EQUITONE

design & installation guide

internal applications with face fixings

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etex inspiring ways of living

Contents

General information

This Design and Installation Guide serves only as a general guide providing basic design considerations and information in relation to the application and installation of EQUITONE as a wall or ceiling lining in dry indoor spaces. This guide illustrates that the installation of EQUITONE fibre cement materials is straight forward, provided some simple rules are followed.

About EQUITONE

EQUITONE is the world's leading architectural fibre cement material. EQUITONE evokes the unique characteristics of fibre cement. Fibre cement is a mineral composite with outstanding physical and aesthetic properties. Our company, Etex, has led the development and innovation of this versatile architectural building material for more than a century, under different brand names such as "Eternit". Today, EQUITONE is manufactured in state-of-the-art facilities in Germany, Belgium, and Poland.

EQUITONE materials and systems are CodeMark certified in Australia and New Zealand. For more details, please refer to the CodeMark certificates available at www.equitone.com.

CODEMARK™ Australia 30120

CodeMark CMNZ30119

Disclaimer

The information in this guide is comprehensive but not exhaustive, and the reader will need to satisfy themselves that the contents of this guide are suitable for their intended application. 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.

The information in this document is correct at the time of issuing. However, due to our committed program of continuous material and system development, we reserve the right to amend or alter the information contained in this document without prior notice. Please contact your local EQUITONE sales organisation or visit www.equitone.com to ensure you have the most current version.

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EQUITONE materials

Materials

The Minerals

For detailed information about EQUITONE materials, manufacturing tolerances and their technical properties, refer to their Material Information Sheet available from local EQUITONE website.

EQUITONE finishes are available in a variety of colours. For all available colours refer to local EQUITONE website.

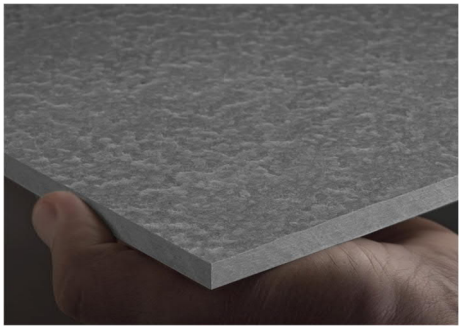
EQUITONE [tectiva] is a through-coloured, uncoated fibre cement material, characterised by a sanded surface and naturally occurring hues within the material. Every [tectiva] panel is unique, strongly expressing the raw texture of the core fibre cement material.

Thickness	Weight
8 mm	14.9 Kg/m^2
10 mm*	18.6 Kg/m2

*10 mm thick panels are available on request, subject to minimum order quantities.

EQUITONE [lines] is a unique 3D shaped, through-coloured fibre cement façade material that plays with light and shadow. EQUITONE [lines] with longitudinal grooves displays a linear texture that highlights the raw inner texture of the core fibre cement material. Every moment of the day, the changing angle of the daylight gives the material a different aspect.

Thickness	Weight
10 mm	16.8 Kg/m^2



A through-coloured, uncoated fibre cement material, EQUITONE [lunara] embodies an honest and pure appearance. Featuring a unique texture, the surface is of the panel is determined by a randomised surface treatment, which means no recurring pattern and no two panels being the same. Each façade is unique. Naturally occurring colour differences are also accentuated by the surface, as the extraordinary look and feel emphasises the originality of the fibre cement material.

Thickness	Weight
10 mm	18.6 kg/m^2

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

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

Thickness	Weight
8 mm	15.4 Kg/m2
12 mm	22.8 Kg/m2

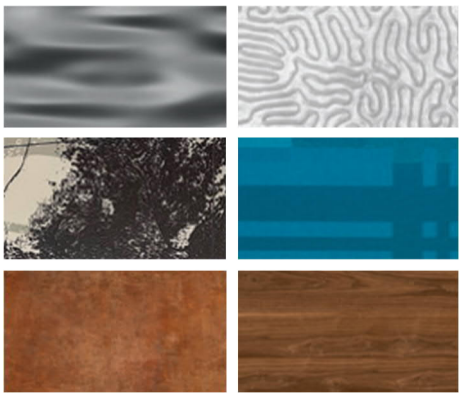
EQUITONE materials

The Colourfuls

EQUITONE [pictura] is a fibre cement material with ultra matt architectural finish comprised of a UV-hardened, anti-graffiti and scratch resistant surface coating.

Thickness	Weight
8 mm	15.4 Kg/m2
12 mm	22.8 Kg/m2

The Graphicals



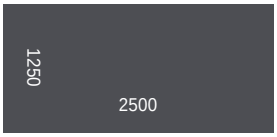
EQUITONE [inspira] is a high-density fibre cement panel with a digital printed surface covered with a UV finishing.
The surface finish is smooth, hard, and matt. The UV finishing provides a hard, dirt resistant surface finish with a high abrasion resistance and a permanent and durable anti-graffiti surface. Available in two ranges:
1) Expressive surfaces with wood, rust, concrete and stone decors
2) Artistic and special surfaces

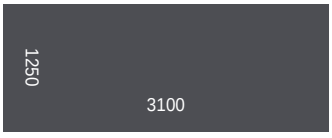
Thickness	Weight
8 mm	16.8 Kg/m2

Maximum panel sizes

EQUITONE [tectiva]
EQUITONE [lines]
EQUITONE [lunara]

EQUITONE [natura]
EQUITONE [natura] PRO
EQUITONE [pictura]
EQUITONE [inspira]





Face fixing options

For more information regarding each fixing option and its applications, refer to the relevant section of this document.

For concealed fixing, refer to EQUITONE Internal Application Guide - Concealed Fixing.

EQUITONE panels can be applied as interior wall and ceiling linings in dry areas with visible fixing options.

Face fixing to metal framing

UNI Rivet or UNI Metal Screw

EQUITONE panels are fixed to a metal support frame using specially designed, proprietary UNI Rivets or UNI Metal Screws. Each features a 15 mm colour-matched head for a seamless appearance.

The UNI Rivet and UNI-Metal Screw are installed based on STOP (fixed) and GO (gliding) fixing principle, with only two STOP points per panel. The red sleeve is used to create a STOP point. These fixing systems provide 2.25 mm of movement in three directions, allowing for stress-free panel fixing.

Face fixing to timber framing

UNI Screw

EQUITONE panels are fixed to a timber support frame using proprietary UNI Screws with a 15 mm colour-matched head.

General accessories

The following are the general accessories required for the preparation and installation of EQUITONE materials:

EQUITONE saw blades

These blades have been designed especially for cutting high density fibre 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 5,000m of cutting providing it is correctly used. The blades are available in the following sizes:

- 160 mm diameter with 4 diamond tipped teeth and 20 mm centre hole diameter
- 190 mm diameter with 4 diamond tipped teeth and 30 mm centre hole diameter
- 225 mm diameter with 6 diamond tipped teeth and 30 mm centre hole diameter
- 300 mm diameter with 8 diamond tipped teeth and 30 mm centre hole diameter

Jigsaw blade (for curved cutting only)

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

EQUITONE 7 mm drill bit (used with UNI Screw)

EQUITONE 11 mm drill bit (used with UNI Rivet and UNI-Metal Screw)

These are specially designed fibre 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 fibre cement. This drill bit reduces the 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.

EQUITONE centralising tool (Only applicable to UNI Rivet installation)

This tool is used to ensure the 4.1 mm rivet hole in the support frame is centred in the 11 mm panel hole. This ensures the best allowance for any frame movement. The tool has a guide that neatly fits into the panel hole. The 4.1 mm drill bit then extends to drill the profile. The drill bits can be easily replaced at the end of their functional life. This accessory fits any standard manual or electrical drill and is used with all EQUITONE panels which are to be fixed to a metal supporting frame with UNI Rivet.

EQUITONE centralising toll 4.1 mm replacement bit (Only applicable to UNI Rivet installation)

Centralising tool replacement bits are available in a pack of 5.

EQUITONE rivet setting tool * (Only applicable to UNI Rivet installation)

This accessory fits onto rivet gun and helps prevent scratching rivet head and panel during fixing operation, and it ensures the correct placement of rivet perpendicular to supporting frame and panel. It is available in the following options:

- Rivet setting tool for stainless steel UNI Rivet
- Rivet setting tool for aluminium UNI Rivet

* Not appliable to EQUITONE [lines]

General accessories

Compressible foam gasket (Used with UNI Rivet and UNI-Metal Screw)

A compressible closed-cell EPDM foam gasket is used with UNI Rivet and UNI-Metal Screw fixing systems.

- 12mm Tesa® 66703, 12mm Tesa® 61102, or 12mm PVC Tesa® 60106
- 40-48mm Tesa® 66703 (Used mainly for sealing and creating a black expressed panel joint on support frame with flat face)
- 40-48mm Tesa® 66704 (Used mainly for sealing and creating a black expressed panel joint on support frame with a recess on the face to accommodate the gasket)

Baffle

Black coated aluminium or steel baffle is typically used to form expressed panel joints. The baffle must not be greater than 0.9mm in thickness. It may be painted to match the colour of the panels if desired.

Material specific accessories

EQUITONE [lines] mill and drill tool

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

The tool with a 7 mm bit is used for fixing panels to timber framing, while the one with an 11 mm bit is used for fixing panels to metal framing.

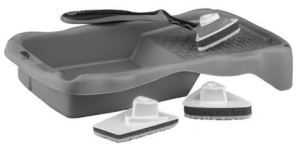
LUKO edge sealer for EQUITONE [natura] & [natura] PRO

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 where panels are likely to be exposed to direct moisture. It is available in 0.5, 1, and 10 litre containers. Depending on the application, 0.5 L of LUKO could cover up to 500 linear metres of panel edge.

Note: Luko edge sealing is not required for applications in dry internal areas.

LUKO application kit for EQUITONE [natura] & EQUITONE [natura] PRO

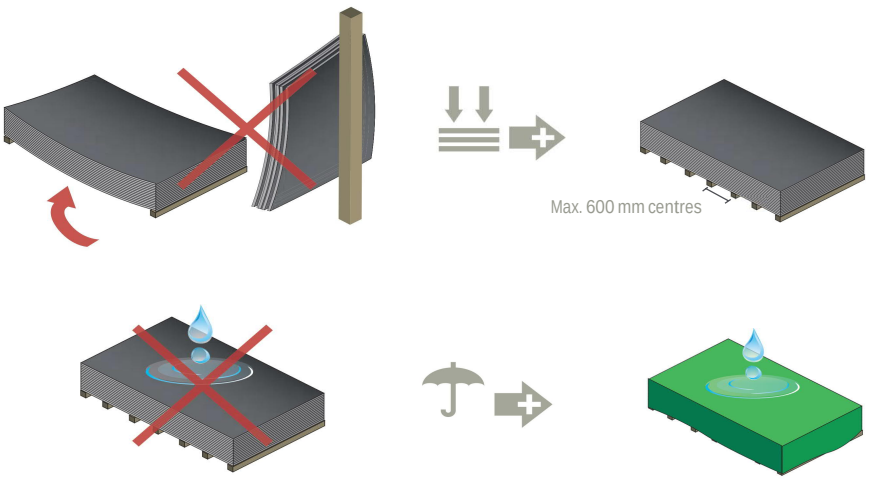
A LUKO application kit, including an applicator and tray, is available to assist with the correct application of LUKO. Replacement sponges are also available.



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 products clear of the ground and on level bearers at a maximum of 600 mm centres.



Before installed, EQUITONE panels must not get wet.

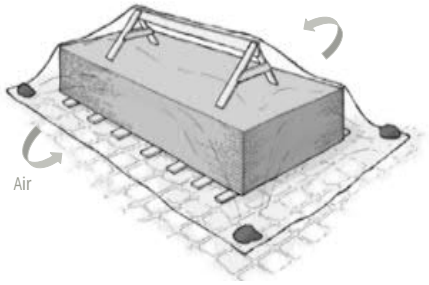
Do not deliver any panels to site which cannot be installed immediately or unloaded into a suitable well protected storage area.

EQUITONE is a prefinished material and 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.

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 being used.

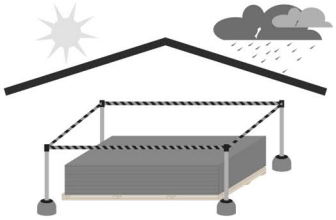
Other trades

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 panel.

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

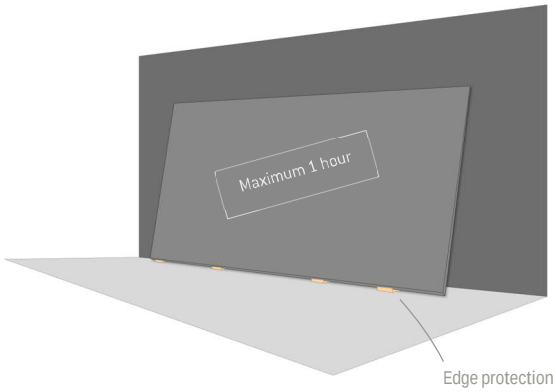


Panel storage

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, and [pictura]

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

When restacking these panels:

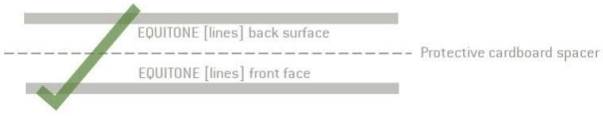
- Stack the panels front-face-to-front-face or back-surface-to-back-surface. The panels should not be placed face-to-back.
- Reuse the interleaving foam between each layer which is face-to-face to prevent scratches.

EQUITONE [inspira]

EQUITONE [Inspira] panels are supplied with interleaving protective foam. The panels are stacked front-to-back with the foam, which must always remain between the panels when restacking.

EQUITONE [lines]

EQUITONE [lines] panels are stacked front-face-to-back-surface with a protective spacer 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.

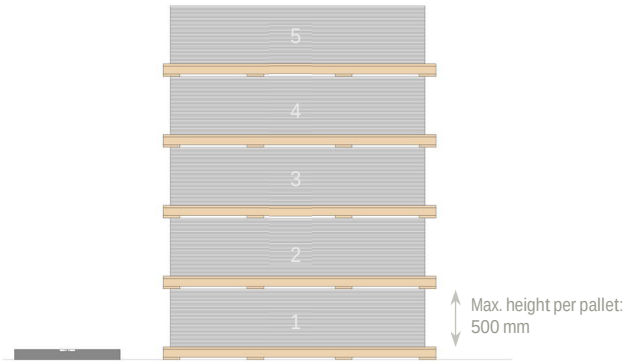


EQUITONE [tectiva] & [lunara]

EQUITONE [tectiva] and [lunara] panels may be stacked front-face-to-back-surface with no protective spacer or film in between the panels.

Pallets

Pallets are to be kept in a good condition. Damaged or broken pallets increase 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 500mm high, and not more than 5 pallets can be put on top of one another provided the ground is flat and level.



Panel moving

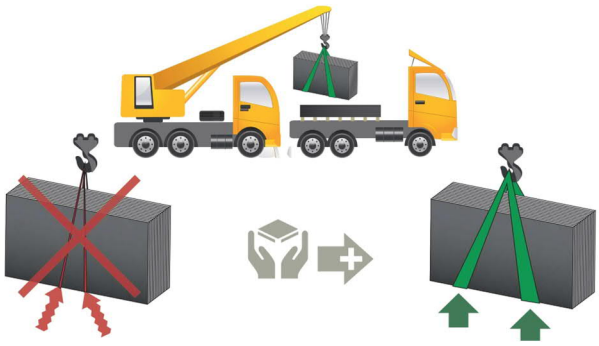
Lifting

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

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.

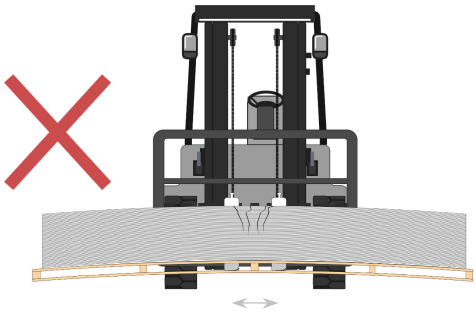
When lifting with straps, position them so the panels are balanced and there is no risk of tipping over. Use wide straps or edge protection to prevent damage.



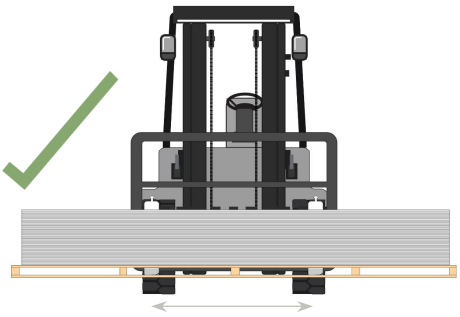
Forklift

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 bending when lifted.



Wrong forks setting (too close)



Wide forks setting

Panel handling

Handling

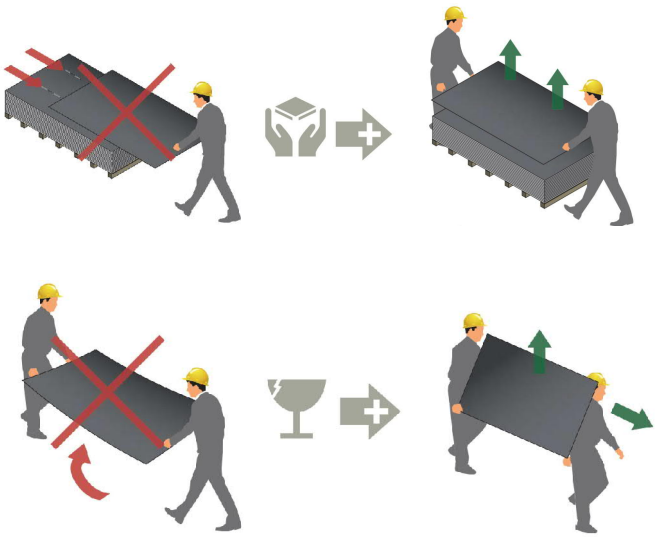
Plan carefully how the panels will be handled. Decide on a suitable route for moving the panel from the storage area to its installation location. Be aware of obstacles such as scaffolding, temporary supports or uneven walking surfaces.

Always lift panels off each other, 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 respect Health & Safety guidelines in all aspects of manual handling.



Suction lifters

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.

However, there is a high risk of leaving marks on the panel and therefore a test needs to be carried out to ensure the suction cups do not leave any marks on the panel surface e.g. because of the rubber's oily surface. The suction cups must be perfectly clean.

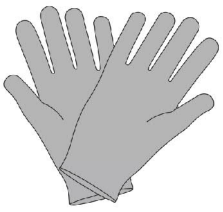
Carrying Straps

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

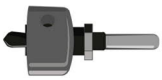
Tools & accessories

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

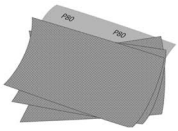
EQUITONE blade for manual cutting

Bosch T141HM jigsaw blade for curved cuts

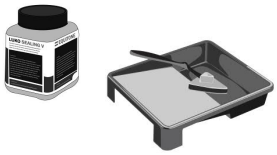
EQUITONE 7 mm drill bit for fixing panels to timber framing, or 11 mm drill bit for fixing panels to metal framing



EQUITONE drill & milling tool for drilling EQUITONE [lines]



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



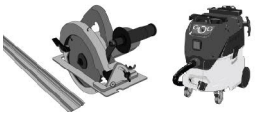
LUKO sealer & LUKO applicator kit for edge sealing of EQUITONE [natura] & EQUITONE [natura] PRO*

*LUKO is not required for dry internal applications

(For internal areas in high moisture areas) Paper towel for removing any LUKO residue

Clean microfibre cloth for dust removal

Measuring tools & pencil for marking



Saw, guiderail, & vacuum for panel cutting

Jigsaw for curved cut-outs

Drill for panel drilling

Health & safety

As with all products containing quartz, e.g. concrete and clay, when EQUITONE panels are machined mechanically (cutting, sanding, drilling) the released dust 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 compliant with AS/NZS 1715 and AS/NZS 1716) together with appropriate personal protective equipment (safety glasses, hard hat, boots, and protective clothing)

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

Panel preparation

Where untrimmed panels are used, panels must be trimmed before installation.

Refer to Material Information Sheet for trimming procedure.

Check the quality of EQUITONE panels and components for any visual defects or damage prior to installation. Contact your local EQUITONE organisation for any issues. DO NOT install any panels or components which are either damaged or not aligned with the project requirements and specifications.

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.

EQUITONE saw blades

EQUITONE saw blades are recommended to be used for cutting the panels. The following table provides the recommended saw speeds with respect to the blade sizes.

Blade Diameter	Blade thickness	Borehole	No. of teeth	Saw Speed (rpm)
160 mm	3.2 mm	20 mm	4	4,000
190 mm	3.2 mm	20 mm	4	3,200
225 mm	3.2 mm	30 mm	6	2,800
300 mm	3.2 mm	30 mm	8	2,000

Cutting procedure

When using portable saws, EQUITONE panels are normally placed face down and the cutting is from the back side. Therefore, it is important that the workbench has a clean and soft material covering it to prevent scratching and marking of the panels.

The blade should be set to extend approximately 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 work bench 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 makes 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 over stretching 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.

Panel preparation

Cutting equipment

Various types of equipment or machinery may be used for cutting EQUITONE panels. These may include portable saw e.g. circular saw, flat-bed horizontal or vertical (wall) saw, and CNC and waterjet machine. 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
- Panel must be positioned such that cutting is conducted into the panel face to reduce the risk of chipping the edges

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.

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 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.

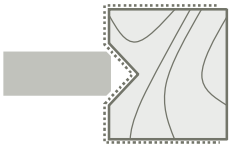
Finishing cut edges

Panel edges should be sanded after cutting them. This reduces the possibility of damage and improves their appearance.

Use 80 grit sandpaper secured to a block of wood, approx. 400 x 100 mm in size. Using a small timber block may result in uneven sanding.

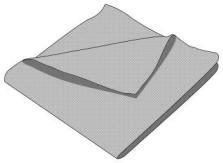
Do not use sanding pads, sponge blocks, or sandpaper without a hard backing, as these may cause curving of the edge finish.

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



Cleaning after cutting

Immediately after cutting, clean off all dust with a dry, clean microfibre cloth. Keep the cloth free of grit. Only use cloth for cement dust removal. Clean cloth regularly.



Panel preparation

Panel drilling

Panels should be drilled using a 7 mm EQUITONE drill bit for fixing panels to timber framing or an 11 mm EQUITONE drill bit for fixing panels to metal framing.

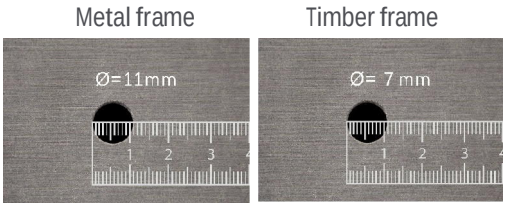
Ensure the panel is positioned face up, and that the drill is held perpendicular to panel face.

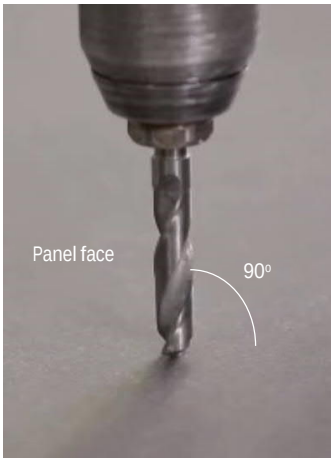
When drilling a panel, it is advisable to place it on a solid workbench preferably indoors or under cover. This will reduce the risk of staining as a result of damp/wet weather.

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 wall or ceiling.





Other machinery

Panel holes may be drilled with other machinery such as CNC machines provided that the hole size is ensured 7 mm for fixing to timber or 11 mm for fixing to metal framing. Smaller size hole reduces the movement allowance within the connection, and larger hole 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 coloured pencil such as white or red to highlight the hole position especially on grey or dark grey panels. It is possible that a grey pencil mark will be lost in the fibre pattern on the panel's surface.

Do not use chalk line and permanent markers.

Cleaning after drilling

Immediately after drilling, clean off all dust with a dry, clean microfibre cloth. Keep the cloth dry and free of grit. Do not use a wet cloth as staining may occur.

Only use cloth for cement dust removal. Clean cloth regularly.

Drilling EQUITONE [lines]

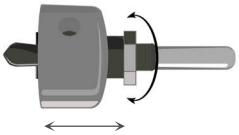
EQUITONE [lines] features a grooved surface. For face fixing of the panel with UNI Rivet, UNI Metal Screw and UNI-Screw the ridges need to be milled where the rivet will be located so that the rivet sits flat on the base of the groove.

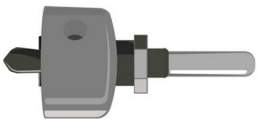
EQUITONE [lines] drill and mill tool (EQUITONE milling tool) must be used for drilling and milling the panel. The tool is equipped with built-in 11 mm or 7 mm bit and milling blades to both drill the panel hole and mill the ridge in one operation.

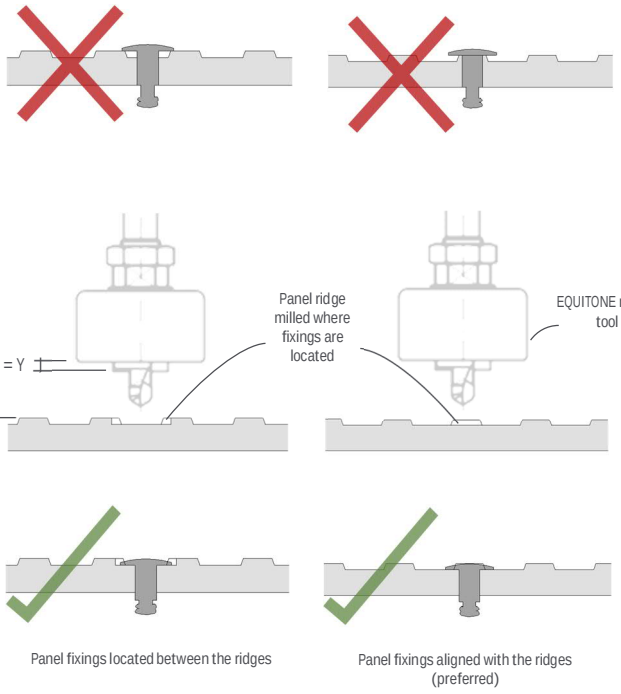
The panel hole and fixings can either be in between or aligned with the panel ridges.

From an aesthetic point of view, when drilling the EQUITONE [lines] 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 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.



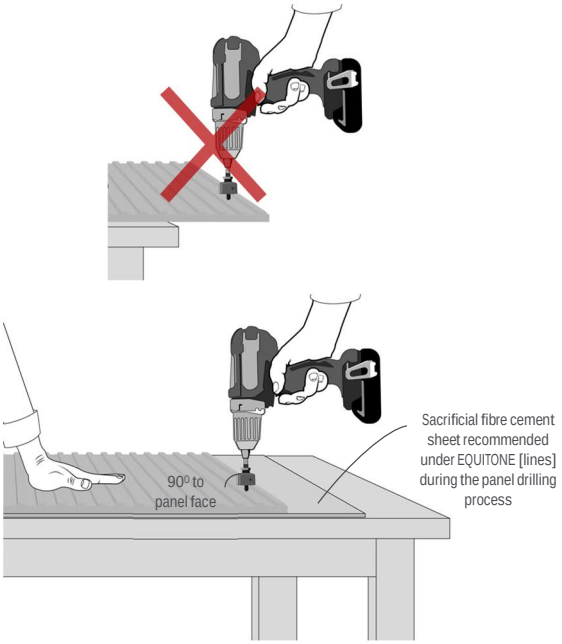




Application of EQUITONE milling tool

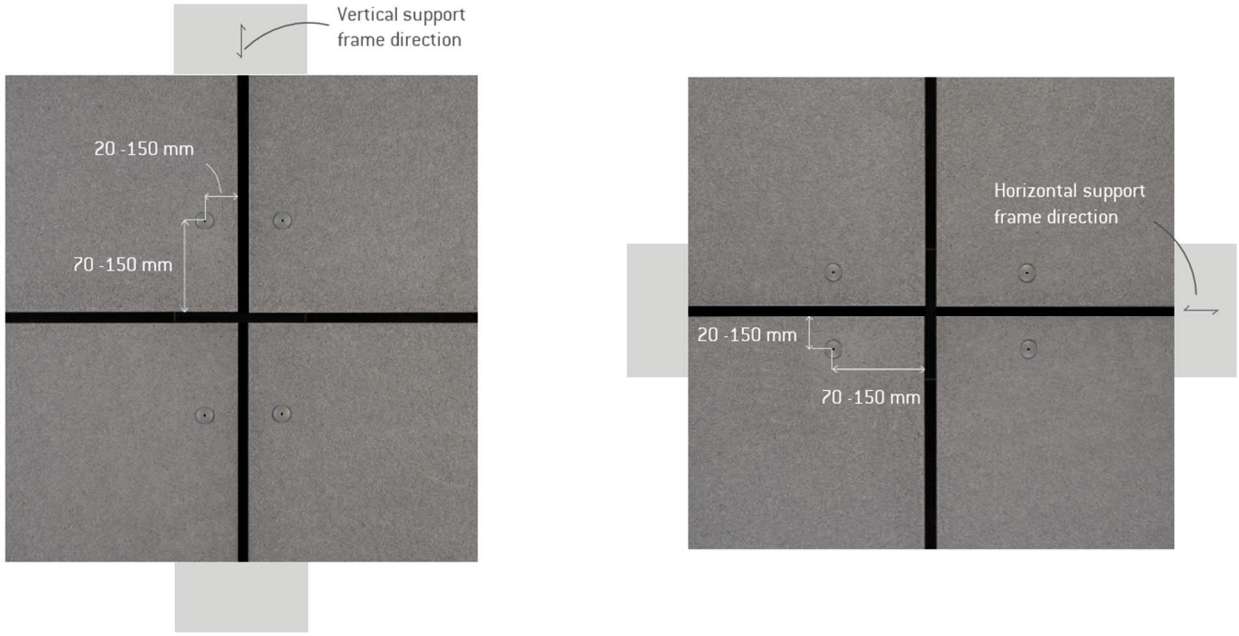
- Place a sacrificial fibre cement sheet on a solid, stable workbench
- Lay EQUITONE [lines] panel flat on the sacrificial fibre cement sheet
- Mark the location of the holes
- Place the milling tool on the hole position
- Ensure holding the drill perpendicular to panel face during the operation
- Hold 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 approx. 650-850 RPM for milling the ridges)

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



Panel preparation

Panel holes edge distance



Distance from the panel edge parallel to support frame profile:	20 to 150 mm
Distance from the panel edge perpendicular to support frame profile:	70 to 150 mm

Notes:

- All measurements are from the centre of the panel hole
- The recommended panel fixings edge distances provided in this section apply to both wall and ceiling applications

Panel preparation

EQUITONE [natura] & [natura] Pro edge treatment

(For applications where panels are likely to be exposed to direct moisture)
In high moisture environments such as indoor swimming pools or where panels are likely to become wet, the edges of EQUITONE [natura] and [natura] PRO panels must be impregnated with LUKO edge sealant. Do not apply LUKO in wet conditions or after the panel has been fixed.

Edge treatment procedure

Cut, sand, clean and LUKO.

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

1

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 mins.
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 colour cloth or recyclable paper towels – Do not use micro fibre 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 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 appropriate recommended applicator.

Panel must be positioned flat and face up for LUKO edge treatment.

Any LUKO excess on the panel face must be carefully and thoroughly wiped away. Failure to do so will result in stain that cannot be removed.

Allow for the applied LUKO to dry before manual 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

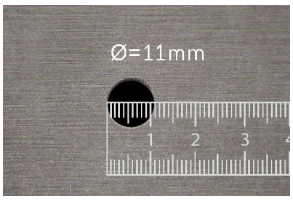
Note: The next section covers installation guidelines for 'Fixing to Metal Framing.' For guidelines on 'Fixing to Timber Framing,' please refer to page 34.

Fixing to metal framing

Fixing components

EQUITONE is face fixed to metal support frame using colour matched proprietary UNI Rivets or UNI-Metal Screws.

With an 11 mm panel hole and the fixings centred in the hole, the EQUITONE UNI Rivet and UNI-Metal Screw systems allow for 2.25 mm of 3-way movement within the connection, ensuring a stress-free panel fixation. Both systems feature mechanisms to control the connection depth: the UNI Rivet uses a green gasket to maintain a depth approximately 2.25 mm beyond the panel thickness, while the UNI-Metal Screw includes a built-in depth stopper for the same purpose.



Both UNI Rivet and UNI-Metal Screw are available in the following stainless steel grades:

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

UNI Rivet is also available in aluminium Almg5 grade for fixing to aluminium support frame.

For further information about EQUITONE UNI Rivets and their technical properties, refer to their Material Information Sheets available from local EQUITONE technical department.

UNI Rivet and UNI-Metal Screw must be used in conjunction with the recommended compressible closed-cell gasket.

There are only two STOP points per panel.

Location of STOP points in a panel is very important. Refer to Panel Fixing Principle and STOP Points Selection Guide for information and guidance on the correct selection of the STOP Points in a panel.

Panel hole size for both GO & STOP points is 11 mm, drilled with 11 mm EQUITONE proprietary bit.

UNI Rivet

UNI Rivet is available in the following sizes:

For 8 mm EQUITONE panel, and EQUITONE [lines]

Rivet type	Support frame Base Metal Thickness (BMT)
4x18 K15 Aluminium UNI Rivet	1.15 mm to 2.75 mm
4x18 K15 Stainless Steel UNI Rivet	1.1 mm to 3.75 mm
4x20 K15 Stainless Steel UNI Rivet	3.75 mm to 5.75 mm

For 10 mm EQUITONE panel (Not EQUITONE [lines])

Rivet type	Support frame Base Metal Thickness (BMT)
4x20 K15 Aluminium UNI Rivet	1.15 mm to 2.75 mm
4x20 K15 Stainless Steel UNI Rivet	1.1 mm to 3.75 mm
4x22 K15 Stainless Steel UNI Rivet	3.75 mm to 5.75 mm

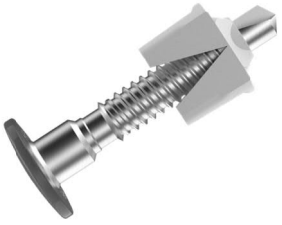
For 12 mm EQUITONE panel

Rivet type	Support frame Base Metal Thickness (BMT)
4x25 K15 Aluminium UNI Rivet	1.15 mm to 2.75 mm
4x22 K15 Stainless Steel UNI Rivet	1.1 mm to 3.75 mm
4x24 K15 Stainless Steel UNI Rivet	3.75 mm to 5.75 mm

UNI-Metal Screw

(Only suitable for 8mm EQUITONE panels and EQUITONE [lines])

UNI-Metal Screw is suitable for fixing to 1.1 to 2 mm (BMT) steel or 1.8 to 3 mm (BMT) aluminium framing. The screw comes with a pre-assembled centring sleeve, eliminating the need for predrilling the metal support frame and ensuring the screw is centred in the panel fixing hole.



Additionally, the screw features a special Torx recess and must be applied with a T25W (Not T25) bit. A bit is included in each box of screws.

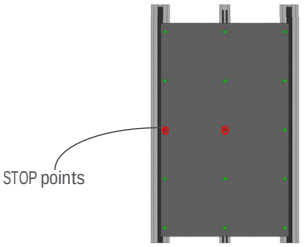
Fixing to metal framing

STOP point gasket (used with both UNI Rivet and UNI-Metal Screw options)
UNI Rivet and UNI-Metal Screw systems are based on a GO (gliding) and STOP (fixed) point principle. The red STOP point gasket (sleeve) is used to form STOP fixing points.

For STOP points, the red sleeve is placed over the green GO point sleeve of the UNI Rivet. When using the UNI-Metal Screw, the red sleeve is inserted directly into the screw.

Only two STOP points must be used per panel.

There is a specific size of the STOP point sleeve for each panel thickness. Both EQUITONE [lines] and 8 mm EQUITONE panel share the same size, 10 mm long, STOP point sleeve whereas with EQUITONE [lunara] and 12 mm EQUITONE panels different size sleeves i.e. 12 mm and 14 mm, respectively, are used.



Compressible foam gasket
A compressible closed-cell EPDM foam gasket is used with UNI Rivet and UNI-Metal Screw fixing systems.

- 12 mm Tesa® 66703, 12 mm Tesa® 61102, or 12 mm PVC Tesa® 60106
- 40-48 mm Tesa® 66703 (Used mainly for sealing and creating a black expressed panel joint on support frame with flat face)
- 40-48 mm Tesa® 66704 (Used mainly for sealing and creating a black expressed panel joint on support frame with a recess on the face to accommodate the gasket)

General support frame options

Fixing to metal battens or furring channels
EQUITONE may be face fixed to any engineered metal support frame profile. The common profiles are galvanised or aluminium-zinc alloy coated steel, stainless steel, and aluminium top hat or omega shaped profiles. Generally, wider profiles are used behind panel joints while a narrower profile is used as intermediate profiles in the middle of the panel. Depending on project's design, the width of framing may vary. The most common framing depths range from 15mm to 35mm for top hats.

The following provides general minimum specifications for the support frame.

General specifications of wall support frame:

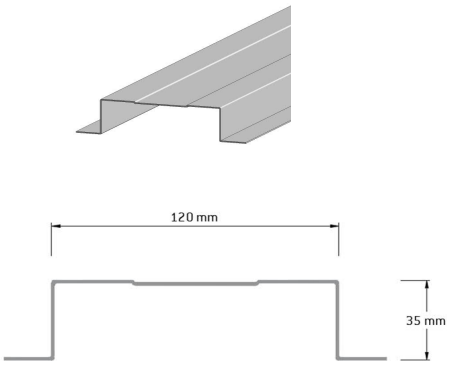
Minimum profile thickness (Base Metal Thickness)	Steel Aluminium	≥ 1.1 mm ≥ 2.0 mm
Recommended minimum width of intermediate profile		40 mm
Recommended minimum width of joint profile		120 mm
Recommended maximum length of profile*		3.2 m

* If exposed to external ambient temperature

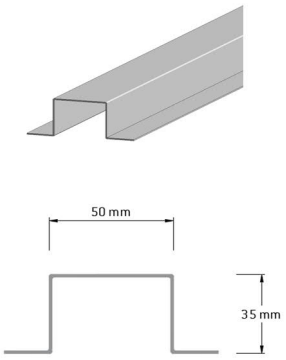
It is advisable to use a metal framing profile that allows for some degree of installation tolerance. Metal support frame profiles should be compliant with AS/NZS 4600 – Cold-formed steel structures and/or other applicable standards. Maximum deflection of support frame must be limited to Span/250.

Fixing to metal framing

Some of the common profiles:



Typical 35mm joint top hat profile



Typical 15/25/35mm intermediate top hat profile

Support frame orientation

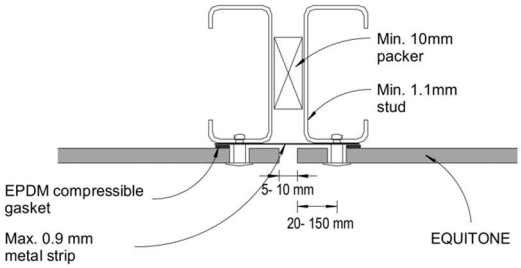
In internal dry applications where panels are unlikely to be exposed to moisture, the support frame can be installed either vertically or horizontally.

If metal battens or furring channels are intended to be used in a vertical orientation on a lightweight steel stud wall frame, it needs to be ensured that the horizontal noggins of the wall framing are specifically engineered and structurally adequate supporting the support frame, as the noggins are normally non-structural and designed for bracing purposes only. Panels can be attached to the battens or furring channels which are secured to the substrate.

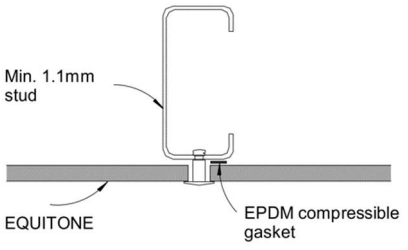
Fixing directly to metal stud frame

Panels may be fixed directly to engineered metal stud frame.

- Minimum thickness (gauge) of the studs for direct panel fixing is 1.1 mm BMT.
- The framing specifications and alignment must comply with AS/NZS 4600 Cold-Formed Steel Structures and
- AS 3623 Domestic Metal Framing and any other relevant standards
- Ensure the location of the studs suits the required panel layout, and if required, add additional studs.
- Double studs are required at all panel vertical joints.
- Maximum deflection of the studs must be limited to Span/250 or 4mm whichever is lesser.
- Maximum stud spacing for panel fixing is 600 mm or less depending on internal wind pressures and engineering requirements.



Panel directly fixed to studs – panel vertical joint
Plan view



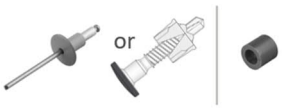
Panel directly fixed to studs – panel intermediate fixings
Plan view

Tools and accessories

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

EQUITONE centralising tool & 4.1mm replacement bit
(Only applicable to UNI Rivet installation)

EQUITONE UNI Rivet setting tool
(Only applicable to UNI Rivet installation)



UNI Rivet or UNI-Metal Screw, & STOP point gasket

Recommended EPDM compressible gasket

Knife

Baffle for baffled horizontal or vertical joints

Battery operated rivet gun e.g. Gesipa Accubird (pro)
(Only applicable to UNI Rivet installation)

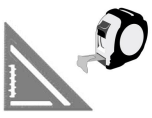
Drill

Metal snips for cutting baffle

Leveling tools

Shims & packers as required

Clean microfibre cloth for dust removal



Measuring tools

Pencils for marking

Fixing to metal framing

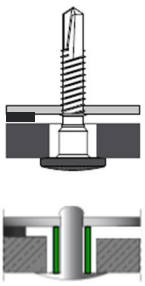
UNI Rivet and UNI-Metal Screw fixing

UNI Rivet and UNI-Metal Screw systems are based on GO (gliding) & STOP (fixed) point fixing principle.

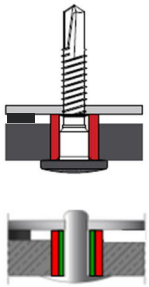
The red sleeve is placed over the fixings to form a STOP point.

GO point fixings

STOP point fixings



GO point allows for approx. 2.25 mm movement allowance around the green gasket of the rivet as well as in depth within the connection



STOP points carry the self-weight of the panel and stops panel rotation

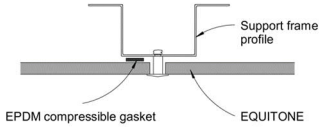
EPDM compressible gasket

UNI Rivet green gasket controls the depth of the connection. It provides an approximate 2.25 mm gap between the panel and support frame. The recommended EPDM closed-cell, compressible gasket is applied in between the panel and support frame to prevent rattling while allowing for movement in depth within the connection.

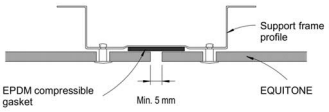
On the intermediate support frame, a narrow strip of the EPDM compressible gasket is applied to one side of the support frame face, to cushion the panel and prevent rattling.

On the support frame located at joints, generally a wider EPDM compressible gasket (40 to 48 mm) is used. This also forms a black expressed joint.

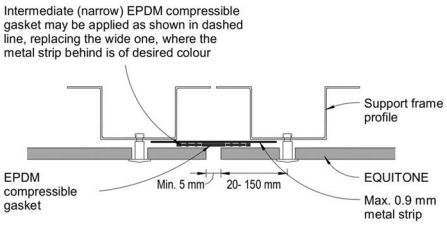
Where two intermediate support frame profiles are located at joint and a coloured metal strip is used to form the expressed joint, two narrow strips of EPDM compressible gasket may be used in lieu of a wider one.



Panel intermediate fixings – Plan view



Panel vertical joint (detail 1) – Plan view



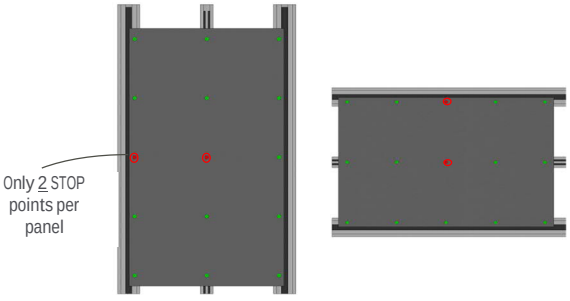
Panel vertical joint (detail 2) – Plan view

Location of STOP points

The location of STOP points is critical in ensuring a successful installation.

The general principles are:

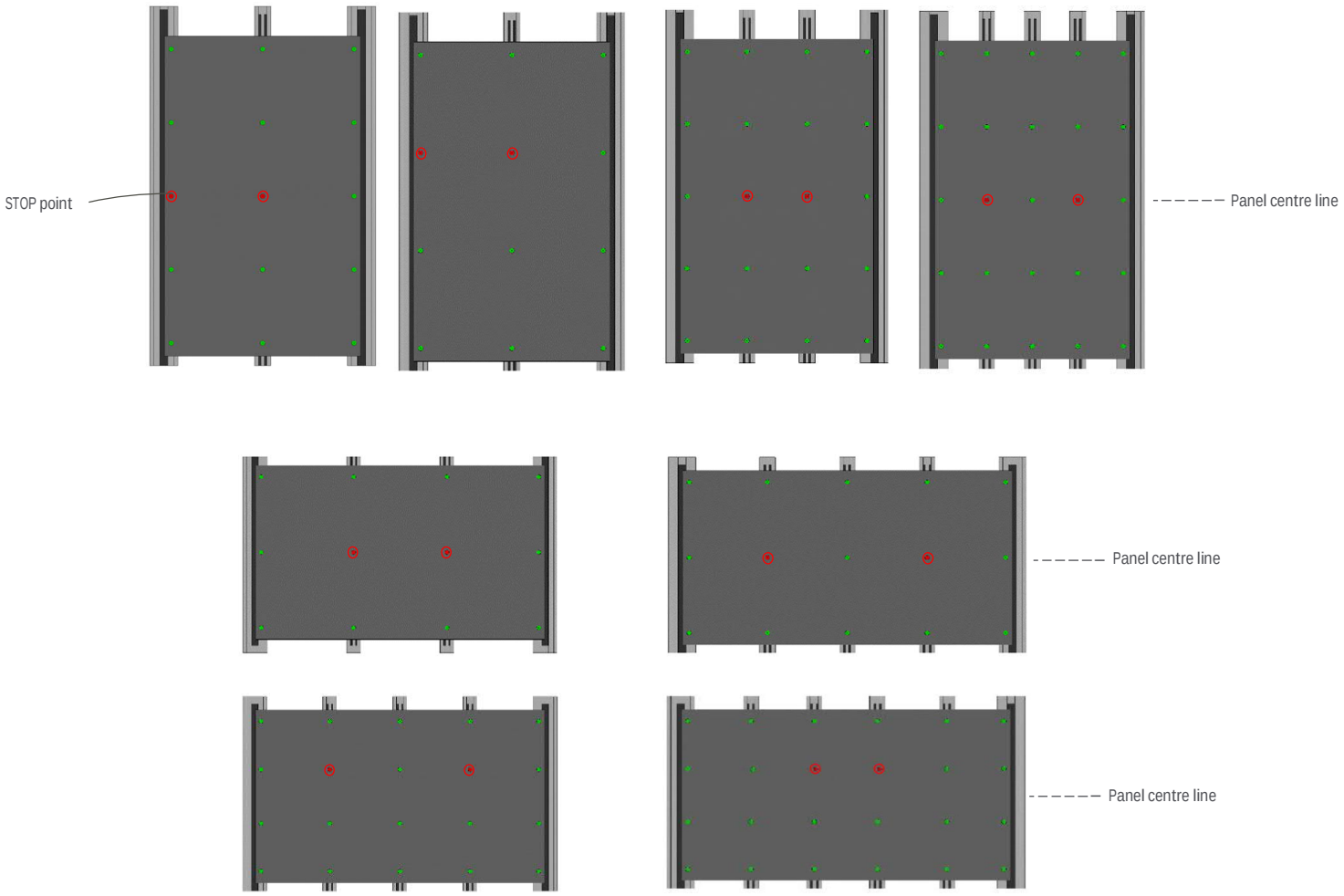
- Only two STOP points per panel; the rest are GO points
- STOP points are fixed on adjacent supporting frame; never place the 2 STOP points on same support frame profile
- STOP points are located as close as possible to the centreline of the panel
- STOP points of a panel should be located at the same level; do not position the STOP points diagonally
- Where possible, position the STOP points away from the panel edge
- Where there are more than three lines or rows of fixings position the STOP points symmetrically in relation to the centreline of the panel to balance it



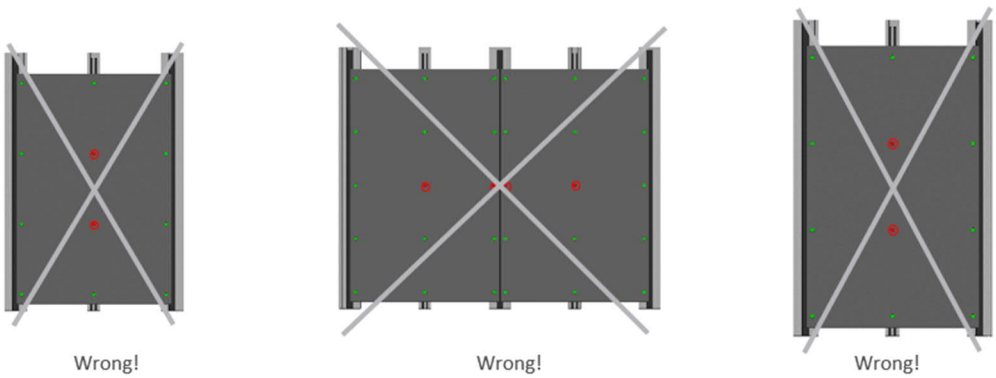
Fixing to metal framing

Typical examples of the recommended location of STOP points:

Note: For horizontal support frame orientation rotate the following images 90 degrees.



At no time should STOP points be located on the same support frame profile.



Fixing to metal framing

UNI Rivet application

Centralising tool application

EQUITONE centralising tool is used to centre the 4.1 mm rivet hole within the 11 mm panel hole.

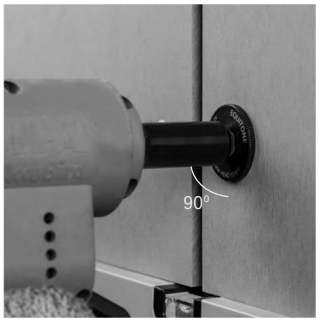
The centralising tool must be held perpendicular to the panel face during the application.

After drilling, ensure to remove any metal swarf or debris from the panel hole as otherwise these may rust and cause panel staining.

Rivet fixing operation

Always ensure using EQUITONE rivet setting tool. This accessory helps prevent scratching rivet head and panel during fixing operation, and it ensures the correct placement of rivet perpendicular to the support frame and panel.

Rivet gun must be held perpendicular to panel face.



Incorrect application of rivet, oversized rivet hole in the support frame, and/or inadequate thickness of support frame may cause the mandrel of the rivet to break and not be completely pulled out of the rivet, which may result in partial engagement of the rivet with the support frame.

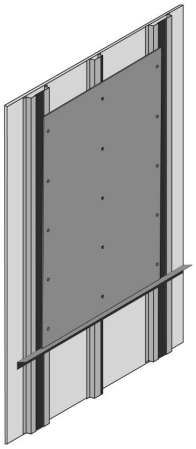
At no time should EQUITONE panel be fixed with screw to metal support frame. Screw fixing of the panel is not allowed at any stage of panel installation.

Fixing to metal framing

Panel fixing procedure

Following the below panel fixing procedure is very important for a successful installation. The following guidelines are equally applicable when using horizontal framing. The only difference is that the framing is oriented horizontally, but the same installation sequence and procedures apply.

1



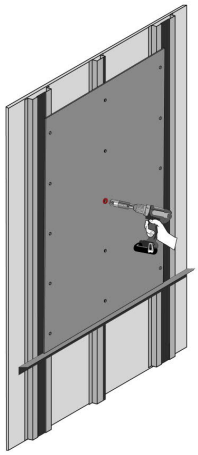
Place a pre-drilled panel on the wall.

Do not drill the panel holes when the panel is placed in position on the wall.

Generally, panel is placed on a temporary support angle, or packers as appropriate.

Ensure the EPDM compressible gasket is applied on all the support frame profiles before placing the panel in position.

2



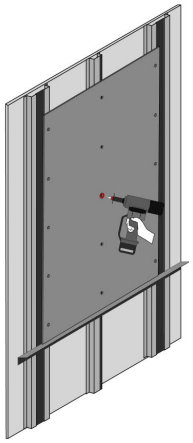
Determine the correct location of the two STOP points in the panel.

Using EQUITONE centralising tool, ONLY drill the rivet hole of the STOP point located close to the middle of the panel.

Do not yet drill the second STOP point rivet hole.

Clean the panel hole from any metal swarf. Ensure holding the drill perpendicular to panel.

3

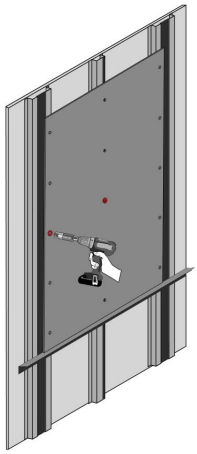


It is now the time to apply the first STOP point rivet.

Remove all metal swarf from the panel hole before applying the rivet.

Always ensure that rivet gun is held perpendicular to panel face.

4



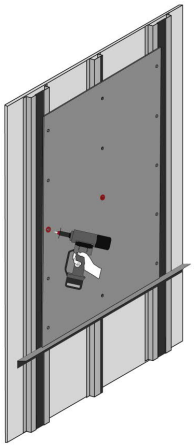
Now using EQUITONE centralising tool, drill the rivet hole for the second STOP point.

Do not drill the other rivet holes yet.

Clean the panel hole from any metal swarf.

Ensure holding the drill perpendicular to panel.

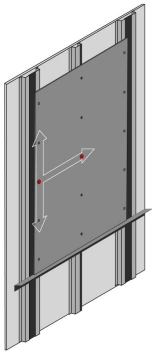
5

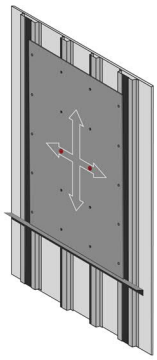


Apply the second STOP point rivet.

Remove all metal swarf from the panel hole before applying the rivet.

Note





After applying the STOP rivets, the GO point rivet holes can now be drilled using EQUITONE centralising tool. For this, always start with the holes located close to the centre of the panel and move outwards towards the panel edges; the very top and bottom holes are to be drilled last. This ensures panel is installed flat and stress free.

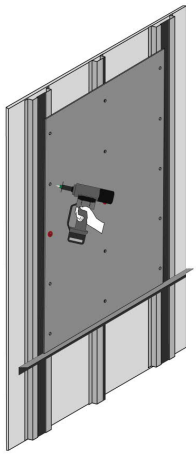
6

Once the STOP point rivets are in place, the GO point rivet holes can be drilled using EQUITONE centralising tool.

Always start with the holes located close to the centre of the panel and move outwards towards the panel edges.

Ensure holding the drill perpendicular to panel.

7

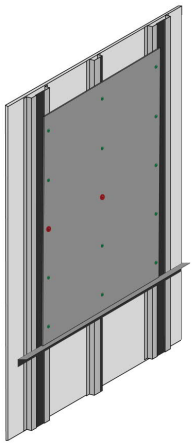


Apply the GO point rivets. Ensure all rivets sit flat on the panel surface.

Remove all metal swarf from the panel holes before applying any rivet.

Always ensure that rivet gun is held perpendicular to panel face.

8



Ensure all rivets are in place.

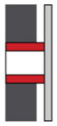
Fixing to metal framing

UNI-Metal Screw application

The procedure for the UNI-Metal Screw is similar to that of the UNI Rivet. First, the STOP point fixings must be installed. Once the STOP points are in place, the GO point fixings are installed, starting from the centre of the panel and working outwards towards the edges. The top and bottom fixings are installed last.

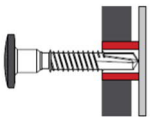
Step-by-step guide:

1. After determining the correct location of the STOP points, insert a red sleeve into those panel holes.

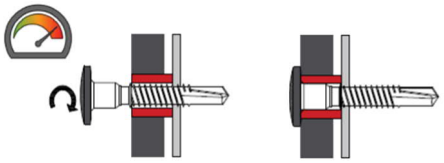


2. Remove the centring piece of the UNI-Metal Screw. The centring piece is not required for STOP points.

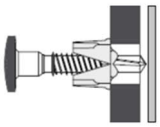
3. Insert the screw in the panel hole and install the screw using an impact or drill driver.



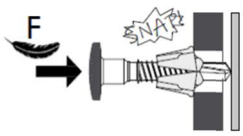
There is no requirement for torque settings, as the screw is designed to accommodate overdriving. Ensure the screw is fully installed.



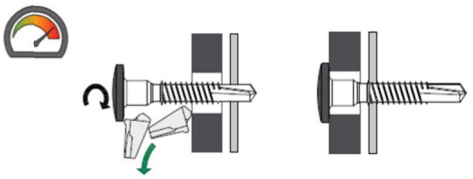
4. After installing the STOP point screws, proceed with the GO points. Position the screw with the preassembled centring piece in the panel hole.



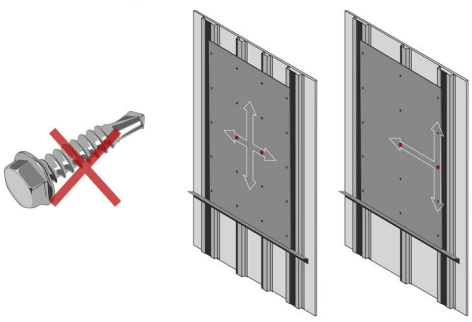
5. Before driving the screw, apply gentle pressure until the centring piece snaps. This step is crucial to ensure the centring piece functions properly and accurately centres the screw.



6. Begin screwing slowly until the screw engages with the metal and the centring sleeve falls out. Ensure the screw is fully installed. As mentioned above, there is no torque settings requirement as the screw allows for overtightening.



Note: At no time should EQUITONE panel be fixed with temporary screws. Only EQUITONE UNI-Metal Screw must be used as per the above procedure. Do not begin by fixing GO points or the corner fixings of the panel. Always start with STOP points first.



Note: If the UNI-Metal Screw needs to be removed, avoid reusing the same screw hole, as its pull-out capacity decreases with each removal and reinsertion.

Metal construction details (vertical framing)

Note: For illustration purposes, only the UNI-Rivet option is shown in the construction details. However, these details are interchangeable with UNI-Metal Screw. Please note that these details are not drawn to a specific scale.

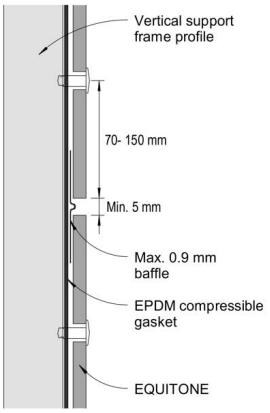


Figure 1: Closed horizontal joint
Vertical section view

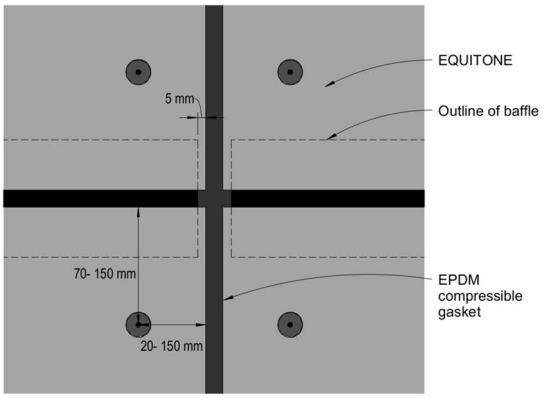


Figure 2: Closed horizontal joint
junction with vertical joint – Elevation

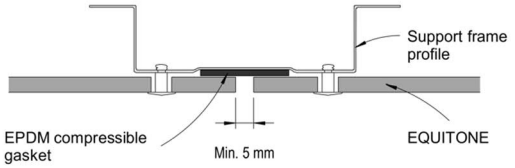


Figure 3: Vertical joint - Detail 1
Plan view

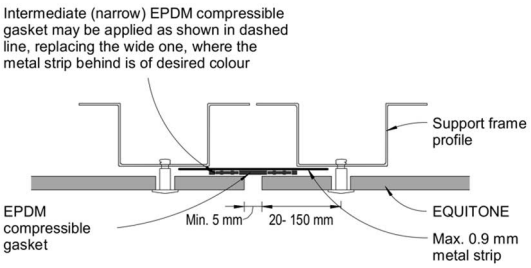


Figure 4: Vertical joint - Detail 2
Plan view

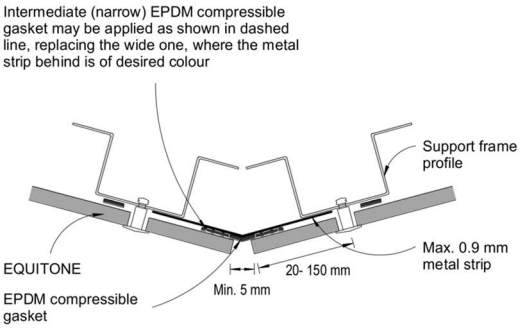


Figure 5: Vertical joint - Detail 3
Plan view

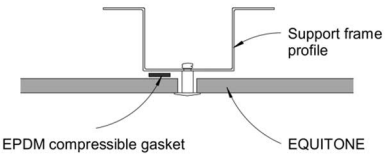


Figure 6: Intermediate panel fixings connection
Plan view

Fixing to metal framing

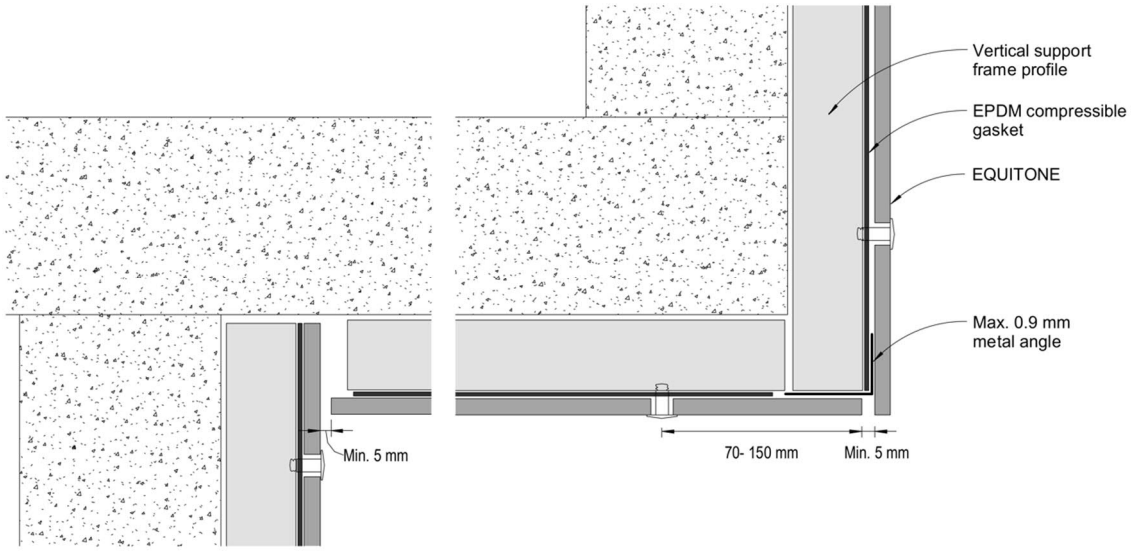


Figure 7: Ceiling junction
Vertical section view

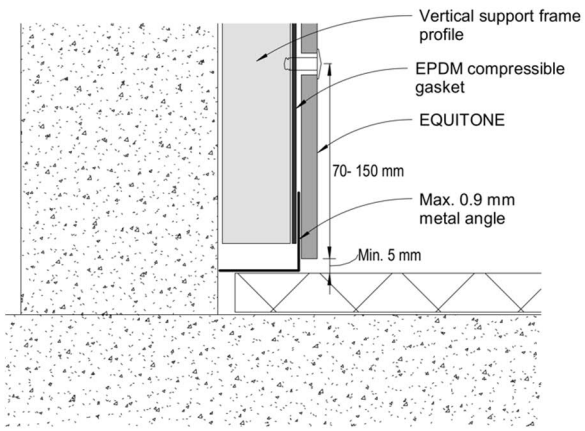


Figure 8: Base detail – Detail 1
Vertical section view

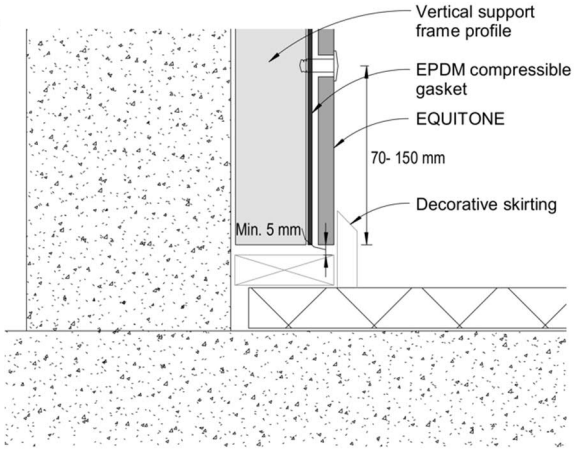


Figure 9: Base detail – Detail 2
Vertical section view

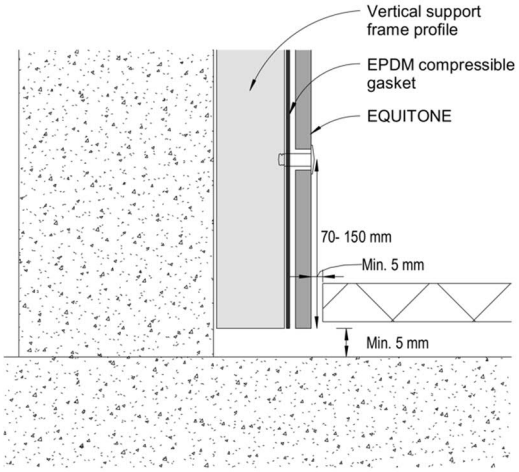


Figure 10: Base detail – Detail 3
Vertical section view

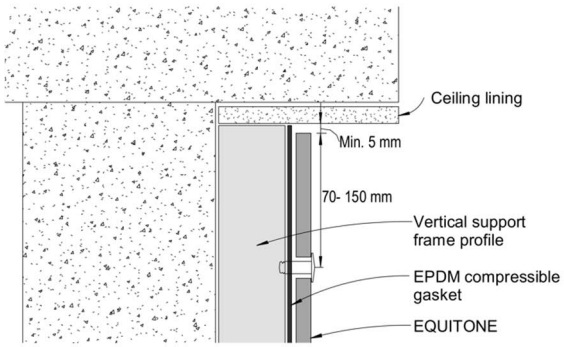


Figure 11: Ceiling lining junction
Vertical section view

Fixing to metal framing

Figure 12: External corner
Plan view

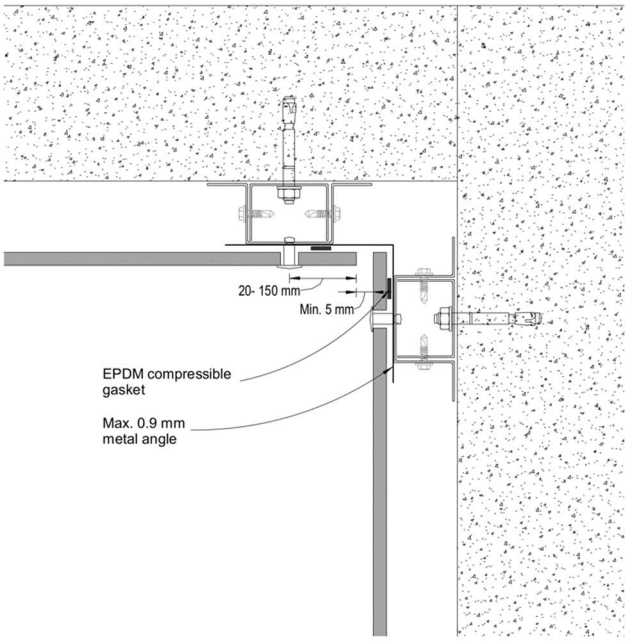


Figure 13: Internal corner
Plan view

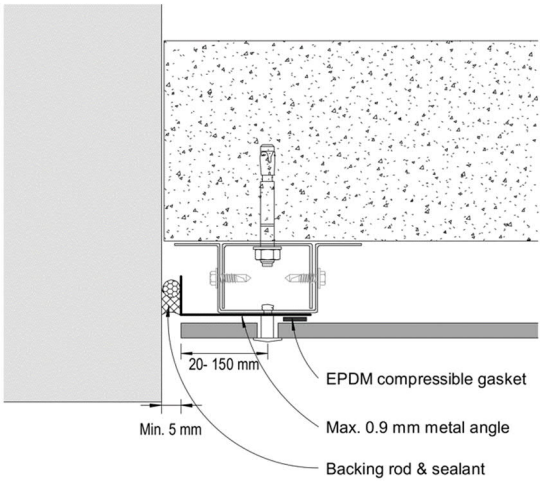


Figure 14: Abutment
Plan view

Metal construction details (horizontal framing)

Please note that these details are not drawn to a specific scale.

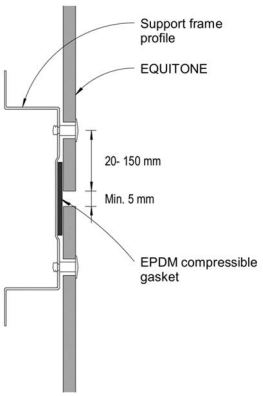


Figure 15: Closed horizontal joint – Detail 1
Vertical section view

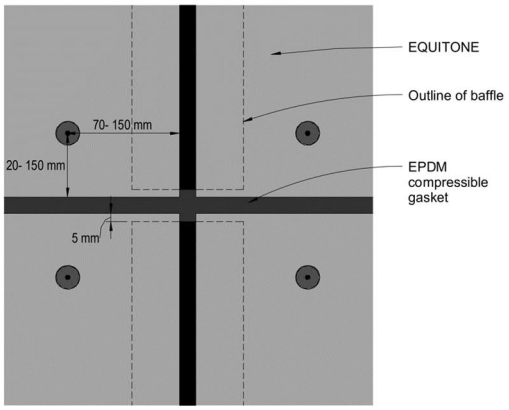


Figure 16: Closed horizontal joint
junction with vertical joint – Elevation

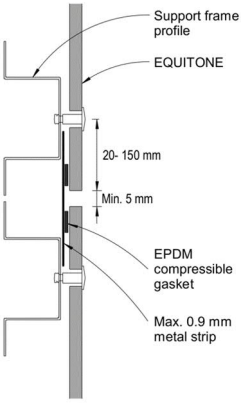


Figure 17: Closed horizontal joint – Detail 2
Vertical section view

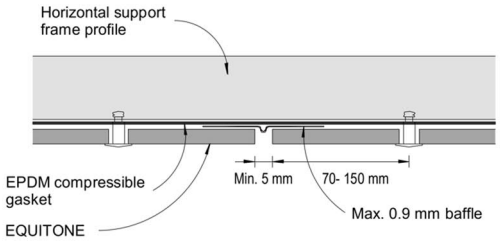


Figure 18: Closed vertical joint - Detail 1
Plan view

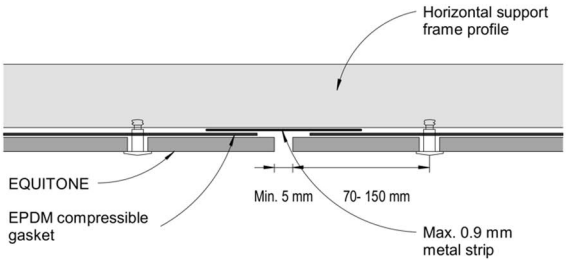


Figure 19: Closed vertical joint - Detail 2
Plan view

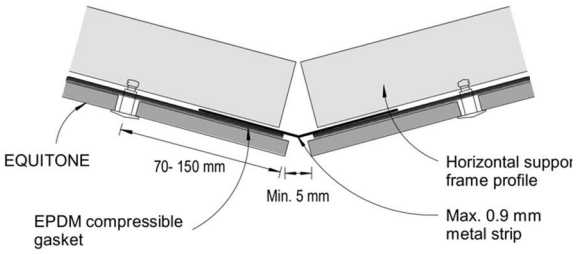


Figure 20: Closed vertical joint - Detail 3
Plan view

Fixing to metal framing

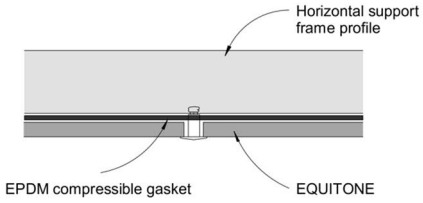


Figure 21: Intermediate panel fixings connection
Plan view

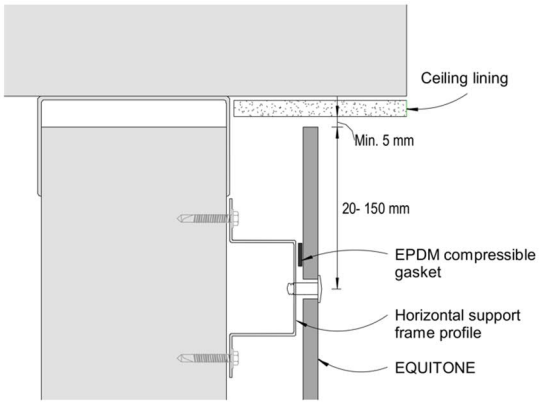


Figure 22: Ceiling lining junction
Vertical section view

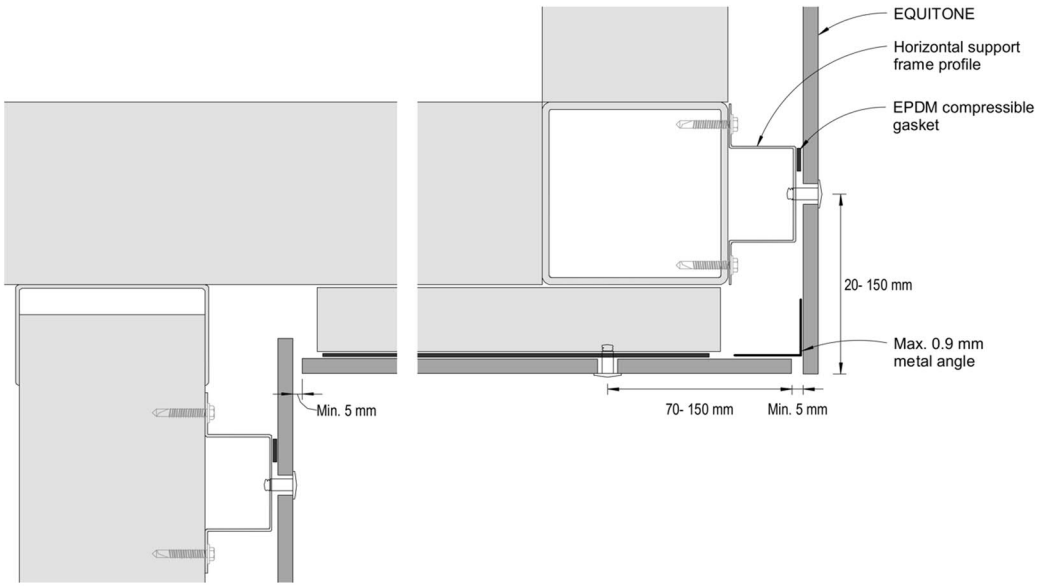


Figure 23: Ceiling junction
Vertical section view

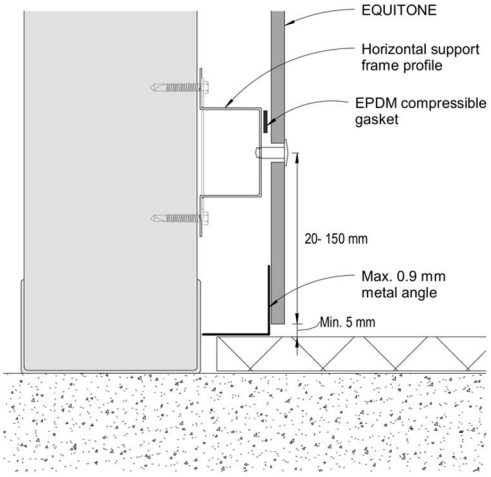


Figure 24: Base detail – Detail 1
Vertical section view

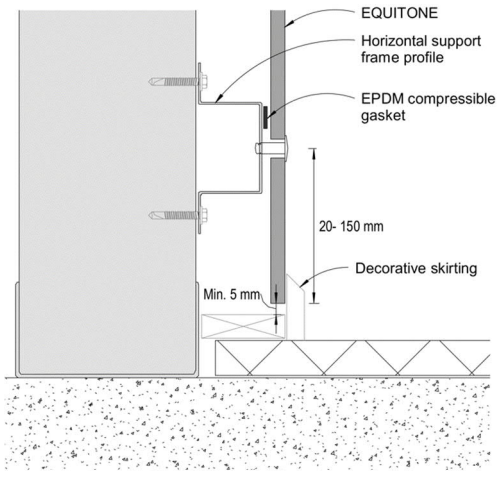


Figure 25: Base detail – Detail 2
Vertical section view

Fixing to metal framing

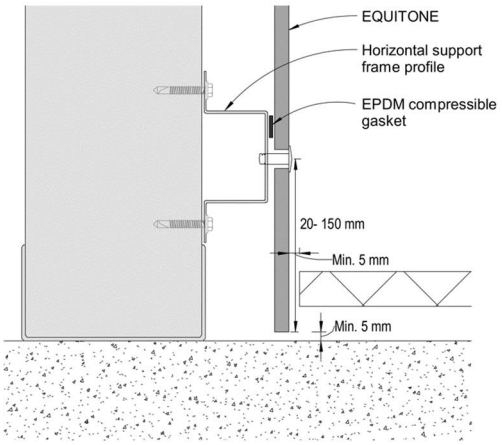


Figure 26: Base detail – Detail 3
Vertical section view

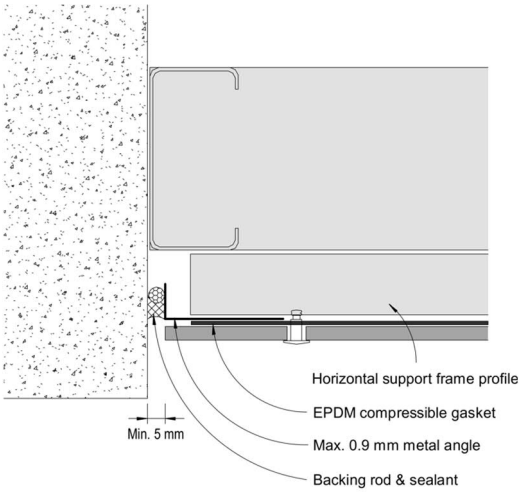


Figure 27: Abutment
Plan view

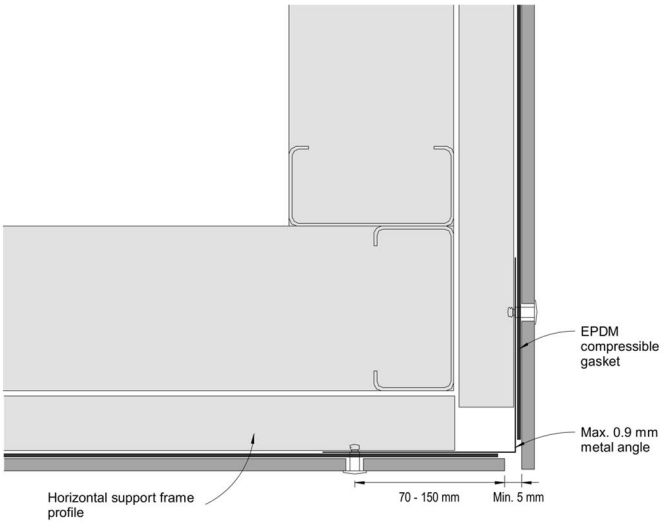


Figure 28: External corner
Plan view

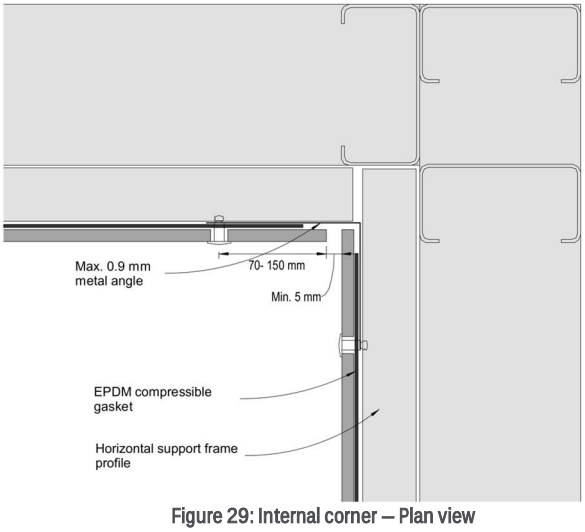


Figure 29: Internal corner – Plan view

Fixing to timber framing

Note: If you are not fixing EQUITONE to timber framing, you may skip this section on 'Fixing to timber framing' and refer to page 43 to 54 for the remaining information.

For further information about EQUITONE UNI Screw and their technical properties, refer to their Material Information Sheets available from local EQUITONE technical department.

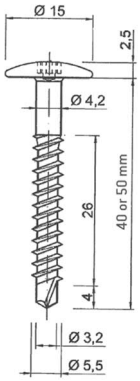
Fixing components

EQUITONE is face fixed to timber support frame (batten) using proprietary UNI Screw with T20 Torx socket cap with a 15 mm diameter head. The head of the screw is available coloured to match the panels. An uncoated UNI Screw is also available.

UNI Screw is available in the following materials:

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

The UNI-screw is available with a drilling point tip (DP) for screw fixing to timber.



Screw sizes:

Screw	Screw tip	Panel
5,5x40 DP K15 Stainless Steel UNI Screw	Drilling point (DP)	8 mm and 10 mm EQUITONE panel
5,5x50 DP K15 Stainless Steel UNI Screw	Drilling point (DP)	12 mm EQUITONE panel

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

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

Like UNI 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 highly corrosive environment)
- Stainless Steel 316 (A4) (used where higher corrosion resistance level is required)

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

EPDM strip (Optional)

For internal applications, the black EPDM strip is typically used to cover the timber framing located on the panels joints to create a black expressed joint. Refer to the relevant construction details and design consideration sections of this document for further information on joint detailing. EQUITONE EPDM strip is available in 100 mm width.

Fixing to timber framing

General support frame requirements

Fixing to timber battens

EQUITONE panels may be fixed to engineered timber battens using UNI Screws.

- In internal dry applications where panels are unlikely to be exposed to moisture, timber battens can be installed either vertically or horizontally.
- Timber battens may be fixed through any existing internal lining or directly to the wall framing or substructure as per engineering details.
- Double battens are required at all panel vertical joints.
- Maximum deflection of the battens must be limited to Span/250 or 4mm whichever is lesser.

Minimum typical timber batten specifications:

Minimum batten depth	35 mm
Minimum width of intermediate batten	50 mm
Recommended minimum width of intermediate batten	70 mm
Recommended minimum treatment for dry internal area	H2 (AU), H1.2 (NZ)
Minimum grade	MGP10 (AU), SG6 (NZ)

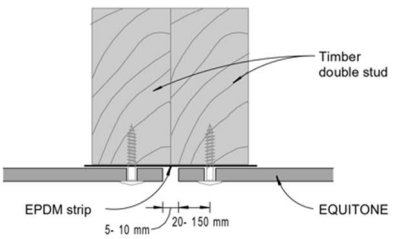
Fixing directly to timber studs

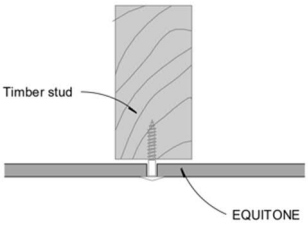
EQUITONE panels may be fixed directly to engineered timber stud frame with UNI Screw.

- The framing specifications and alignment must comply with AS 1684 Residential Timber Frame Construction (or NZS 3604:2011 Timber-framed buildings for New Zealand) and any other relevant standards
- Ensure the location of the studs suits the required panel layout, and if required, add additional studs.
- Double studs are required at all panel vertical joints.
- Maximum stud spacing for panel fixing is 600 mm or less depending on internal wind pressures and engineering requirements.
- Maximum deflection of the studs must be limited to Span/250 or 4mm whichever is lesser.

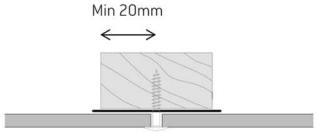
Minimum typical stud specifications for panel fixing:

Minimum stud width	70 mm
Minimum stud thickness	45 mm
Recommended minimum treatment for dry internal area	H2 (AU), H1.2 (NZ)
Minimum grade	MGP10 (AU), SG6 (NZ)





Ensure UNI-screw is a minimum of 20 mm in from the edge of the batten or stud.



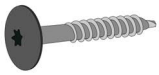
Minimum embedment depth of UNI Screw in timber batten:

Screw	Minimum embedment depth in batten (mm)
UNI Screw with drilling point (DP) tip	30

Fixing to timber framing

Tools and accessories

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



UNI Screw

UNI Screw collar
used with EQUITONE [natura] PRO & EQUITONE [pictura]

Recommended EPDM compressible gasket

EPDM strip as required

Baffle for baffled horizontal joints

Shims & packers as required

Drill

Metal snips for cutting perforated profile, baffle, and flashings

Clean microfibre cloth for dust removal

T20 Torx driver bit

Pencils for marking

Knife

Measuring tools

Leveling tools

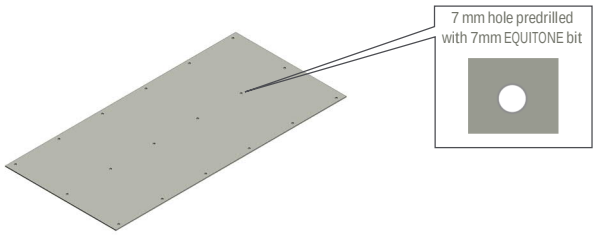
Check the quality of EQUITONE panels and components for any visual defects or damage prior to installation. Contact your local EQUITONE organisation for any issues. DO NOT install any panels or components which are either damaged or not aligned with the project requirements and specifications.

Fixing to timber framing

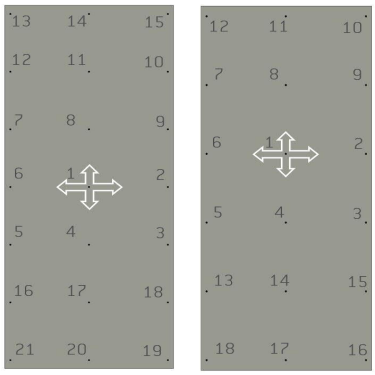
Panel fixing

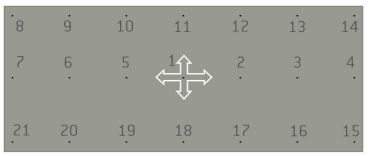
EQUITONE is fixed to timber battens with UNI Screw.

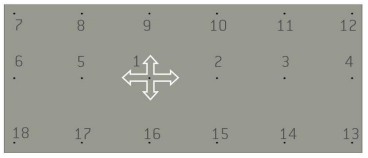
Panels must be predrilled with 7 mm EQUITONE drill bit before being placed in position.



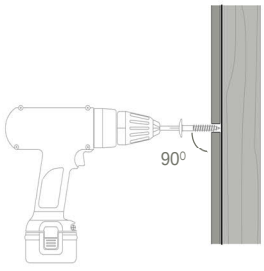
For panel fixing, always start with the central holes and work outwards towards the edges to ensure panel is installed flat and stress free. The following are examples of the recommended fixing sequence.



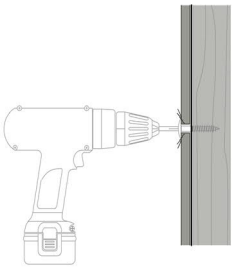




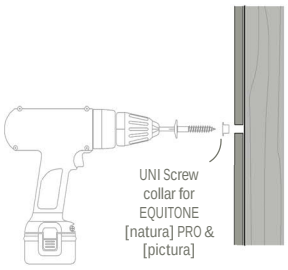
Screw must be applied perpendicular to the panel face and sit flat on the surface of the panel. Do not overtighten the screw. With EQUITONE [natura] PRO and EQUITONE [pictura], UNI Screw collar must be used and inserted in the panel holes before applying the UNI Screw.



Ensure the screw is applied perpendicular to panel face



Do not overtighten the screw



UNI Screw collar shall be used with EQUITONE [natura] PRO and EQUITONE [pictura]

Timber construction details (vertical framing)

Please note that these details are not drawn to a specific scale.

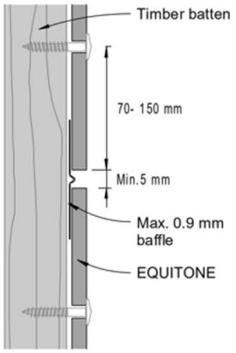


Figure 30: Closed horizontal joint
Vertical section view

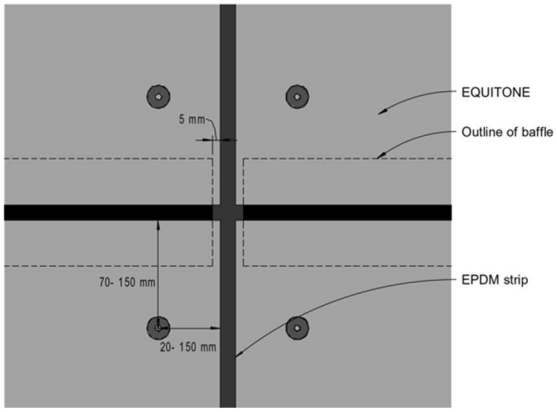


Figure 31: Closed horizontal joint
junction with vertical joint – Elevation

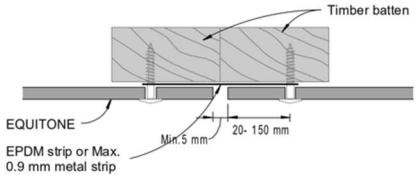


Figure 32: Vertical joint - Detail 1
Plan view

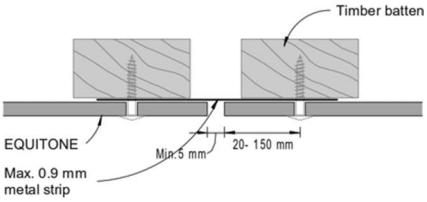


Figure 33: Vertical joint - Detail 2
Plan view

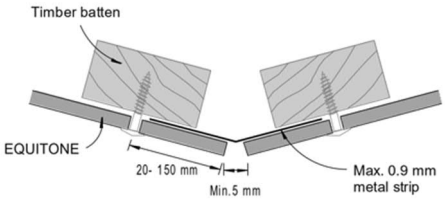


Figure 34: Vertical joint - Detail 3
Plan view

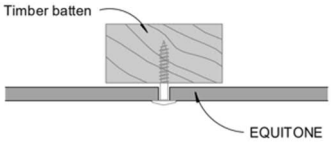


Figure 35: Intermediate panel fixings connection
Plan view

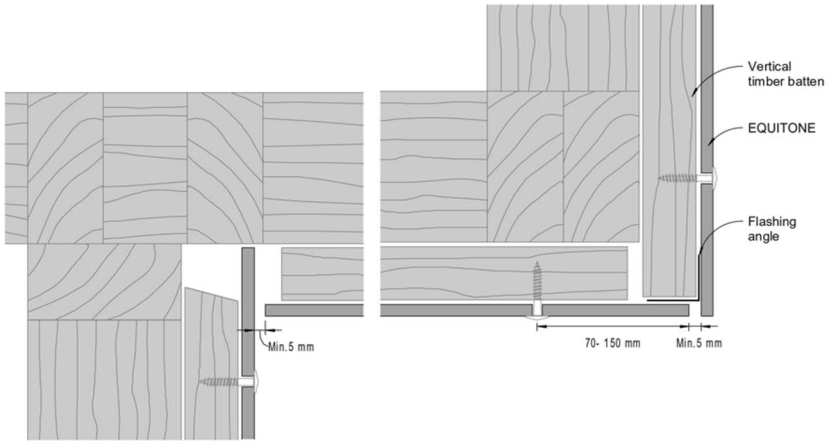


Figure 36: Ceiling junction – Vertical section view

Fixing to timber framing

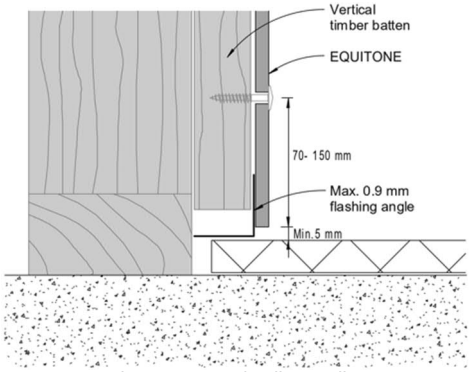


Figure 37: Base detail – Detail 1
Vertical section view

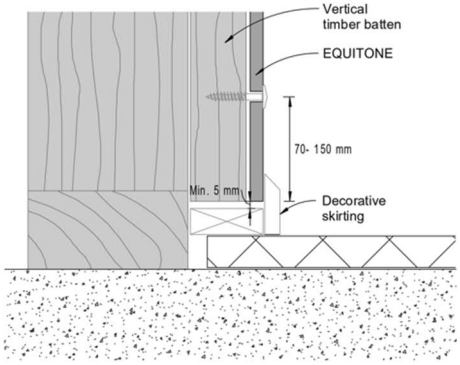


Figure 38: Base detail – Detail 2
Vertical section view

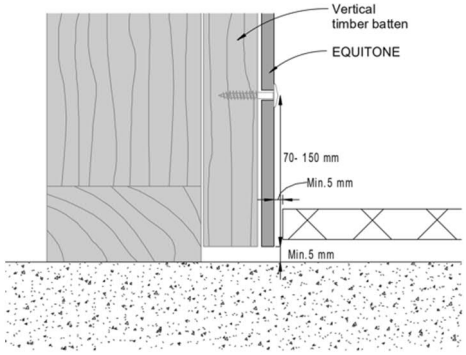


Figure 39: Base detail – Detail 3
Vertical section view

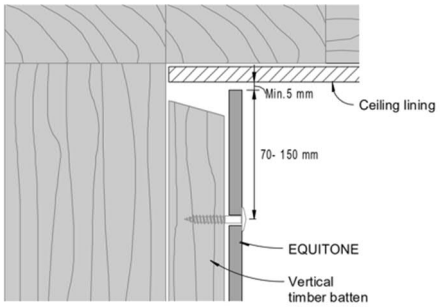


Figure 40: Ceiling lining junction
Vertical section view

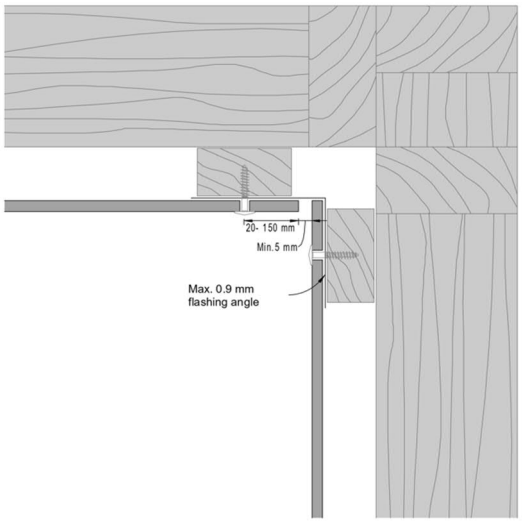


Figure 41: Internal corner
Plan view

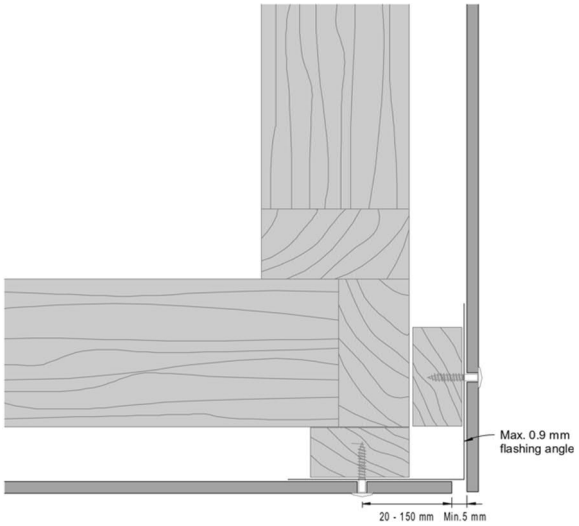


Figure 42: External corner
Plan view

Fixing to timber framing

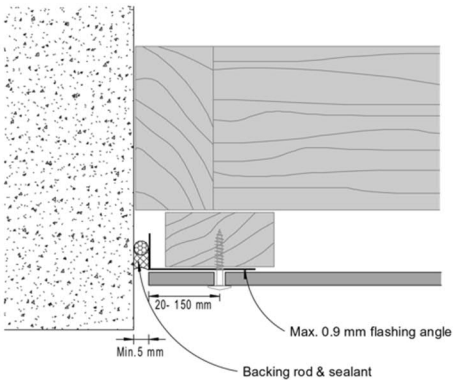


Figure 43: Abutment
Plan view

Timber construction details (horizontal framing)

Please note that these details are not drawn to a specific scale.

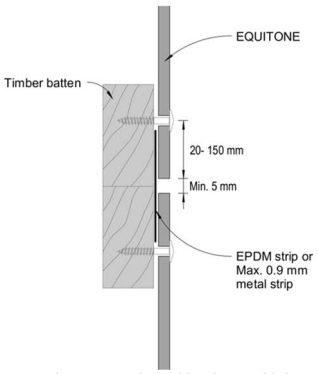


Figure 44: Closed horizontal joint
Vertical section view

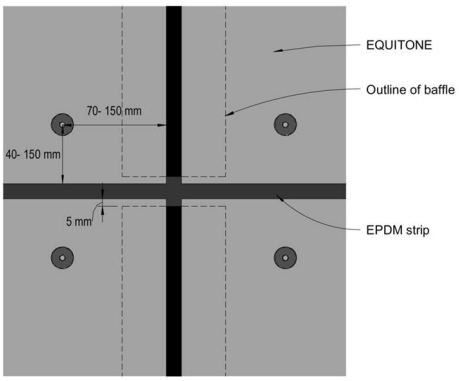


Figure 45: Closed horizontal joint
junction with vertical joint – Elevation

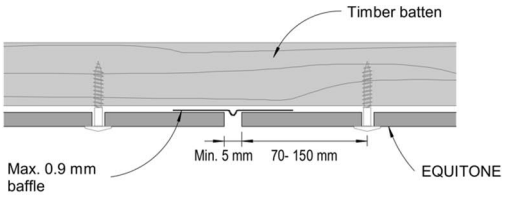


Figure 46: Vertical joint – Detail 1
Plan view

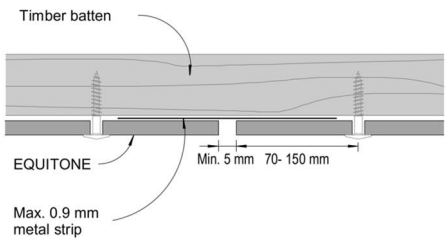


Figure 47: Vertical joint – Detail 2
Plan view

Fixing to timber framing

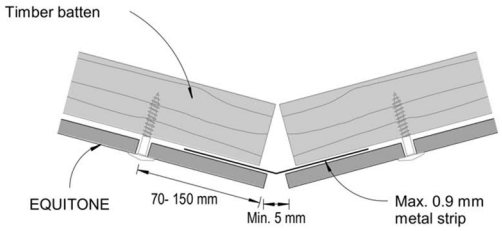


Figure 48: Vertical joint – Detail 3
Plan view

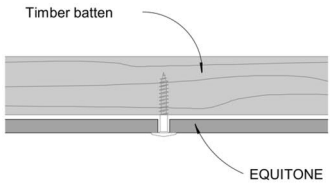


Figure 49: Intermediate panel fixings connection
Plan view

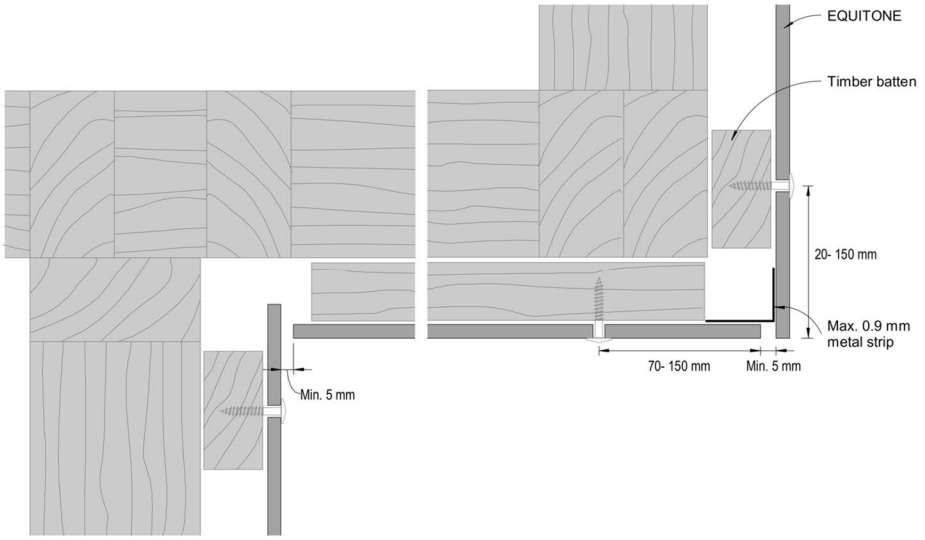


Figure 50: Ceiling junction
Vertical section view

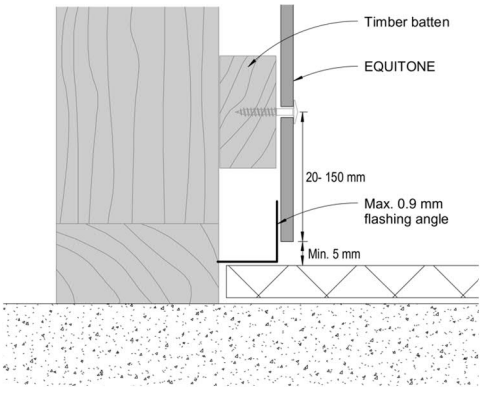


Figure 51: Base detail – Detail 1
Vertical section view

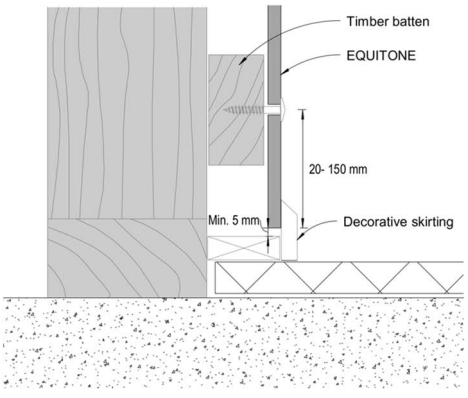


Figure 52: Base detail – Detail 2
Vertical section view

Fixing to timber framing

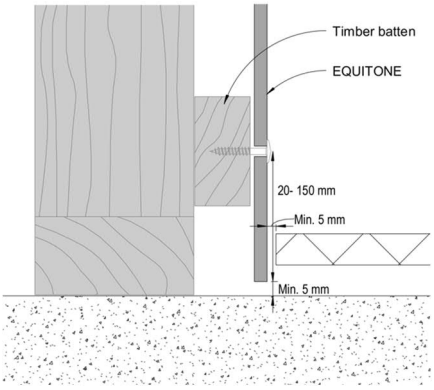


Figure 53: Base detail – Detail3
Vertical section view

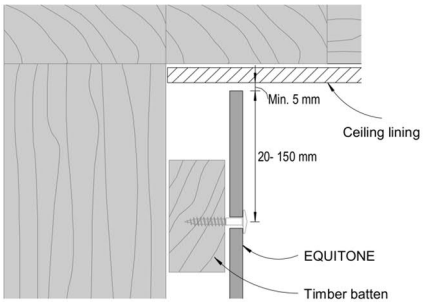


Figure 54: Ceiling lining junction
Vertical section view

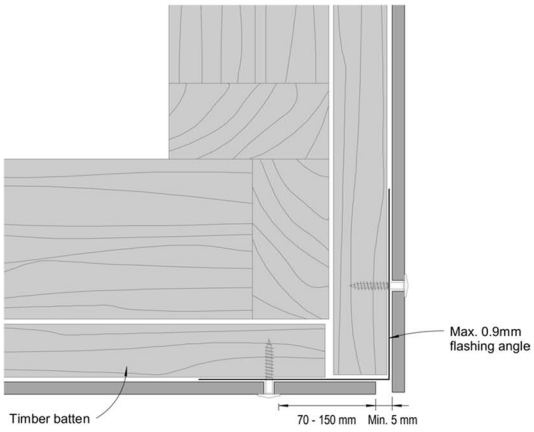


Figure 55: External corner
Plan view

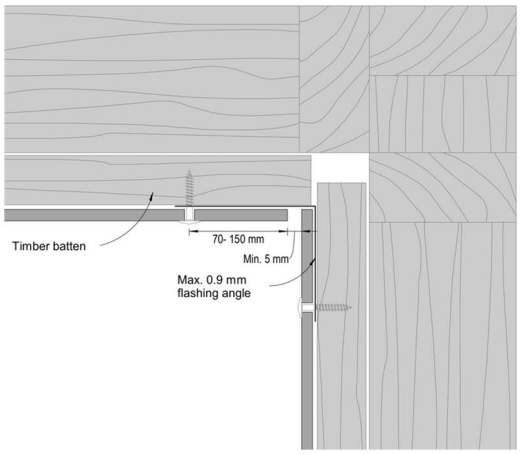


Figure 56: Internal corner
Plan view

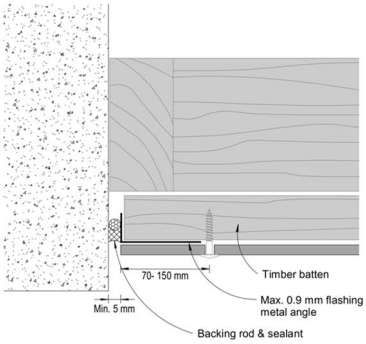


Figure 57: Abutment
Plan view

Panel installation sequence

Installation sequence

General notes

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

EQUITONE panels are a finished panel so due care is therefore required.

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

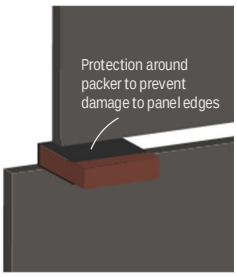
Corflute sheets or the like are generally used to protect the panels. These sheets are generally temporarily fixed to the support frame located at vertical panel joints. Do not use tape as it may leave residue on and stain the panels when it is removed.

Note: Avoid using tape on the panel finish as adhesive residue may be difficult or even impossible to remove, depending on the tape type and how long it remains on the panel. While low-tack tape poses less risk, it can still damage the panel finish when exposed to sunlight or leave residue on the surface.

Installing the panels from ground level upwards

For limited applications, sometimes it may be necessary to commence cladding from the base of the application. This can be done successfully but requires the installer to take extra care and attention to prevent damaging the edge of the panel. 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, removal of the joint spacers must be done with utmost care.

One suggestion is to use a spacer and wrap a 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.



Top-down installation method

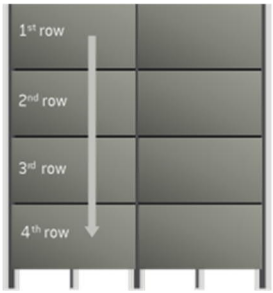
Experience has shown that the best sequence in placing the EQUITONE panels is to start at the top of the wall and work downwards.

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 slipping down the wall.

This method brings several benefits to the installer:

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



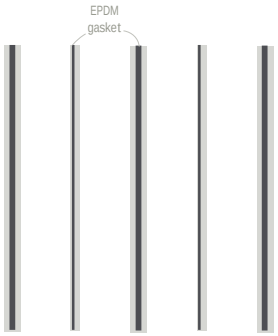
Panel installation sequence

Installation sequence (top-down method)
The following guidelines are equally applicable when using horizontal framing. The only difference is that the framing is oriented horizontally, but the same installation sequence and procedures apply.

1

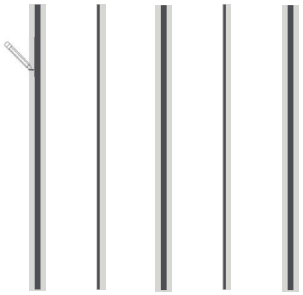
Ensure the support frame has been installed and set out correctly and is straight and plumb.

Apply the EPDM compressible gaskets onto the support frame profiles. This is optional with timber framing.



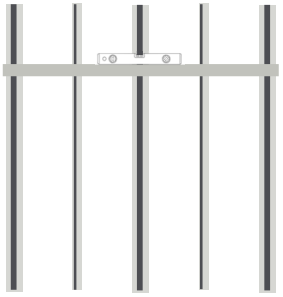
2

Starting at the top of the application, mark the bottom edge of the top panel on the supporting rails. Align this position-mark across the application.



3

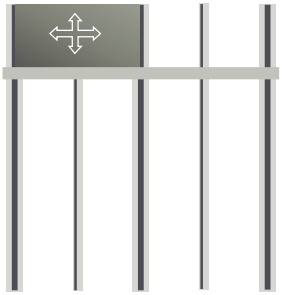
Temporarily apply a metal carrier (support angle) across the support frame profiles. This support angle will act as another workman and will carry the weight of the panel and allow easy adjustment prior to fixing. In addition, the support angle will provide a wide ledge to stop the panel sliding down the application before fixing.



4

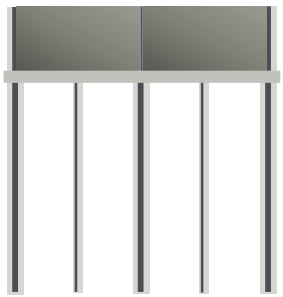
Lift the first panel onto this support angle and position into place. Securely hold the panel in position. Using a packer on the support angle will allow ease of minor adjustment. For larger adjustments, the support angle needs re-setting.

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



5

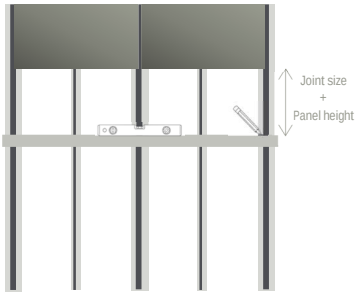
Lift and slide the next EQUITONE panel into place. Use spacers (5-12 mm) of a type not to cause damage when being removed, to give a constant vertical joint gap. Fix this panel as the first panel. Continue across the application, moving the support angle as the work progresses.



6

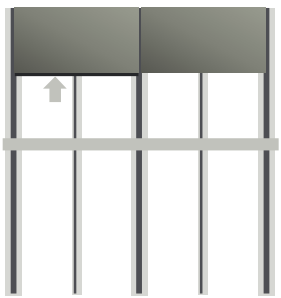
Now that the top row is in place remove the support angle.

Measure down from 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 +5-12 mm).
Then fix the temporary support angle in this position.



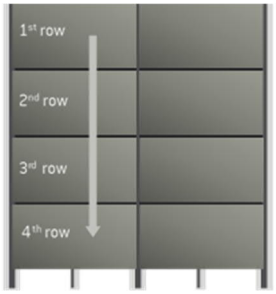
7

For baffled horizontal joint, cut the baffle to approx. 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 vertical edge with the edge above. Repeat the fixing sequence for the panel. Continue working across the application. The whole procedure is then repeated down the application of the building.



Engineering

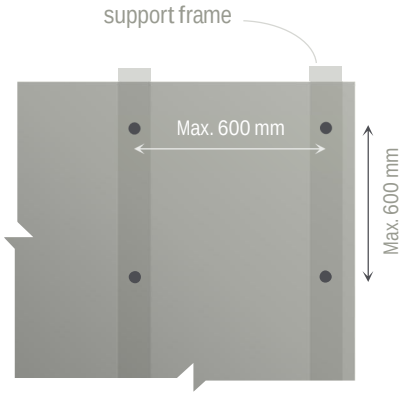
General information

The information provided in this section is based on the information received from an independent consultant who has been engaged to provide their opinion, engineering design and report based on independently conducted laboratory testing, technical data sheets of EQUITONE materials and components, relevant standards, and/or their experience.

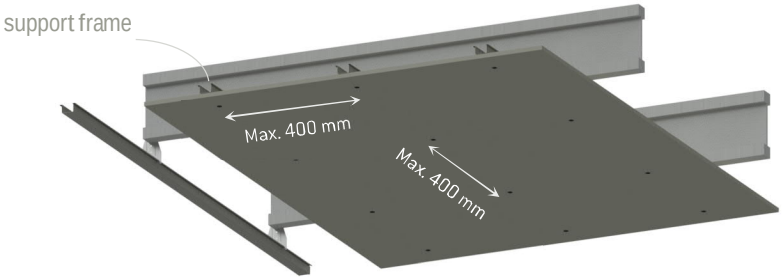
It is the responsibility of project consultants and engineers to ensure the provided information in this document is appropriate to the project and intended application. The overall performance of an installed EQUITONE or wall assembly is the responsibility of the project designer, architect, engineers and consults, builder and/or certifier.

Maximum spacing of panel fixings and support frame

Maximum spacing of panel fixings and framing for to internal applications with internal wind pressures up to 1.5 KPa are as follows:



Wall application



Ceiling application

Note: For higher internal wind pressures, consult the span tables provided in the Design and Installation Guide for external applications. Additionally, if an application is exposed to any external wind pressure, it is classified as an external application, and the span tables from the external application guide must be used.

Support frame

General information

EQUITONE may be installed onto engineered metal or timber support frame fixed to an appropriately designed substructure which could be a timber or metal stud frame (or the like), masonry, or concrete. Both support frame and substructure should be designed in accordance with the Building Code of Australia or New Zealand and applicable standards including but not limited to the following:

- AS 1684 – Residential timber-framed buildings
- AS/NZS 4600 – Cold-formed steel structures
- NZS 3604 – Timber framed buildings
- NZS 3404 – Steel structures

Maximum deflection of support frame must be limited to Span/250 or 4mm, whichever is lesser. For minimum support frame specifications, refer to pages 20-21 (for metal framing) or 35 (for timber framing).

For ceiling applications, EQUITONE panels can be installed on any engineered suspended or non-suspended framing system, provided it meets the minimum framing specifications outlined on these pages.

Design considerations

Application

EQUITONE may be used internally on all types of buildings provided that the wall is designed according to applicable project location, general guidelines provided in this document, applicable standards and regulations, and the Building Code of Australia or New Zealand as applicable.

For any project specific design and/or applications outside of the typical applications covered in this and other EQUITONE technical documents, seek further advice from your local EQUITONE technical team.

Limitations

EQUITONE is not recommended for the following applications:

- Internal applications exposed to direct moisture such as wet areas
- Contact with standing snow or ice
- Exposure to temperatures exceeding 80°C

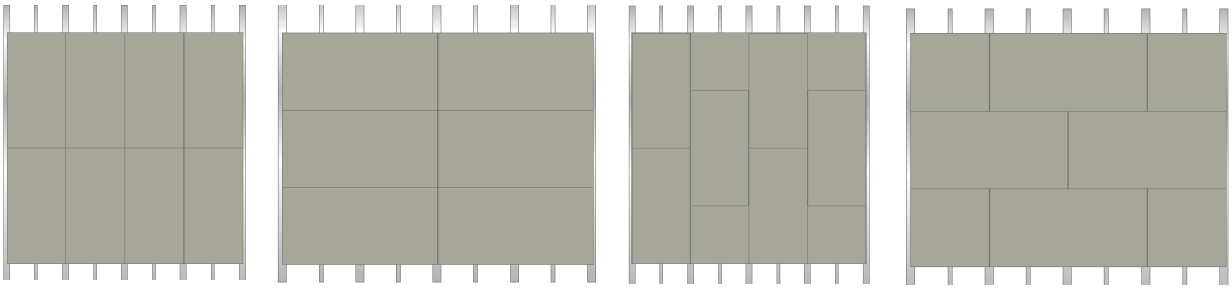
Guidance provided in this section is concise and highly dependent on the application type, with potential variations influenced by other factors. It is advised to seek assistance from local technical support for comprehensive review.

Panel layout

The application will be subjected to the actual panel layout desired by the Architect. The panel layout can have a significant influence on the amount of large or small framing profiles or number of studs needed.

For example, using the same size panel in a vertical pattern will result in a different supporting frame layout than if the panels were arranged horizontally. The vertical panel arrangement will use approximately a 50/50 split of large and small profiles while the same panel used with a horizontal arrangement will use only half as many large profiles and more small profiles. Therefore, reducing the cost of the support framing.

Other influences on the supporting frame layout include having staggered panel joints or total free patterns requiring different size panels in a random layout. This could result in having to use all large framing profiles or double stud framing.



Vertical layout
Aligned gid pattern

Horizontal layout
Aligned grid pattern

Vertical layout
Staggered grid pattern

Horizontal layout
Staggered grid pattern

Note: regardless of the type of panel layout, it is important to have a break in both the wall panelling and support frame at any control or movement joints.

Ceiling application

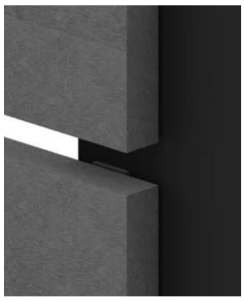
The information in this guide applies to both wall and ceiling applications unless otherwise specified.

Design considerations

Panel joints

Open joints

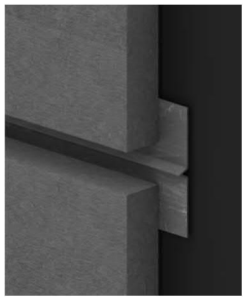
When opting to leave the horizontal joints open, take into account the colour selection of the support frame and any components situated behind the panels, as they might be visible through these openings. Concealing such components might be necessary, utilising suitable black or coloured profiles, paint, or tape.



Closed joints with baffle

When a joint is required to be closed, a metal joint profile (baffle) of maximum 0.9 mm thickness can be inserted behind panels.

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.



Baffle installation

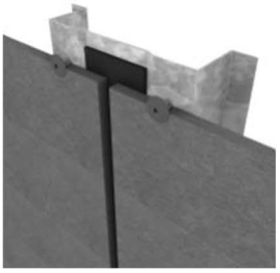
Cut the baffle approximately 4 mm shorter than the panel width or length so that it does not cross and become visible at the other crossing joints.

Slide the baffle under the panel. To prevent movement of the baffle, and exposing that movement at crossing joints, it may be fixed to one of the support frame profiles with a flat head screw sitting flush with the profile face.

Closed joints with support frame profile or flashing

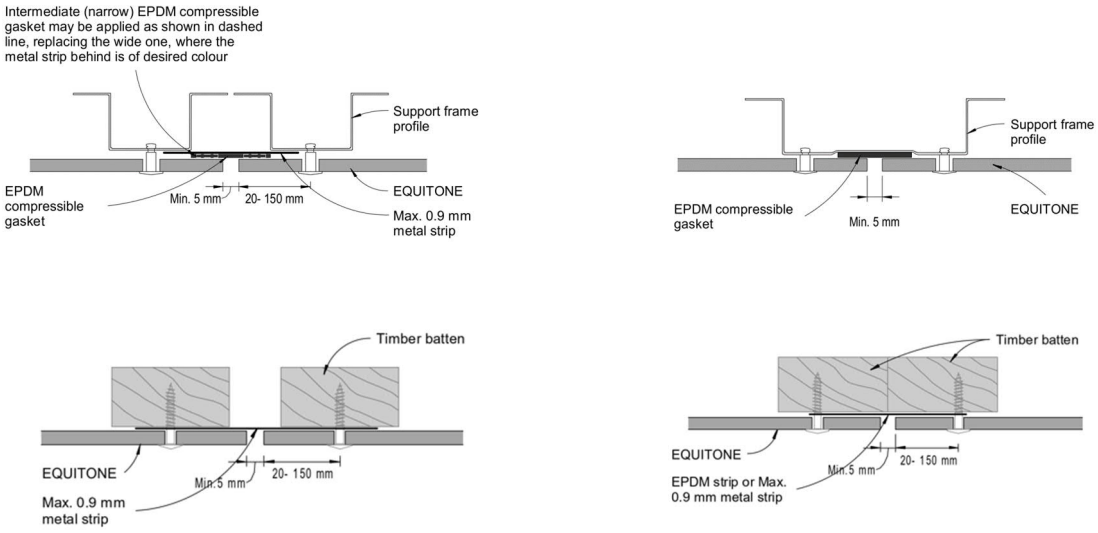
When the joints are backed with a continuous support frame, to create an expressed joint, the visible part of the framing can be painted to match the desired colour, or a coloured metal strip/flashing/baffle of a maximum thickness of 0.9 mm may be applied over the visible portion of the framing. Alternatively, an EPDM strip or gasket can be used on the framing for the same purpose.

Please note that with UNI Rivet and UNI Metal Screw systems, the recommended EPDM compressible gasket must be used between the panel and the framing, regardless of the option chosen to form an expressed joint. With these fixing systems, the recommended 40-48 mm wide EPDM compressible gasket is typically installed on the joint support frame profile. This gasket both serves as part of the fixing system and helps create the expressed joint.



Design considerations

The following are some typical details of panel joints closed with support framing or flashing.



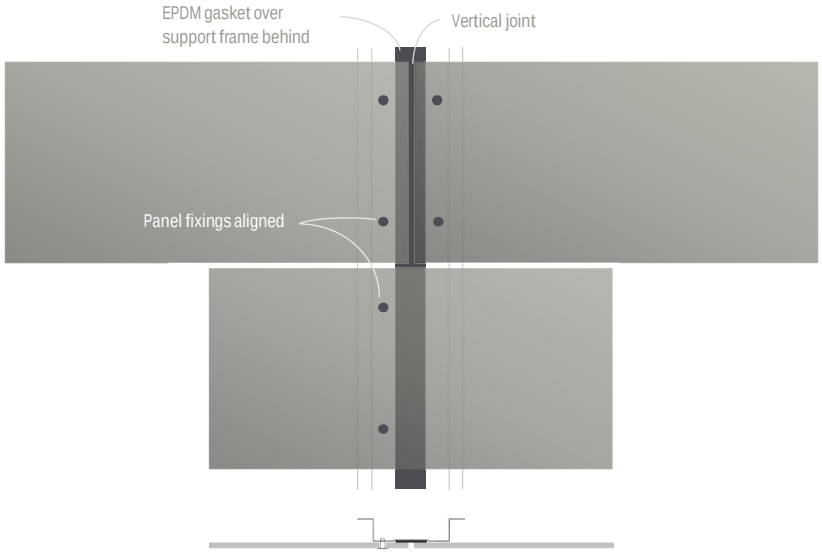
Typical joint width

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 frame and fitting the panel. If smaller joints are preferred, the width may be reduced to a recommended minimum of 5 mm.

For smaller joint sizes, please consult EQUITONE technical team.

Staggered vertical joint

With staggered joints, it is important to align the intermediate panel fixings with the edge fixings of one of the top/bottom panels if the support frame profile located at the joints has a recessed face. Panel fixings must not be positioned in the recessed part of the support frame profile.

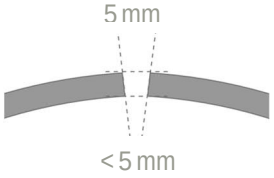


Design considerations

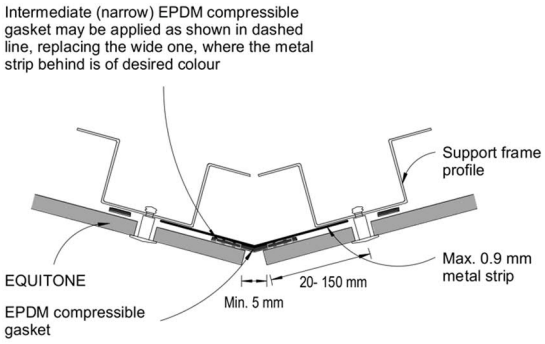
Curved walls

EQUITONE panels are flat. However, it is possible to ease them around a curved wall. Note that the orientation of the panel is also critical. A horizontal panel bends easier than one placed vertically. The minimum radius that an 8 mm EQUITONE panel can be fixed to a curved wall is 12 m.

When the panels are applied on a curved wall, 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 5 mm and allow the inner edge to be less than 5 mm. The opposite applies to an inner curving wall.



For smaller radiuses, the panel may be segmented into a series of narrow strips. Generally, two intermediate top hats are used in lieu of a wide joint top hat at vertical joints to prevent overstressing of the panel. The following is a typical vertical joint detail.



Fire safety

Australia

EQUITONE materials are classified as a 'Group 1' in accordance with AS 5637.1 and meets Specification C2D11, fire hazard properties, of the NCC 2022 Volume 1, and therefore may be safely used for internal lining and ceiling applications.

New Zealand

EQUITONE façade materials are classified as a 'Group 1-S' fire resistant material in accordance with the Verification Method C/VM2 (Appendix 'A') and ISO5660, and as such are safe and suitable for internal lining and ceiling applications.

Thermal performance & energy efficiency

The NCC and NZBC generally do not set specific thermal performance requirements for internal walls, as they are not typically part of the building's thermal envelope. However, if internal walls separate conditioned and unconditioned spaces, thermal performance must be considered. The project designer or engineer must ensure compliance with the NCC for Australia and NZBC for New Zealand when these partitions are involved.

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, 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.

Design considerations

High-traffic areas

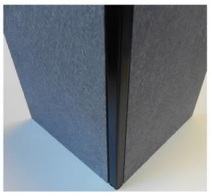
EQUITONE panels, being high-density material, can be used in high-traffic areas, incorporating certain design considerations is essential for best experience.

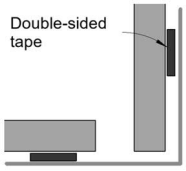
Impact risk mitigation

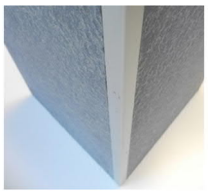
EQUITONE panels as high density fibre cement material typically offer strong impact resistance. However, in high-traffic areas or applications demanding higher impact resistance, such as sports facilities and transit hubs, closer spacing of the support frame may be required to reduce unsupported spans of the panels and better withstand impact. This may be achieved by introducing additional support frame profiles between the main ones to which the panels are fixed. These additional profiles are not used to fix the panel but rather to support it at midspan against any impact.

External corners in high-traffic areas

To protect the external corners in high-traffic areas, it's recommended to use custom-made metal corner trims fixed to support framing or adhered directly to the panels with suitable double-sided tape.







Mitred panel edges

Edges of the panels can be mitred, but this practice is not recommended for high-traffic areas, as it compromises the strength of the panel edges and increases the risk of chipping.

For mitred edges, both panels should be cut at an angle. To reduce fragility, the sharp edge should be slightly rounded with a 2 mm chamfer. The joint width (marked as 'x') should be between 5 mm and 10 mm.

Constructing a large-scale mock-up for the approval of all relevant parties is recommended. This mock-up should be assessed against the project's impact resistance requirements outlined by the consultants to verify its performance.

components which are either damaged or not aligned with the project requirements and specifications.

Stain & graffiti resistance

EQUITONE [tectiva], [lines] & [lunara]

For internal applications where panels are situated in high-traffic areas or in close proximity to the public, it's recommended to treat the surface of EQUITONE [tectiva], [lines] and [lunara] panels with a stain-resistant sealer, such as Mapei Antipluviol W or Crommeline Stain Repel. These sealers help enhance the stain resistance of the panels, reduce fingerprints, and minimise the need for frequent cleaning. It's important to note that applying any coating or sealer including these may slightly alter the appearance of the panels. Therefore, obtaining physical samples of treated panels for comparison with panels in the standard finish is recommended.

Design considerations

There are two types of sealers: penetrating sealers and surface film-forming products. Penetrating sealers typically preserve the panel's natural finish, while surface film-forming sealers can alter the panel's appearance to varying extents, such as giving it a glossy finish. The latter provides a higher level of stain resistance.

Please note that these third-party sealing products are not covered under EQUITONE product warranty. Any sealer must be applied as per its manufacturer's or supplier's recommendations and guidelines, and fall under their respective standard product warranty. Other third-party coating products may also be used upon approval of their manufacturer or supplier confirming compatibility and suitability with EQUITONE panels. The applied sealer must be vapour permeable to allow drying of any penetrating moisture in the panel.

For protection of EQUTIONE [tectiva], [lines] and [lunara] panels against graffiti, they 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.

EQUITONE [natura] Pro, [pictura] & [inspira]

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

Note: EQUITONE [natura] PRO, [pictura], and [inspira] are ideal material choices for high-traffic areas due to their premium factory applied anti-graffiti coating which offers enhanced cleanability and superior stain and abrasion resistance.

Highly-corrosive internal environment

In environments prone to high corrosion, like indoor hydrotherapy, swimming pool and spa facilities, specific design considerations are essential to ensure durability of the building products.

The overall design and maintenance plan of such facilities affects the durability of the building products used. Other factors like humidity levels, ventilation, temperature, chemical cleaning treatment (chlorine) and proximity of the pool to walls and ceilings also affect durability.

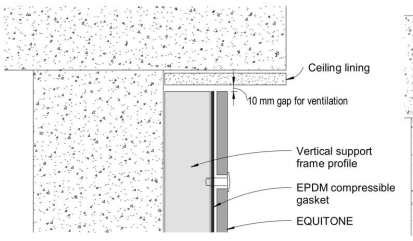
As such, individual site conditions may require specific control measures and therefore consultants such as HVAC specialists, corrosion experts and building physicists are recommended.

Application:

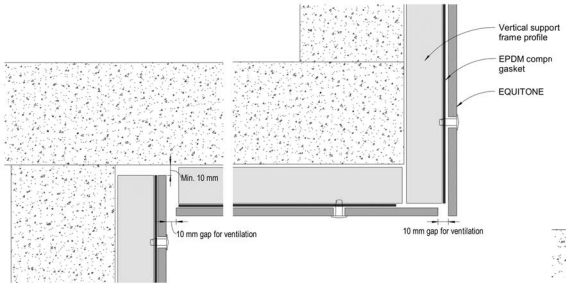
EQUITONE panels can be installed in indoor swimming pool and spa environments, provided they are positioned away from direct moisture and areas prone to frequent splashes of chlorinated water. This helps minimise the risk of moisture related issues such as water staining and efflorescence on the panels.

Ventilation:

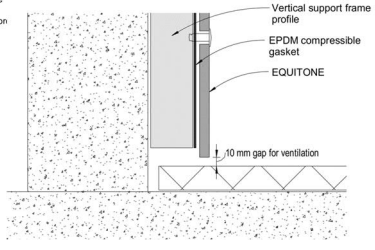
Proper ventilation is crucial in such environments. This includes maintaining a minimum cavity width of 20 mm and providing air inlet and outlet of at least 10 mm at top and bottom of the application to allow continuous air circulation behind the panels to help keep the panels and framing dry.



Ceiling junction – Detail 1



Ceiling junction – Detail 2



Floor junction

Design considerations

Controlling moisture level of such environments through natural or mechanical ventilation is strongly recommended to prolong the lifespan of metal components and prevent corrosion. Ventilation systems must continuously circulate air and be vented to the outside only. The ceiling plenum must not be used for return air.

A slight negative pressure must be maintained in the pool room relative to the wall and ceiling spaces. This reduces the driving force of moisture into the wall or ceiling cavity where the metal framing is located.

Fixing system

Panels can be secured with UNI-rivets or UNI-Metal Screw to suitable metal framing or with UNI Screw to suitable timber framing. Stainless Steel 304 UNI Rivets, UNI-Metal Screws, and UNI Screws are available with an added coastal and marine protective coating, offering extra protection in highly corrosive environments such as indoor swimming pools and spas. These fixings are also available in 316 Stainless Steel for higher corrosion resistance.

To minimise the risk of bimetallic corrosion when using a metal support frame in such applications, it's best to avoid dissimilar metals. For instance, it's recommended to use aluminium UNI Rivets with an aluminium support frame, or opt for stainless steel UNI Rivet or UNI-Metal Screws with a stainless steel support frame. If using dissimilar metals, it is crucial to verify the compatibility of the fixings and framing material with the project engineer or consult a corrosion specialist.

Framing

For a wall application, the framing to which the panels are fixed must be vertical and on non-vertical applications the framing orientation must be the same as the slope to facilitate air circulation in the cavity.

The supporting framing must have adequate corrosion resistance for this application. Typically, stainless steel, anodised aluminium, or powder-coated aluminium or metal framing is utilised. Consult a corrosion specialist to ensure suitability of a chosen framing system for such application.

When using timber framing, it must have an appropriate treatment level suitable for the specific environment. For such applications, the minimum treatment level typically recommended is H3 in Australia or H3.2 in New Zealand. Always consult your project engineer to confirm the appropriate treatment level for your project.

Metal trims, flashings and other metal components

Indoor swimming pool and spa environments are highly corrosive, so careful consideration must be given to the selection of all building materials, particularly metal components, to ensure they are suitable for these applications.

EQUITONE material specific considerations

EQUITONE [pictura] and [inspira]

With a hard, dirt-resistant surface finish, high abrasion resistance, and permanent, durable graffiti protection, [pictura] and [inspira] are ideal material selection for such applications. Additionally, there is no need to apply a sealer to the edges and penetrations of the panels.

EQUITONE [tectiva], [lines] and [lunara]

These panels must be treated with a clear water-repellent sealer, such as Mapei Antipluviol W, to avoid moisture-related issues such as maintenance problems, water staining, and efflorescence in such applications. It is important to keep in mind that applying any coating or sealer, including those mentioned, may slightly alter the appearance of the panels. it is advisable to obtain physical samples of treated panels for the approval of all project parties.

EQUITONE [natura] and [natura] PRO

Edges and penetrations of these panels must be treated with LUKO sealer as per the application guidelines. Compared to standard [natura], [natura] PRO offers a factory applied anti-graffiti coating with high stain and abrasion resistance which makes panel cleaning easier in such applications.

Maintenance & warranty

For further information about cleaning and maintenance refer to EQUITONE cleaning and maintenance documents.

For further warranty information and conditions refer to EQUITONE Product Warranty document.

Inspections

EQUITONE materials are low maintenance; however, it is recommended to regularly check the panels for any possible soiling and clean as required. Regular periodic inspections and maintenance are recommended to ensure the panels retain their 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 is recommended, so that imperfections can be discovered and resolved or repaired in good time. All ventilation and drainage gaps like those required for panels installed in areas where panels are likely to become wet, such as indoor swimming pools and spas, must always be kept unobstructed.

Cleaning

There are two methods of cleaning, mechanical cleaning and chemical cleaning. In principle, perform the cleaning of the panels over the entire wall or ceiling, because partial cleaning can result in colour and tonal imbalance. Normal stains can be removed with a sponge and water. 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.

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 rainwater drain) to check if the agent doesn't damage the surface. There is a risk that the panel colour coating may become cloudy.

Wall or ceiling 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 when fixing protective cover plastic foils.

Refer to EQUITONE cleaning and maintenance documents for detailed information and guidance on cleaning and maintenance of EQUITONE panels. Where cleaning of the panels is required, it should be conducted in accordance with EQUITONE cleaning and maintenance documents and the manufacturer's recommendations of the applied cleaning product or system.

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 colour coating may become cloudy.

Panel removal or replacement

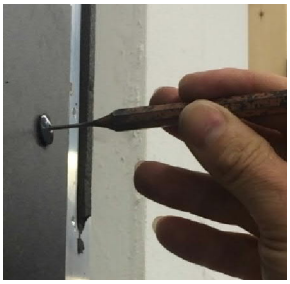
EQUITONE panels can be easily removed or replaced by following the procedures outlined below. If a replacement panel is needed, it must match the exact size and fixing hole locations of the original panel if you intend to reuse the existing rivet or screw holes in the support frame. However, it is strongly recommended to alter the arrangement of the fixings to avoid reusing these holes. Ensure adequate edge distance for the panel fixings.

Maintenance & warranty

Where possible, replacing the support frame profiles with new ones is recommended to avoid using the existing rivet or screw holes.

Panels fixed with UNI Rivet

For any panel removal or replacement, first place a pin-hole punch into the mandrel hole in the rivet head and knock out the pin from the rivet. This will fall out of the back of the rivet.



Then using a 4 mm drill bit, drill out the rivet head and mandrel. Do not oversize the hole in the metal support frame. Be careful to prevent drill bit slipping and scratching the panel surface. Once all the rivet heads have been removed, the panel can be gently removed.

Carefully remove the plastic rivet sleeves or spacers. Ensure during this process, the rivet holes in the frame are not oversized. Gently push any remaining part of the rivet through the hole to fall off the back of the support frame.

Panels fixed with UNI-Metal Screw

The UNI-Metal Screw can be unscrewed using a T25W bit. Insert the bit into the screw's Torx recess and begin unscrewing at a low speed. Hold the drill or impact driver at a slight angle to apply gentle, angled pressure on the screw, which will assist in unscrewing it.

Warranty

EQUITONE product warranty is 15 years in Australia. Refer to 'EQUITONE product warranty' document for further information.

Notes

Notes

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