull-through (structural) capacity of the connection.

Waterjet is not recommended for drilling panel holes.

Marking the position of holes

When marking the position of the panel holes, being accurate and using small crosses will reduce cleaning time.

Use a colored pencil that is different from the panel such as white or red to highlight the hole position on grey or dark grey panels. It is possible that a grey pencil mark will be lost in the fiber pattern on the panel's surface.

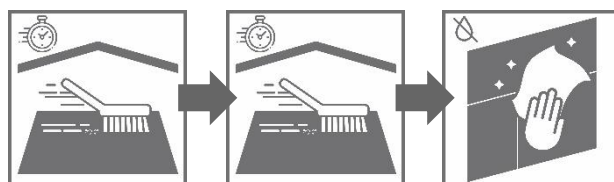
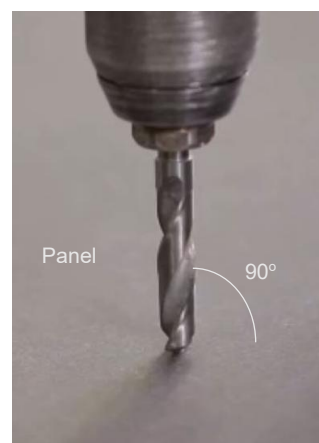
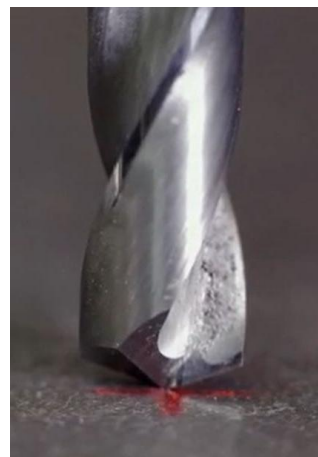
Do not use chalk lines and permanent markers.

Cleaning after drilling

Immediately after drilling, clean off all dust from the panel surface with a soft brush.

Then wipe the entire panel clean using a dry, clean microfiber cloth. Do not use a wet cloth as staining may occur. It is important to change out the cloth frequently to prevent grit buildup from staining the panels. Only use cloth for cement dust removal.

A special cleaning tool set including a brush and micro fiber cloth is available from Etex.



Panel preparation

Drilling EQUITONE [linea]

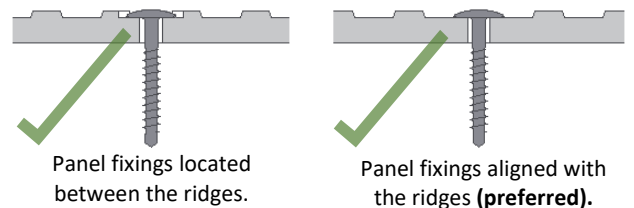
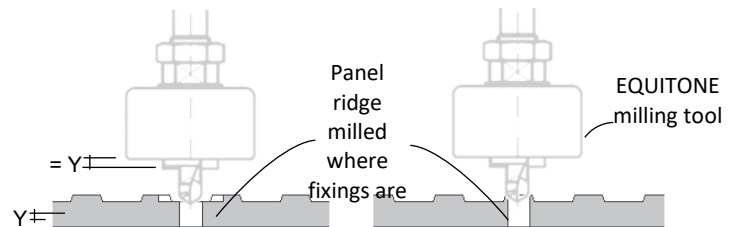
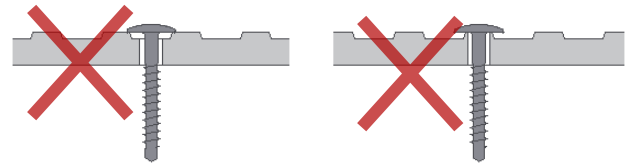
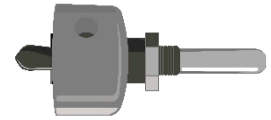
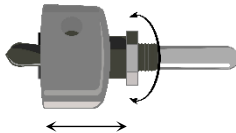
EQUITONE [linea] features a grooved surface. For face fixing of the panel with UNI-Rivet, the ridges need to be milled where the rivet will be located so that the rivet sits flat on the base of the groove.

EQUITONE [linea] drill and mill tool (EQUITONE milling tool) must be used for drilling and milling the panel. The tool is equipped with built-in 7 mm bit and milling blades to both drill the panel hole and mill the ridge in one operation.

The panel hole and fixings can either be in between or aligned with the panel ridges.

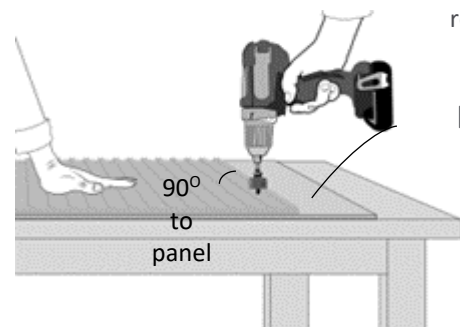
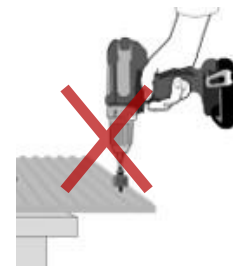
From an aesthetic point of view, when drilling the EQUITONE [linea] it is recommended to align the fixings with the ridges of the panel for the panel fixings to be the least visible.

The depth of the panel ridge (Y) is approximately 1/16 in (2 mm). The black plastic ring part of the tool is adjustable in depth. Adjust so that the milling blades protrude out of the ring by as much as the depth of the ridges to not over- or under-mill the panel.



Application of EQUITONE milling tool

- Place a sacrificial fiber cement sheet on a solid, stable workbench.
- Lay EQUITONE [linea] panel flat on the sacrificial fiber cement sheet (face up).
- Mark the location of the holes.
- Place the milling tool in the hole position.
- Ensure holding the drill perpendicular to the panel face during the operation.
- Hold the panel firmly in place to prevent panel movement during the process.
- Start drilling while applying and maintaining consistent gentle pressure (it is recommended to start drilling with a low-speed setting of the drill to engage the bit with the panel before increasing the speed to approximately 650-850 RPM for milling the ridges).

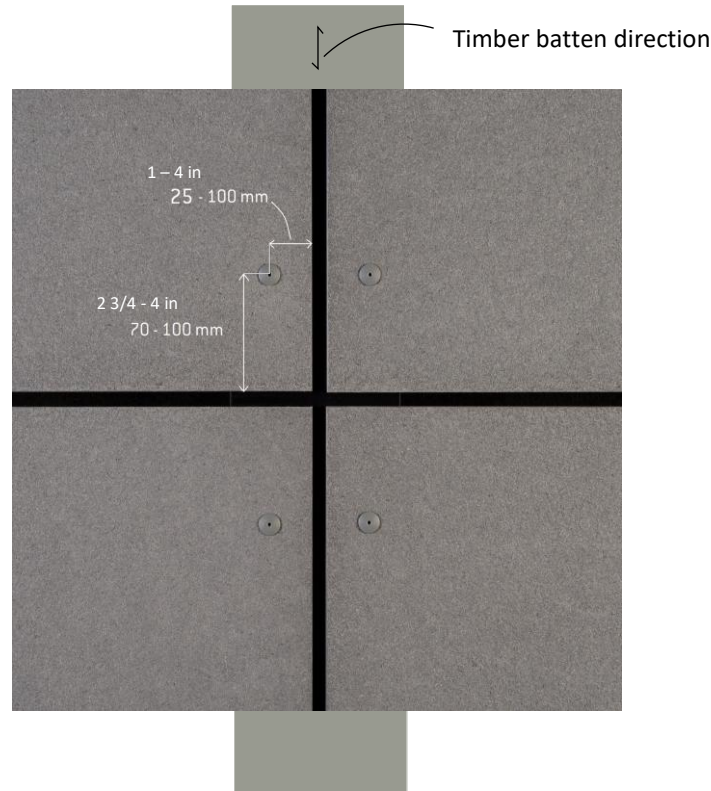


Sacrificial fiber cement sheet recommended under EQUITONE [linea] during the panel

Note that depending on the consistency of the application, some minor chipping of the ridges may be expected.

Panel preparation

Panel holes edge distance



For information about spacing of panel holes or fixings, refer to [EQUITONE Span Tables](#). Do not drill panels on a façade. Drilling must be conducted on a solid workbench prior to positioning the panel on façade.

Distance from the panel edge parallel to the support frame profile:

(On a vertical support frame, this means the distance from the vertical panel's edges. Where a horizontal support frame is allowed, this means the distance from the panel's top/bottom or horizontal edges)

- 63/64 to 3 15/16 in (25 to 100mm)

Distance from the panel edge perpendicular to the support frame profile:

(On a vertical support frame, this means the distance from the panel's top/bottom or horizontal edges. Where a horizontal support frame is allowed, this means the distance from the panel's vertical edges)

- 2 3/4 to 3 15/16 in (70 to 100 mm)

Notes:

- All measurements are from the center of the panel hole.
- To allow for some degree of tolerance for drilling it is recommended to use slightly bigger edge distances, 1 1/2 and 3 1/8 in (40 and 80 mm).
- Corner fixings should not have equidistant edge distances as this could lead to cracking.
- The recommended panel fixings edge distances provided in this section apply to both wall and soffit/ceiling applications.

Panel preparation

EQUITONE [natura] and [natura] PRO edge treatment

With semi-transparent coatings like those used on EQUITONE [natura] and [natura] PRO panels, moisture ingress at the panel edges and predrilled holes can become apparent. In wet weather, edges can assume a darker shade (picture framing).

This coloration will fade and disappear over time. It is unlikely to reoccur, but the length of time depends on seasonal weather trends.

To help prevent this phenomenon from occurring, the edges of all factory trimmed EQUITONE [natura] and EQUITONE [natura] PRO panels are impregnated with LUKO edge sealant at the factory. The edges of EQUITONE [natura] and EQUITONE [natura] PRO panels cut on-site must then also be impregnated with LUKO.

Do not apply LUKO in wet conditions or after the panel has been fixed.

Edge Treatment Procedure - [natura] and [natura] PRO Cut, sand, clean, and LUKO.



After sanding the edges of the panel, remove all dust from the edges.



Apply the LUKO between +5°C and 25°C.
Treat one panel at a time.



Simply pour only enough LUKO into the clean tray that can be used within 30 minutes. Do not pour any leftover LUKO back into the container.



Use the sponge applicator by dipping into the liquid and removing any excess. Do not move the applicator over the surface of the panel as any drips will be seen and cannot be removed once dried.



Starting at one side of the panel, angle the applicator away from the face of the panel. Simply run the applicator along the edge. Ensure full coverage of the edge. Repeat the process if necessary.



Immediately wipe away any excess that appears on the panel surface. Failure to do so will result in a stain that cannot be removed. Use a different color cloth or recyclable paper towels - Do not use the microfiber cloth that was used to remove the dust. Do not reuse a cloth as it may cause permanent streak marks and staining. Allow the applied LUKO to dry before the manual handling of the panel.



Ensure the cut edges are sanded and free of any dust before the application of LUKO. LUKO must be applied with the appropriate recommended applicator. The panel must be positioned flat and face up for LUKO edge treatment. Any LUKO excess on the panel face must be carefully wiped away and thoroughly wiped away. Failure to do so will result in a stain that cannot be removed. Allow for the applied LUKO to dry before manually handling the panel. For Health and Safety, refer to LUKO Material Safety Data Sheet prior to using LUKO. Do not re-use a cloth to wipe away any LUKO excess as otherwise it may cause permanent streak marks on the panel face. Use a clean microfiber cloth or a soft paper towel.



Panel installation

Tools and accessories

General tools and accessories required for panel installation are as follows. The following list is by no means exhaustive.



UNI-Wood-Screw



UNI-Wood-Screw collar used with
EQUITONE [natura] PRO &



EPDM strip



T20 Torx TTAP driver bit



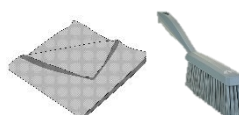
Drill



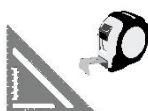
Leveling tools



Shims & packers as
required.



Soft brush and clean
microfiber cloth for
dust removal



Measuring



Pencils for
marking



Knife

Panel installation

Panel horizontal joints

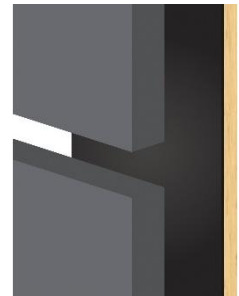
Depending on the project design requirements and weather barrier type, the horizontal joints may be open or closed (baffled).

Open joints

By leaving the horizontal joints open, the likelihood of dirt spoiling the façade reduces as the joint remains clean. The open joints also function as additional ventilation openings. From a certain percentage of open joints, it also has the effect of reducing the wind load on the façade panel.

Consider the color choice of the support frame, any external insulation, and/or weather barrier as these may be visible through the open joints. These components may need to be concealed using appropriate black profiles, paint, or tape.

The exposed façade elements behind the panel, e.g., insulation or weather barrier should be of adequate UV resistance.



Optional: Baffled joints

When a horizontal joint is required to be closed, an aluminum joint profile (baffle) of a maximum 23 gauge (0.8 mm) thickness can be inserted behind panels. The baffle should have adequate corrosion resistance appropriate to the project location.

By using a baffle, most of the water is prevented from entering the cavity. In some buildings, it is advisable to have closed joints, such as the low areas of public or educational buildings. The joint profile will prevent debris from being deposited behind the panels. In the case of kindergartens, baffles will prevent small fingers from getting stuck in the joints.



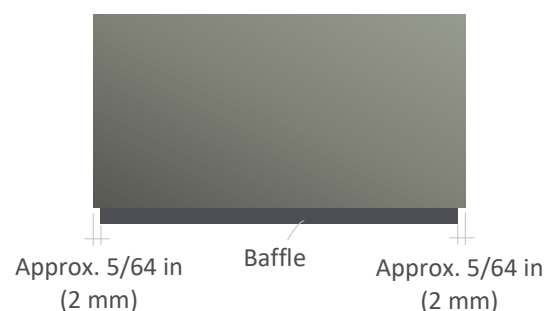
When a building is of lightweight construction, some countries have a regulation that insists that the joints should be baffled to reduce moisture ingress.

Keep in mind that closing off the cladding joints will require additional ventilation to be accounted for in the design of the rainscreen assembly and detailing. See pages 8 and 9 for more information.

Note: Caulking or sealing the joints with sealant is not recommended as the applied sealant may deteriorate in time and cause staining and maintenance issues.

Baffle installation

Cut the baffle approximately $\frac{5}{32}$ in (4 mm) shorter than the panel width, leaving the profile $\frac{5}{64}$ in (2 mm) shorter at each side so that it does not cross and become visible at the vertical panel joints.

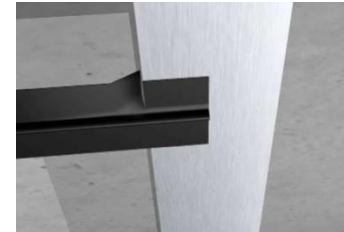


Panel installation

Slide the baffle under the panel. The baffle is then held in place between the foam tape and the panel.

To prevent sideways movement of the baffle, and exposing that movement at vertical joints, cut and bend the top or bottom edges of the profile at both sides of one of the vertical support frame profiles. Alternatively, the baffle may be fixed to one of the support frame profiles with a flat head screw sitting flush with the profile face.

If the baffle is to be mechanically fixed e.g., over a control/movement joint, it shall be fixed to either and not both top/bottom profiles. Allowance for thermal movement of the baffle is also important if mechanically fixed. All connections must be executed with gliding points.

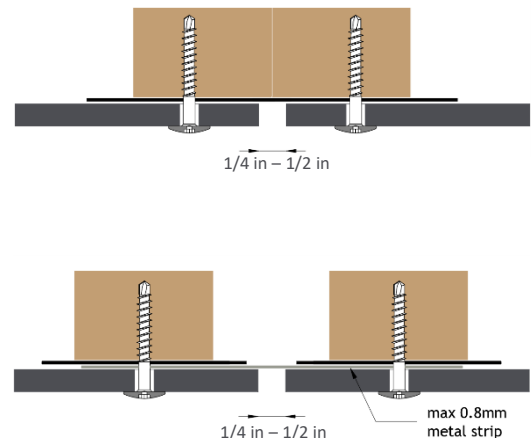


Panel vertical joints

Vertical joints are backed with continuous timber battens covered with a flat or ribbed EPDM joint strip.

While EPDM generally has a good UV resistance, the part of it visible from the joints and exposed to UV may be subject to some degree of deterioration in time, which could also be aesthetically unappealing. A colored metal strip with a maximum thickness of 23 gauge (0.8 mm) may be alternatively used to form an expressed joint.

Refer to EQUITONE Construction Details documents for further details and vertical joint options.



Typical joint width

Many years of practice have shown that the optimum width of the joints between large panels is 10 mm. This also offers the installer a reasonable level of tolerance when setting out the frame and fitting the panel.

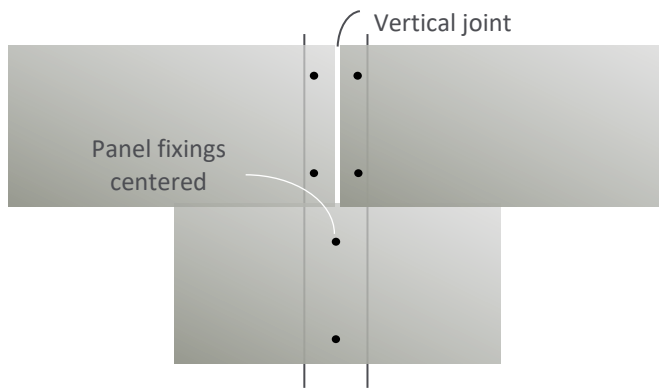
- The minimum recommended joint width: 1/4 in (8 mm)
- The maximum recommended joint width: 1/2 in (12 mm)

Where smaller or larger joint width is required, consult with your Etex Exteriors technical department.

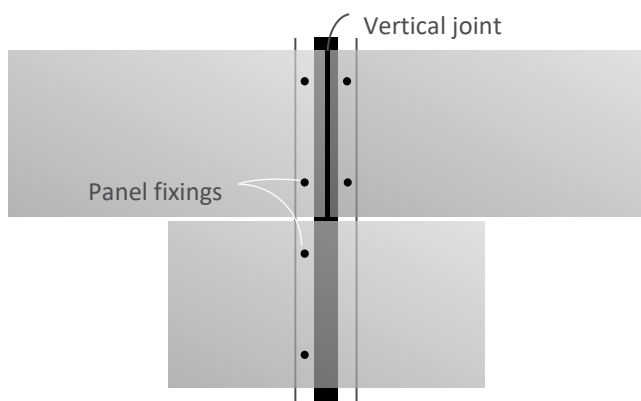
Panel installation

Staggered vertical joint

For staggered joints on timber battens the intermediate panel fixings can be centered.



Alternatively, the intermediate panel fixings can be aligned with one of the fixings rows to the left or right of the offset panel joint.



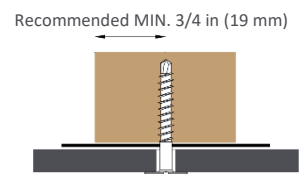
Timber battens

The timber battens/furring strips supporting EQUITONE panels should be seasoned and is recommended to be a minimum of SPF with a specific gravity of 0.42, although other options are available. Local specific requirements for the grade, strength, and preservation must be adhered to.

The vertical battens to which the panels are fixed are to be planned on one face and one edge to ensure the correct leveling.

The alignment of the battens shall be true in both planes. Any variation shall not exceed 0.04 in per foot (1 mm per 30 centimeter).

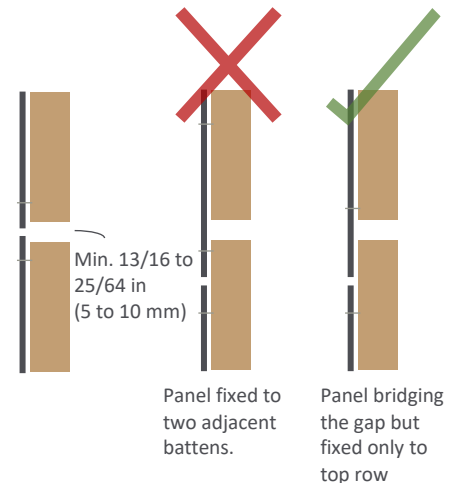
The batten must be adequately sized so that the UNI-Wood-Screw is a minimum of 3x the diameter or 11/16 in (16.5 mm).



Panel installation

A minimum gap of 13/64 to 25/64 in (5 to 10 mm) shall be considered between two vertical battens.

EQUITONE panels must not bridge this gap or any control/movement joints while fixed to both adjacent battens.



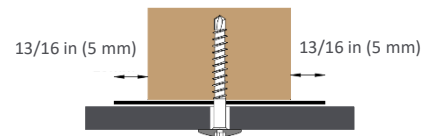
Timber battens/furring strips protection

All battens should be covered, prior to panel installation, with an EPDM or suitable aluminum/metal strip or the like for further moisture protection.

EPDM must be wide enough to cover the batten and overhang each side of the batten by at least 13/16 in (5 mm).

Staple the strip to the battens. Ensure the staples are located towards the side edge of the strip and are not visible in the open joint.

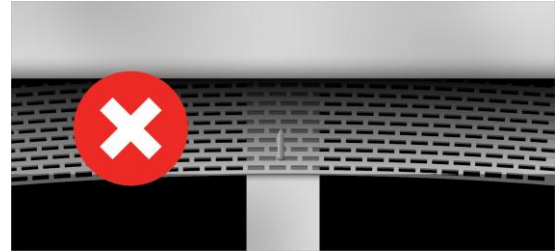
The strip needs to be applied continuously with no laps. If a lap occurs, then to prevent the panel from distorting the surface of the batten needs to be rebated to allow the underlying strip to be recessed.



Panel installation

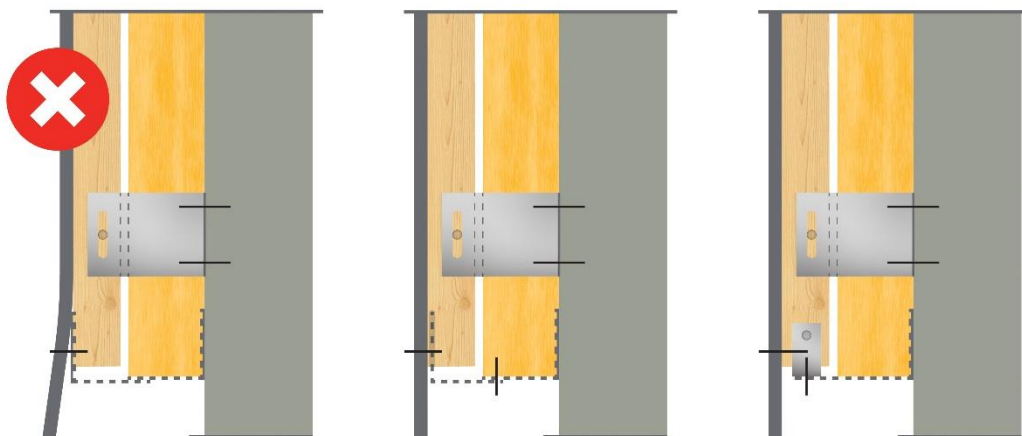
Stress caused by thermal expansion

Aluminum is a material with a high thermal expansion coefficient. If elements such as support frame profiles and aluminum ventilation profiles are arranged at 90° angles to the subframe, it is imperative that the design ensures compensation of thermal expansion is possible, otherwise there is a risk that the entire support frame will warp, and cladding panels will be damaged. All connections must be executed with gliding points.



Stress must be avoided

Stresses caused by components that are located between the support frame and the cladding, e.g., perforated closures, joint profiles, and flashings, are to be avoided by constructive measures by fixing the profile to the side of the support frame as shown below. Where the profiles are fixed to the face of the support frame, the thickness of the profiles, including their fixings, must not exceed 23 gauge (0.8 mm).



Some suppliers offer purpose-designed accessories to fix the perforated closures stress-free to the aluminum framing.

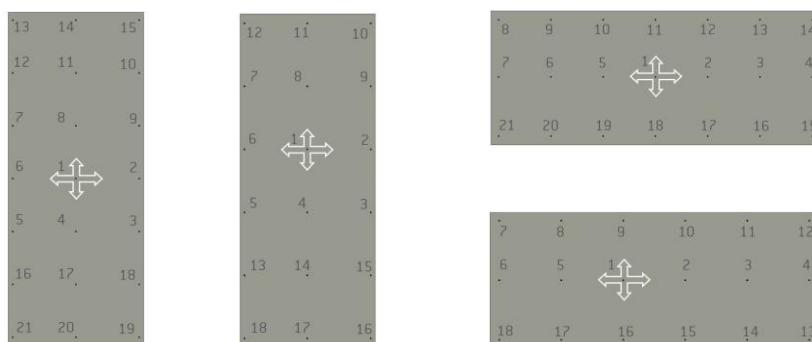
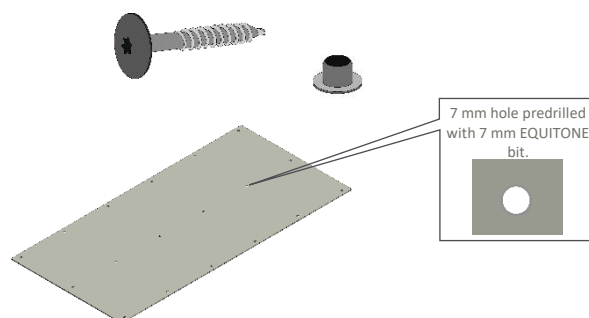
Panel installation

Panel fixing principle

EQUITONE is fixed to timber battens with UNI-Wood Screw.

Panels must be predrilled with a 7 mm EQUITONE drill bit before being placed in position.

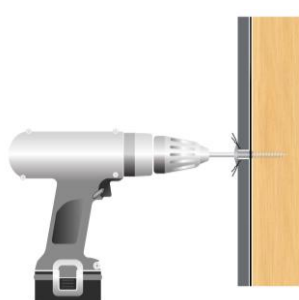
For panel fixing, always start with the central holes and work outwards towards the edges to ensure the panel is installed flat and stress-free. The following are examples of the recommended fixing sequence.



The screw must be applied perpendicular to the panel face and sit flat on the surface of the panel. Do not overtighten the screw. With EQUITONE [natura] PRO and EQUITONE [pictura], a UNI-Wood-Screw collar must be used and inserted in the panel holes before applying the UNI-Wood-Screw.



Ensure the screw is applied perpendicular to



Do not overtighten the screw.



UNI-Wood-Screw collar should be used with EQUITONE [natura] PRO and

Temporary panel fixing

Temporary screw fixing of the panel, using standard screws for wood, is not allowed during any stage of the panel installation process. Panels may be temporarily secured using clamps or rested on wood battens secured to the framing. Care should be taken to not mangle the panel surface by not overtightening or periodically cleaning the grips.



Panel installation

Installation sequence general notes

A sequence or method of placing the EQUITONE panels on the façade must be put in place to ensure the risk of damage to the panels is minimized.

EQUITONE panels are a finished façade product and are generally the last major cladding material to be fitted. Thus, it is important to inspect the material, at various stages along the construction process, and clean and/or replace as necessary. This includes stages such as, but not limited to, pre-panel installation, post panel installation, and after the completion of finished façade area.

Furthermore, care and attention are required if other trades (e.g., painting or rendering) need to follow on after the panel is fitted. The panels must then be protected. Stains from colored renders cannot be removed, and replacement of the panels is the only remedy.

If the panels need to be protected from other trades, it is recommended to use waterproof materials, such as rigid plastic corflute sheets or opaque tarps. These materials can either be mechanically fixed to the support frame through the open joints or clipped to the outside edges of the panel. If using clips, care should be taken not to overtighten them as this can cause damage to the finish surface. A small gap should exist between the protective material and the panel surface to prevent sticking as well as water staining.

Due to the nature of the panel surfaces, no adhesive tape should be applied to EQUITONE materials as it may leave traces of adhesive and/or lead to damage of the coating.



Top-down installation method

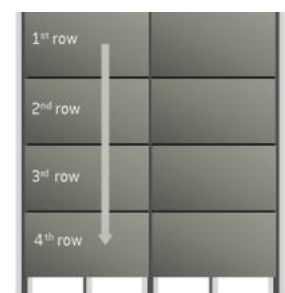
Experience has shown that the best sequence in placing the EQUITONE panels using EQUITONE UNI-Wood Screw is to start at the top of the façade and work downwards.

It is important to -

- prevent damage to the panel,
- provide an easy way to adjust the panel,
- provide a safe and secure way to temporarily hold the panel before fixing, and
- prevent the panel from slipping down the façade.

This method brings several benefits to the installer:

- using a support rail (angle) ensures accurate joints,
- support rail acts as an additional workman,
- reduces the risk of panel staining as the installer works away from installed panels,
- reduces the risk of damaging the panel by working on a scaffold, and
- reduces the time required to clean the façade.



Panel installation

Installation sequence (top-down method)

1

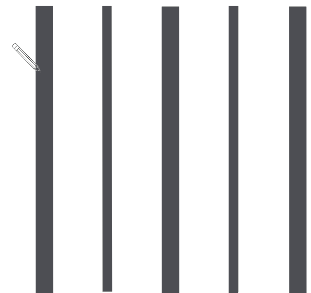
Ensure all the battens have been installed and set out correctly and are straight and plumb.

Apply the EPDM joint strip onto all battens.



2

Starting at the top of the façade, mark the bottom edge of the top panel on the battens. Align this position mark across the façade.



3

Temporarily apply a metal carrier (support angle) across the battens. This support angle will act as another workman and will carry the weight of the panel and allow easy adjustment prior to fixing.

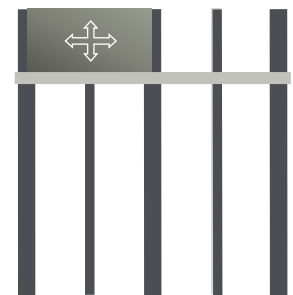
In addition, the support angle will provide a wide ledge to stop the panel from sliding down the façade before fixing.



4

Lift the first panel onto this support angle and position it into place. Securely hold the panel in position. Using a packer on the support angle will allow ease of minor adjustment. For larger adjustments, the support angle needs re-setting.

Install the panel. Always start with the holes located at the center of the panel and then radiate outwards towards the edges for panel fixing.



Once installed, immediately clean the panels following our cleaning guidelines.

5

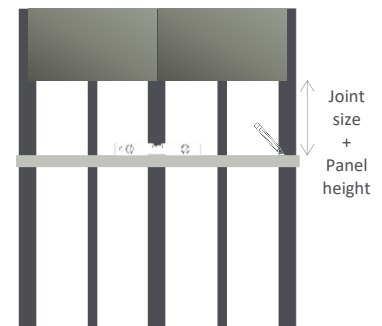
Lift and slide the next EQUITONE panel into place. Use spacers 3/8 in (10mm) of a type not to cause damage when being removed, and to give a constant vertical joint gap. Wrap a 1 mm EPDM strip around an 8 mm spacer and remove the spacer prior to the EPDM to reduce the risk of damaging the panel edges (see also next page). Fix this panel as the first panel. Continue across the façade, moving the support angle as the work progresses.



6

Now that the top row is in place remove the support angle.

Fix in place the parapet capping or fix a temporary cover over the top of the façade to prevent water running down the back of the panels. This capping, whether permanent or temporary, must respect the ventilation gap.



Measure down from the bottom edge of the upper fixed panel and mark the position of the bottom edge of the next row of panels. This measurement is equivalent to the height of the panel plus the horizontal joint (panel + 3/8 in (10 mm)). Then fix the temporary support angle in this position.

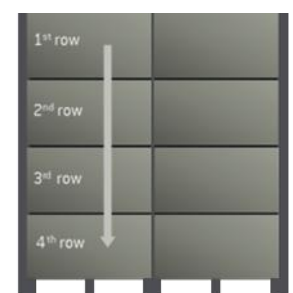
7

For the baffled horizontal joint, cut the baffle to approx. 5/32 in (4 mm) shorter than the panel width and slide it into place and under the installed panel before installing the next row panel.



8

Then lift the first panel of this row onto the support angle and position it into place lining up the panel's vertical edge with the edge above. Repeat the fixing sequence for the panel. Continue working across the façade. The whole procedure is then repeated down the façade of the building.

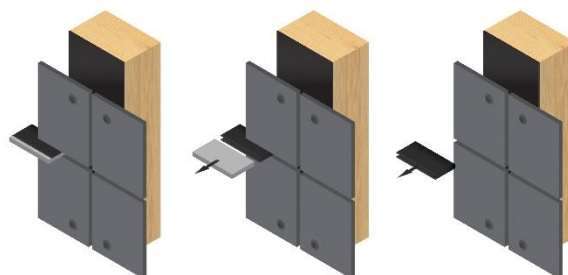


Panel installation

Installing the panels from ground level upwards

For limited applications, sometimes it may be necessary to commence cladding from the base of the façade. This can be done successfully but requires the installer to take extra care and attention to prevent damaging the edge of the panel as well as panel staining. The most likely damage will be the top edge of the lower panels. As the weight of the upper panel will be resting on the spacers which in turn will be resting on the lower panel. Therefore, the removal of the joint spacers must be done with utmost care.

One suggestion is to use an 5/16 in (8 mm) spacer and wrap a 0.039 in (1 mm) rubber strip around the top face, back edge, and bottom face of the spacer. Remove the spacer first and then the rubber strip. The rubber strip protects the edges of the panels as the spacer is being removed.



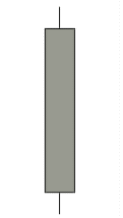
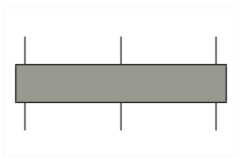
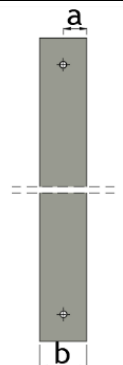
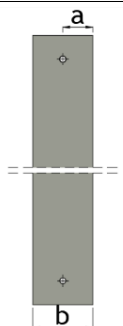

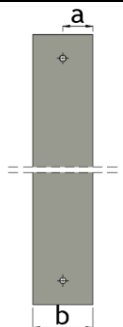

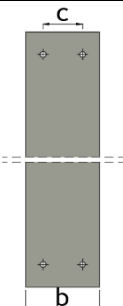
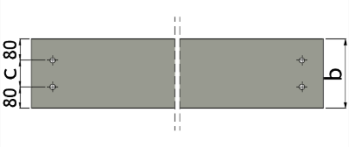
Alignment of the vertical joints

Whether installation is done from ground level upwards or as a top-down method the above procedure of using wrapped spacers can be applied to maintain the correct size of the vertical joint as well.

Panel installation

Fixing of narrow EQUITONE panels

The number of fasteners, which is determined through project specific engineering, per row depends on the length of the strip and the height of the building.

	Framing profile parallel to panel direction		Framing profile perpendicular to panel direction	
				
Narrowest panel, up to 49 in (1250 mm) in length, with one row of fasteners.	$60 \text{ mm} \leq b \leq 100 \text{ mm}$ $2 \frac{3}{8} \text{ in} \leq b \leq 4 \text{ in}$ Central fixing $a = 1/2b$			
Panel width limitations, up to 122 in (3100 mm) in length, with one row of fasteners	$100 \text{ mm} \leq b \leq 240 \text{ mm}^1$ $4 \text{ in} \leq b \leq 9 \frac{1}{2} \text{ in}^1$ Central fixing $a = 1/2 \cdot b$		$140 \text{ mm} \leq b \leq 240 \text{ mm}$ $5 \frac{1}{2} \text{ in} \leq b \leq 9 \frac{7}{16} \text{ in}$ Central fixing $a = 1/2b$	
Panels with limitations, up to 122 in (3100 mm) in length, with one row of eccentric fasteners	$100 \text{ mm} \leq b \leq 240 \text{ mm}$ $4 \text{ in} \leq b \leq 9 \frac{7}{16} \text{ in}$ $30 \text{ mm} \leq a \leq 120 \text{ mm}$ $1 \frac{3}{16} \text{ in} \leq a \leq 4 \frac{23}{32} \text{ in}$		$140 \text{ mm} \leq b \leq 240 \text{ mm}$ $5 \frac{1}{2} \text{ in} \leq b \leq 9 \frac{7}{16} \text{ in}$ $70 \text{ mm} \leq a \leq 120 \text{ mm}$ $2 \frac{3}{4} \text{ in} \leq a \leq 4 \frac{23}{32} \text{ in}$	
Narrowest panel, up to 122 in (3100 mm) in length, with two rows of fasteners	$b \geq 5.5 \text{ in} (140 \text{ mm})$ Fixing centers $c \geq 3 \frac{5}{32} \text{ in} (80 \text{ mm})$		$b \geq 9 \frac{7}{16} \text{ in} (240 \text{ mm})$ Fixings centers $c \geq 3 \frac{5}{32} \text{ in} (80 \text{ mm})$	

a=edge distance, b=width of panel, c=fixing centers

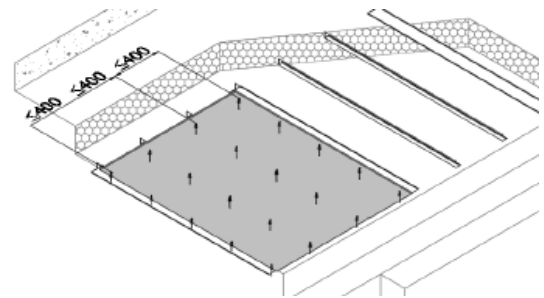
¹Larger sizes, up to 300 mm (11 13/16"), may be possible based upon engineering but may be at risk for panel bowing.

Panel installation

Soffits and ceilings

The same fixing principles apply to ceiling and soffit applications.

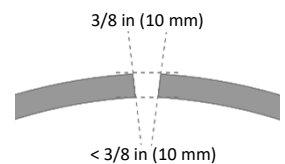
A fastening distance of max. 16 in x 16 in (400 mm x 400 mm) must be observed.



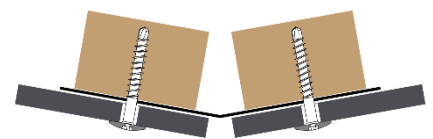
Curved façade

EQUITONE panels are flat. However, it is possible to ease them around a curved façade. Note that the orientation of the panel is also critical. A horizontal panel bends easier than one placed vertically. The minimum radius that a 5/16 in (8 mm) EQUITONE panel can be fixed to a curved façade is 40 ft (12 m). For 12 mm boards this value is 50 ft (15 m).

When the panels are applied on a curved façade, the joint will not be square but is angled to accommodate the curve. Visually it is better to keep the outer edge of the joint gap at 3/8 in (10 mm) and allow the inner edge to be less than 3/8 in (10 mm). If not, depending on the curve, the joint could be more than 15/32 in (12 mm) wide. To allow this to happen it is important that the setting out of the support frame reflects this. The opposite applies to an inner curving façade.



For smaller radii, the panel may be segmented into a series of narrow strips. Generally, two battens are used at vertical joints to prevent overstressing of the panel. For more details, refer to the *Construction details - EQUITONE with face fixings on wooden frame* document.



Flashing's thickness

Flashings, trims, and the like must be designed in accordance with the relevant standards, regulations, project requirements, and wind loading.

The thickness of any flashings, perforated profiles, and the like placed in between EQUITONE panel and support frame profile must not exceed 23 gauge (0.8 mm).

Movement & control joints

Cladding and its support framing must not bridge over a building movement or control joint while fixed to both sides of the joint. Adequate separation in both cladding and its support framing is required at any movement or control joint and the like. Specific details can be found in the 'construction details booklet'.

Typical construction details

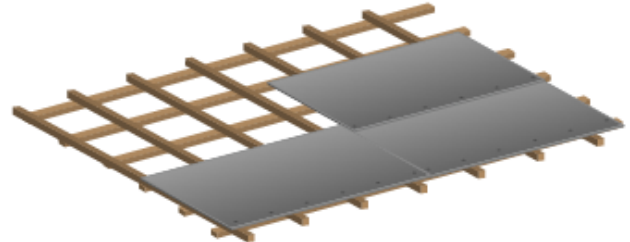
Refer to the *Construction details - EQUITONE with face fixings on wooden support frame* document for a comprehensive set of typical details which must be read in conjunction with this Design and Installation Guide.

Special applications

For applications not listed herein, please reach out to your local EQUITONE distributor or technical department for further guidance.

Roof Systems

EQUITONE [natura] PRO and [pictura] panels can be considered for applications on a roof. Please bear in mind the panel is only decorative and therefore it is strongly recommended that a water-tight and UV-stable under-construction be installed beneath the EQUITONE material to prevent moisture ingress.



Some important notes to remember when using EQUITONE panels on a wooden subframe roof structure:

- Roof pitch should be $\geq 15^\circ$
- Panels must be overlapped horizontally between 4 - 8 in (102-204 mm) depending on roof pitch.
- The vertical joint between the panels must be protected with a hidden flashing.
- Minimum air and drainage cavity of 3/4 in (19 mm).
- System detailing must allow air and water to move freely under the panels. Follow the wall closed-joint ventilation charts on pages 8 and 9 for additional guidance.
- The panels must be fastened to their own support frame which in turn needs to be secured to the roof structure.
- The designer needs to consider the detailing of penetrations, skylights, extractor pipes, chimneys, etc. and how both the waterproof under-roof and the panel are flashed.

Where periodic maintenance of other roof elements is required, care should be taken to ensure the design of the framing behind EQUITONE can account for any applicable live loads. It is NOT permitted to walk on the EQUITONE panels or place any downward force onto the material without following the appropriate local safety regulations and procedures for working at heights. Our materials are not slip resistant but also has the potential to break which can lead to injury. Lastly, it should be noted that walking onto the material may cause damage to the surface such as staining or scratches.

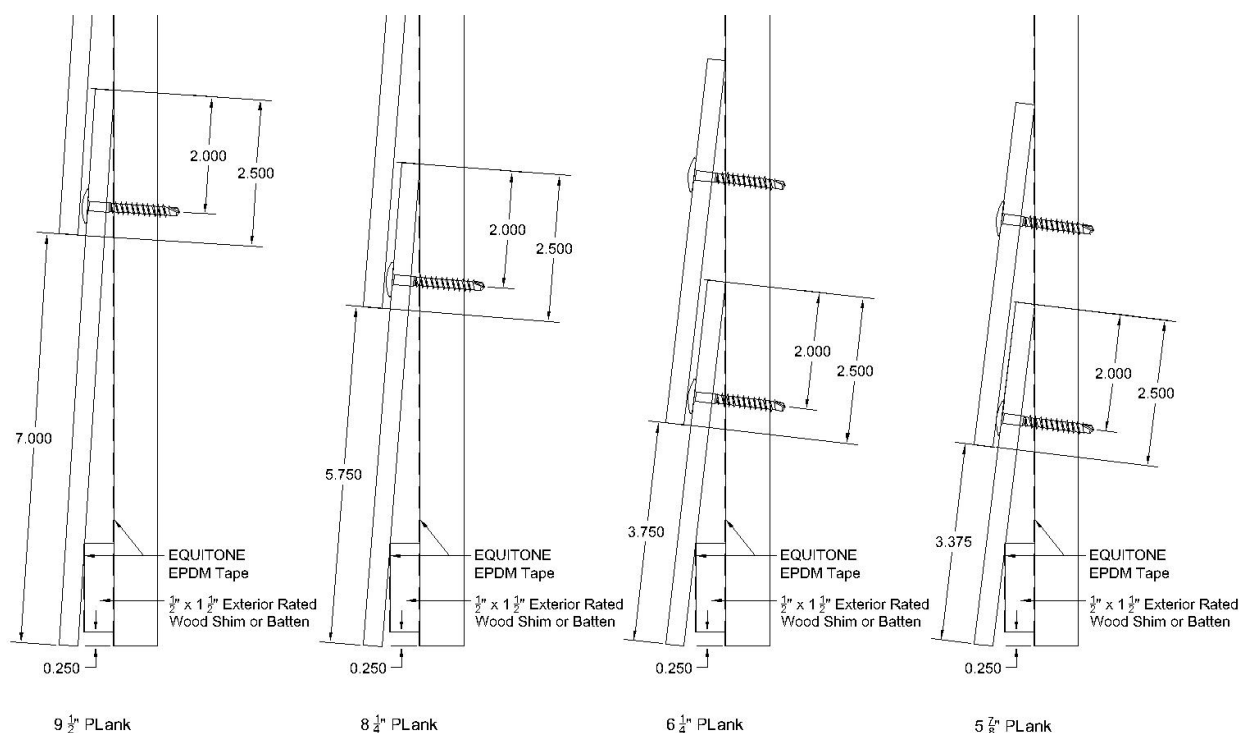
Please reach out to your local EQUITONE distributor or technical department for further guidance.

Special applications

Ship Lap Patterns

An alternative to the flat façade is the shiplap appearance which emphasizes the horizontal lines created by the panels. All EQUITONE materials can be used in shiplap designs baring the panels are not angled less than 83 degrees.

Below are 4 optional patterns with corresponding fixing positions and panel overlaps. It is important that the fasteners are installed perpendicular to the panels, not to the framing. This will prevent applying additional stress to the panels which may cause cracking. For additional guidance on the detailing of bug screens, flashings, etc. please refer to EQUITONE Exposed Fastener Using vertical Wood Batten Detail Set.



For panels wider than 9 1/2 in (241 mm) at least two rows of fasteners/rivets are required. Similar to standard façade applications, the maximum recommended distance between fasteners is 24 in (600 mm). All spacings should be verified by a professional engineer to meet the project-specific loading conditions.

The following minimum fastener edge spacings should be followed for ship-lap applications, which varies from the above recommendations for a standard flat façade.

Vertical subframe members

Distance from the panel edge perpendicular to framing: 2 - 4 in (50 - 100 mm)

Distance from the panel edge parallel to framing 1 3/16 - 4 in (30 - 100 mm)

Horizontal subframe members

Distance from the panel edge perpendicular to framing 2 3/4 - 2 in (70 - 100 mm)

Distance from the panel edge parallel to framing 2 - 4 in (50 - 100 mm)

Special applications

All other guidelines mentioned previously in this document should be followed including but not limited to, leaving appropriate gaps between the ends of the panels, fastener installation sequence, etc.

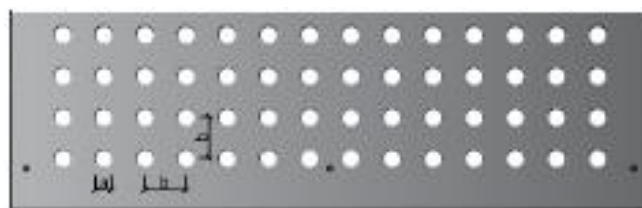
Alternative detailing, then what is discussed within this guide, may be possible. In these cases, please reach out to your local EQUITONE distributor or technical department for further guidance and information.

Panel Perforation

It is possible to fabricate aesthetics, through the panel, features into the panel. Some simple rules apply to ensure the panel remains fit for purpose.

Regardless of perforation geometry, it is recommended to leave a minimum of 4 in (100 mm) around all edges of the panel. In general, perforation designs should not remove more than 20% of the panel's area.

More specifically, for perforated hole diameters between $\frac{3}{8}$ and $1 \frac{3}{16}$ in (10 and 30 mm) the minimum center-to-center dimension between these holes should be $2 \times (\text{perf hole dia.}) + 1 \frac{3}{16}$ in (30mm). A minimum radius of $3 \frac{5}{32}$ in (80 mm) should also remain intact around any fastener location.



In addition to the use of round holes, it is also possible to have slotted panels. The maximum size of the slot should be $1 \frac{3}{16}$ in (30 mm). A minimum dimension of $3 \frac{5}{32}$ in (80 mm) should remain between slot edges while 4 in (100 mm) is recommended between slot ends.



Extra care and attention will be needed to protect the panel during storage, transport, and handling as the panel may be more prone to breaking.

Alternative detailing, then what is discussed within this guide, may be possible. Please see Perforating EQUITONE Panels Technical Note document for additional information or reach out to your local EQUITONE distributor or technical department for further guidance and information.

Special applications

Panel Engraving

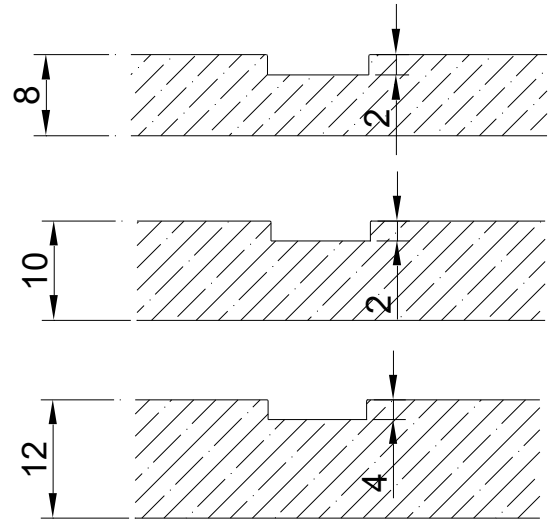
There are no restrictions on the size or shape of aesthetic features milled partially into the panel, however it is recommended to distribute the patterns throughout the panels instead of in localized concentrations.

In addition, for both 5/16 in (8 mm) and 3/8 in (10mm) thick EQUITONE materials the engraving depth should be no more than 5/64 in (2 mm). 1/2 in (12 mm) thick material can be engraved as much as 5/32 in (4 mm).

A minimum radius of 3/4 in (20 mm) should remain intact around any fastener location.

Keep in mind that the panel characteristic strength may be reduced as a result of the engraving design. A professional engineer should verify the panel's capacity, per the project-specific conditions, as subframe support design may be affected as a result. Additionally, extra care should be taken when handling, transporting, or storing such materials.

Alternative detailing, then what is discussed within this guide, may be possible. Please see Engraving EQUITONE Panels Technical Note document for additional information or reach out to your local EQUITONE distributor or technical department for further guidance and information.



Design considerations

Open joints

A façade design with open horizontal joints significantly reduces the visible susceptibility to soiling of the façade surfaces.

The open joints serve as additional ventilation inlets, which contribute to effective ventilation of the cavity.

The results of extensive investigations by recognized testing institutes and practice show that the function of the façade (protection against driving rain) is completely given with an open joint 5/16 - 3/8 in (8 - 10 mm). This also corresponds to the information on driving rain protection for exterior walls with rear-ventilated exterior wall cladding in accordance with DIN 4108-3.

The main part of the rainwater is discharged on the surface of the façade. Small amounts of water penetrate through open joints and condensation water are drained off in the rear ventilation space. Due to the permanent air circulation, these areas dry quickly.

Coordination with other trades

Proper coordination between the façade contractor installing EQUITONE panels and other trades with works around EQUITONE panels is crucial in ensuring all these trades are fully aware of the allowance for ventilation requirements.

For instance, the installation of capping/flushing over EQUITONE panels sometimes is carried out by a different trade than the façade contractor. In this case, a lack of coordination between the two trades may result in the required air outlets for EQUITONE being closed and blocked with an incorrect installation of these elements.

Another example is when the paving and landscaping works block the air inlet of EQUITONE at the bottom of the façade, or where windowsills/flashings hinder or block the ventilation at the interface with window heads and sills due to incorrect detailing or installation of these components.

Thermal performance and energy efficiency

It is the responsibility of the project designer or engineer to ensure the building envelop including external walls are designed to meet the thermal and energy efficiency requirements of the project.

To benefit from all the advantages of a ventilated façade and to significantly reduce or even eliminate thermal bridging, appropriate external insulation may also be used. Refer to local EQUITONE technical department for further information on this type of application.

Fire safety

EQUITONE [inspires] is fire resistant, exhibiting 0 flame spread or 0 smoke development per ASTM E84 and ULCS102.

Design considerations

External fixtures

Generally, no additional structural loads should be transferred to EQUITONE panels. Small surface-mounted features like small cameras and lights may be fixed to EQUITONE if they are fixed only to one panel and not bridged and fixed to two or more panels. Larger surface-mounted features, external fixtures, gutters, and downpipes must be fixed through an oversized hole in EQUITONE to structure or a dedicated support frame behind EQUITONE panels. The hole in EQUITONE should be oversized by at least 5-10 mm; the hole must be fully sealed with appropriate sealant. Services, e.g., pipes, and any additional support frame applied in the cavity for the support and fixing of any external fixtures must not block drainage and ventilation paths in the cavity. See the *Hanging Weights from EQUITONE* technical note for additional information.

Maintenance & warranty

Inspections

EQUITONE façade is low maintenance; however, it is recommended to regularly check the façade for any possible soiling and clean as required. All façades, irrespective of the material used, should be inspected and if necessary, serviced regularly. Regular periodic inspections and maintenance are recommended to ensure the long-term performance of the façade and to prevent costly repairs and rectifications in time. The building also retains its continuous and attractive appearance.

If general soiling is allowed to work into materials for too long, it is possible that it will penetrate so deeply that simple cleaning is no longer possible. More rigorous and thus more expensive cleaning methods may have to be employed.

For that reason, periodic and preventive inspection of façades is recommended, so that imperfections can be discovered and resolved or repaired in good time. All ventilation and drainage gaps must always be kept unobstructed. All flashings and seals should be regularly inspected, and any damage should be immediately repaired.

Soiling process on panels

Dust, soot, oils, greasy substances, atmospheric grime, etc. are ever present in the air and rainwater and can be deposited on most façades. If care is taken through considerate design and application, local soiling and runs can be avoided. This can be achieved by having adequate drip-molding, such as overhanging windowsills, good sealing, and attention to combat corrodible materials such as zinc, copper, aluminum, steel, etc.

Particular attention is needed around windowsills, parapets, and plinth areas as well as all openings/perforations and joint profiles. Water run-off can lead to efflorescence and/or concentrated soiling. The degree and speed at which materials become soiled largely depends on the surface, chemical stability, hardness, porosity, and ability to become electrostatically charged or not.

Where the façade is protected by a soffit or the like and hence not sufficiently exposed to rain, a more regular inspection and washdown may be required to prevent any salt and dirt build-up. Coastal projects may also require more regular inspections and washdowns.

In principle, perform the cleaning of the façade over the entire surface, from top to bottom because partial cleaning can result in color tonal differences.

Soiling process on glass

Alkali-enriched flow water from the façade can stain glass and unprotected metals (e.g., aluminum) especially when windows and façade are in the same plane. To prevent this, glass and metal surfaces should be covered during the entire construction period. If drilling/cutting dust do get on glass or metal surfaces, it should be removed by thoroughly cleaning immediately. It is recommended to use only coated metal parts (powder-coated or equivalent). The manufacturer's information on protection and cleaning must be observed.

Maintenance & warranty

Cleaning

There are three types of cleaning methods, mechanical, chemical, and power washing. Understand that shipping, handling, cutting, and drilling can all generate cement dust. Any moisture or humidity can essentially “re-cure” the cement dust resulting in extremely difficult removal. Thus, it is always important to use mechanical cleaning methods at various stages throughout construction and before proceeding with other cleaning methods.

Step 1: Mechanical Methods

- Micro-fiber cloth
- Compressed air
- Soft-bristle brush

The use of abrasive materials such as scourers, steel wool, and the like are not permitted, as these leave irreparable scratches on the panel surface. When mechanical cleaning is complete, proceed to chemical methods only if necessary. Normal stains can typically be removed with a sponge and water.

Step 2: Chemical Methods

- Mildly acidic solution (diluted vinegar)
- Ammonia-free window cleaner
- Mild detergent
- Flush/clean with plenty of water

Any cleaning product used must be ammonia-free. Solvent-based cleaners such as acetone, white spirit, etc. attack the paint surface and are therefore not suitable. If there is doubt on the suitability of the cleaning product, use it first on a leftover piece of the façade or a less visible part of the façade (e.g., behind a rainwater drain) to check if the agent doesn't damage the surface. There is a risk that the panel color coating may become cloudy.

Façade parts and other materials (metal parts, glass) on the building that can be affected by the cleaning agent used must be protected. Do not use tapes that leave glue residues on the surface or could potentially damage the surface when fixing protective cover plastic foils.

Only on EQUITONE [tectiva] and [linea] material can more stubborn stains and scratches be removed by sanding in the direction of the factory grain pattern using at least 80-grit sandpaper. Ensure all residual dust is thoroughly removed using mechanical cleaning methods. Follow with chemical cleaning methods if necessary.

In extreme circumstances, when the previous methods fail to clean to the desired effect, pressure washing can be performed. This must be done by experienced users. Incorrect use can lead to removal of the panel's coating or additional staining. Always insure the nozzle is perpendicular to the panel surface.

Step 3: Power Washing Methods

- Air-cured Panels
- Pressure: 290-430 psi (20-30 bar)
- Nozzle distance from panel face: 24 in (60 cm)
- Autoclaved Panels
- Maximum Pressure: 1450 psi (100 bar)
- Maximum Flow Rate: 2.65 gallons/min (10 L/min)
- Nozzle distance from panel face: 10 in (25 cm)

Maintenance & warranty

In general, it is recommended to perform the chosen cleaning method over the entire façade surface as partial cleaning can result in color and tonal imbalance. Refer to EQUITONE's comprehensive cleaning and maintenance documents for detailed information and additional guidance.

Efflorescence

Small amounts of lime stains, cement splashes, or limescale deposits and light efflorescence can be removed with a 5% malic acid solution or commercial citric acid in a 10% concentration. The panels are treated with the solution using a paintbrush or a soft brush. After an exposure time of 2 to 3 minutes, the remaining solution is rinsed off thoroughly with plenty of water. If efflorescence is still visible after drying, the application must be repeated. The solution should never be allowed to dry on the surface. The solution must not be allowed to come into contact with the metal supporting frame as corrosion can occur.

When working with any acid solutions the operative must be fully trained and experienced in its application and removal. There is a risk that the panel color coating may become cloudy.

Graffiti

The EQUITONE [natura] PRO and EQUITONE [pictura] surface coating provides superior protection against common colors and spray paints. It is smooth and cleanable. Graffiti can be removed with dedicated graffiti removers. Cleaners with volatile solvents should not be used. The application instructions of the cleaning product manufacturers shall be strictly followed.

NOTE: The other EQUITONE finishes do not have graffiti-resistant protection. EQUITONE [tectiva], EQUITONE [linea], and EQUITONE [lunara] may receive an appropriate third-party graffiti-resistant coating, applied by others, prior to or after panel installation, in which case the appearance of the panel may change as the applied protection affects the light reflectance of the panel finish. Furthermore, warranty of the coating and its application onto the EQUITONE surface must come from the manufacturer of said coating system.

Warranty

EQUITONE is backed by a 20-year warranty covering durability and weather resistance. Refer to the *EQUITONE product warranty* document for further information.

Installation checklist

Checking the following items is recommended before starting the installation of EQUITONE cladding. The following list is by no means exhaustive.

Before installing EQUITONE

<ul style="list-style-type: none"> ○ Ensure the building envelope is fully weatherproof, and all the junctions with openings and penetrations have been fully sealed as per relevant standards and regulations, and project requirements. 	<ul style="list-style-type: none"> ○ Confirm all the interfaces with EQUITONE, review architectural drawings as well as EQUITONE Construction Details, and prepare accordingly.
<ul style="list-style-type: none"> ○ Ensure all the windows/doors (or the like) and their associated components, including any sill tray or flashing, and head and jamb flashing, have been installed as per applicable standards and regulations, project requirements, and EQUITONE Construction Details. 	<ul style="list-style-type: none"> ○ Ensure panel sizes are correct, and all panel holes have been redrilled with 7 mm EQUITONE bit with correct spacing and adequate edge distances.
<ul style="list-style-type: none"> ○ Ensure adequate ground clearance as per EQUITONE Construction Details and regulatory requirements. Determine and mark the bottom of the cladding. 	<ul style="list-style-type: none"> ○ Ensure all panel edges are sanded and free of any dust. In the case of EQUITONE [natura] and EQUITONE [natura] PRO, ensure all panel edges have been fully sealed with LUKO.
<ul style="list-style-type: none"> ○ Ensure the cladding support frame has been installed correctly, straight, and plumb, and in accordance with project engineering design and relevant standards and spaced as per engineering requirements and EQUITONE span tables. 	<ul style="list-style-type: none"> ○ Ensure allowance for adequate air inlets and outlets, and ventilation within the cavity has been made, and the perforated angles or profiles have been installed where required.
<ul style="list-style-type: none"> ○ Ensure all the required flashings have been installed correctly and in accordance with applicable standards and regulations, project requirements and EQUITONE Construction Details. 	<ul style="list-style-type: none"> ○ Ensure the required EPDM strips have been applied on all battens as per the requirements outlined in this document and EQUITONE Construction Details.
<ul style="list-style-type: none"> ○ Confirm the need for any additional structural support required for accommodating any external fixtures or surface-mounted features. Under no circumstances should EQUITONE panels receive any additional structural loads. Any applied additional supports must not block the airflow and drainage within the cavity. 	<ul style="list-style-type: none"> ○ Ensure any shimming required to address out-of-plumb conditions is securely installed and does not compromise the structural connection of the battens to the structure. Project specific engineering may be required to ensure compliance.

Installation checklist

The following list is by no means exhaustive. It needs to be used in conjunction with other relevant EQUITONE technical documents.

Installation checklist

○ Before placing any panel on the façade, check the size of the panel, the location/spacing of the pre-drilled panel holes, and the edge distances are all correct. Ensure the panel is clean and free of any dust.	○ Ensure the thickness of any perforated profile, flashings, and the like located between the panel and support frame is not greater than 23 gauge (0.8 mm).
○ For panel fixing, ensure starting with the central holes and working outwards towards the edges to ensure the panel is installed flat and stress-free.	○ Ensure allowance for control/movement joints e.g., at the underside of the slabs. Ensure the panel and/or its support frame does not bridge any control/movement joint while fixed to both sides of it.
○ Ensure correct application of UNI-Wood-Screw. Hold the drill perpendicular to the panel face. Do not overtighten the screws.	○ Ensure allowance for adequate ventilation is made. Ensure adequate air inlet and air outlet at the bottom/top of the façade, and at the interface with windowsills and heads and the like.
○ For EQUITONE [natura] PRO and EQUITONE [pictura], ensure UNI-Wood-Screw collar is inserted in the panel holes prior to the application of the screws.	○ Ensure all necessary coordination is done with other trades to ensure allowance for adequate air inlets and outlets (ventilation) as per EQUITONE ventilation requirements.
○ Ensure all panel fixings are applied and there are no missing fixings.	○ Adopt an appropriate level of care to prevent any damage to panel finish and edges during panel installation.

After installation

○ Check the façade for any missing fixings, flashings, items, or defects.	○ Ensure panels are adequately protected after the installation where there is any risk of damage by other works.
○ Ensure the panels are cleaned after the installation in accordance with EQUITONE cleaning guidelines. The finished façade areas should be cleaned down following the fixing of panels. Any partial cleaning may cause minor visual impairments.	

Information



Please visit www.equitone.com for contact details, further information, and technical documents.

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