EQUITONE

Fibre cement facade materials

INSTALLATION OF EQUITONE

General

EQUITONE panels are secured to the supporting frame in a number of ways. These can be simply categorised as visible and invisible. Visible fixing consists of fixing the panels to a metal support frame with UNI-rivets and to a timber support frame with UNI-screws. Invisible options are either adhesive glue or the mechanical fixing solution.

Visible UNI-rivet Fasteners

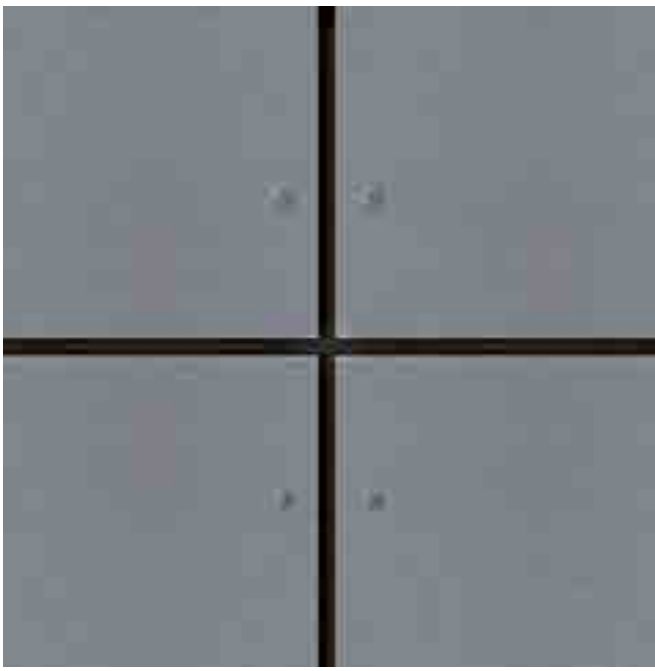
The UNI-rivets have colour matched heads to blend in with the panel. Aluminium UNI-rivets can only be used with an aluminium supporting frame. Stainless steel UNI-rivets can be used with, aluminium, galvanised or stainless steel supporting frames.

The procedure for fixing all EQUITONE panels is very similar. The panel must be pre-drilled with the same size hole to allow for rivet fixing. Each panel has two fixed points. The two fixed points are formed by using the UNI-rivet sleeves to fill the oversized hole.

A centralising tool is used to drill the rivet hole in the supporting frame.

The centres for the rest of the fixings are determined based on the engineers wind load calculations.

Important note: Aluminium UNI-rivets must not be used with galvanised profiles due to the risk of bi-metallic corrosion. This all ensures that the panel is accurately fixed into position while making certain that the panel is stress-free.



Visible Screw Fasteners

EQUITONE panels can be easily screw fixed to a timber batten supporting frame. Ensure that all timber battens are covered with either an EPDM or aluminium cover strip. The batten must be adequately sized so that the screw is a minimum of 15mm in from the edge.

EQUITONE Stainless Steel T 20 torx screws are available with the heads coloured to match the panels.

The minimum screw depth of 25mm into the timber is recommended.

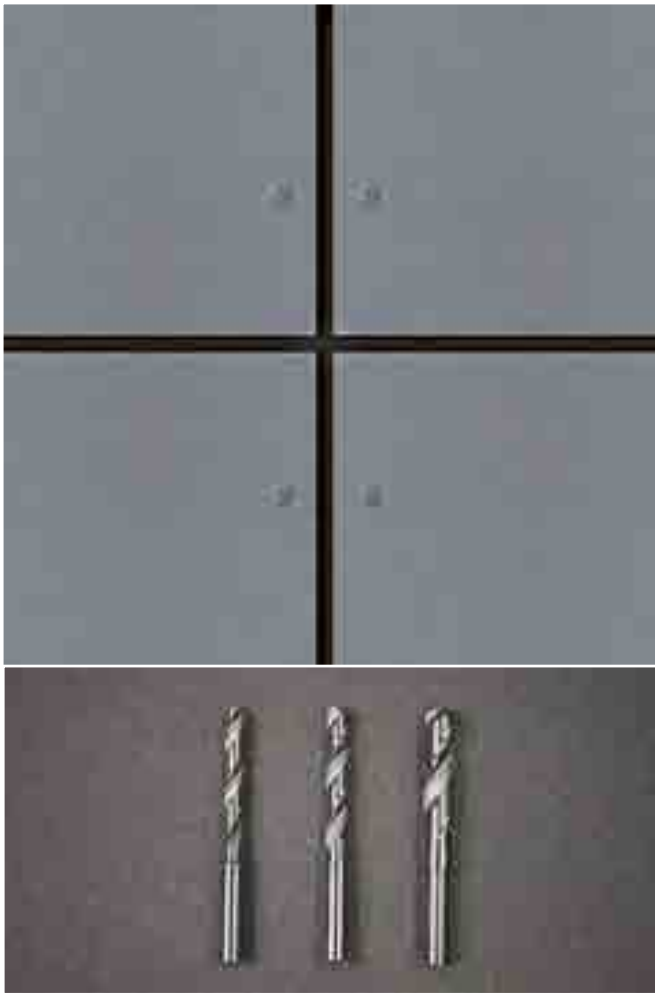
Preparation of EQUITONE Panels

Carefully mark the position of the holes on the face of the panel. Drill all holes with an EQUITONE drill bit.

Panels are to be drilled prior to lifting into place on the facade. A corner metal template can be employed to speed up drilling. This can be made-up on site.
All drilling is best done on a solid workbench. Do not drill multiple panels together. Drill one at a time to ensure accurate positioning of the holes.

Immediately clean all dust and pencil marks from the panel.

All fasteners must be inserted perpendicular to the panel surface, and must not be over tightened to impede the free movement of the panel.



RIVET FIXING

Fixed/Stop point – Sliding/Go point – Rivet Fixed

Where panels are fastened to the supporting frame with a combination of fixed/stop and sliding/go points, each panel no matter what size will have 2 fixed/stop points and the rest left as sliding/go points.

The 2 fixed/stop points support the weight of the panel and ensure the panel stays in position and prevents rotation of the panel. The sliding/go points resist the wind loading, while accommodating any panel or support frame movement.

The choice of where the fixed/stop points are to be is important to prevent any risk of the panel cracking.

Selection of Fixed/Stop Point

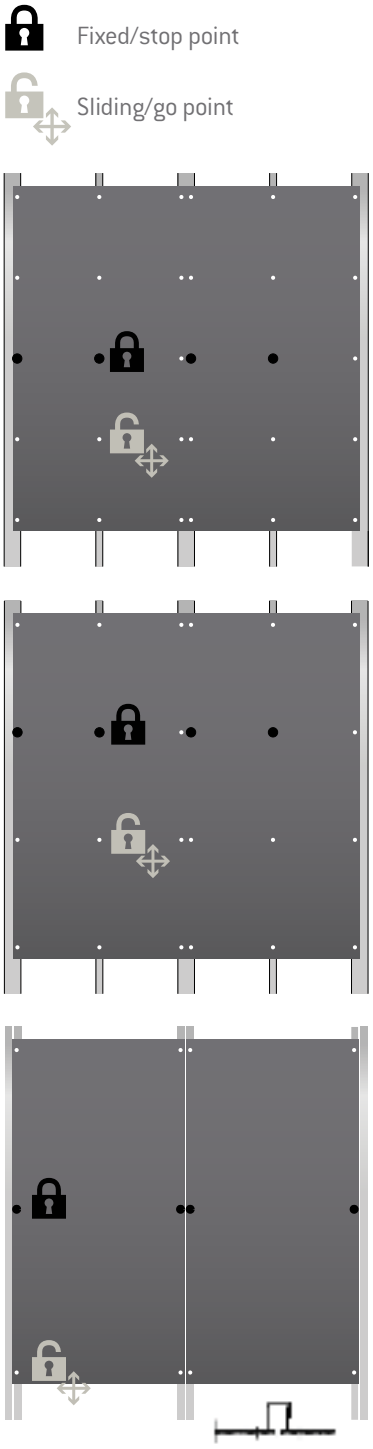
The two fixed/stop points should never occur on the same profile. The two fixed/stop points must be located near the horizontal centre line of the panel. If there is no central fixing then use the next row closest to the centre line.

This means that two profiles are needed. This is straight forward where there are at least two profiles in the middle area of the panel.

More commonly, there is only one profile in the middle area of the panel. Here, the rule-of-thumb is that the fixed/stop points are located to the centre of the panel and to the left joint profile. Alternatively they can be located to the centre and right joint profile. Whichever one is used all panels must be the same.

It should never be allowed that the fixed/stop point of two adjoining panels occur on the same joint profile.

In situations where narrow panels with only two side fixings are used and the fixed/stop points of adjacent panels will be next to each other, the support frame will need to be amended. The metal support frame behind the vertical joint which is usually a T profile will have to be substituted with two L profiles. This will separate any panel connection. This may also result in having a "U" bracket instead of the normal angle bracket.



EQUITONE may be face fixed to metal supporting frame using the EQUITONE UNI-rivet. The UNI-rivets have colour matched heads to blend in with the panel. Aluminium UNI-rivets can only be used with aluminium supporting frame. Stainless steel UNI-rivets can be used with, aluminium, galvanised or stainless steel supporting frames.

Procedure

The procedure for fixing all EQUITONE panels is the same. The panel must be pre drilled with an 11mm diameter size hole to allow for rivet fixing.

Each panel has two fixed/stop points. The two fixed/stop points are formed by using the red UNI-rivet sleeves to fill the oversized hole. No red sleeve is used for the sliding/go holes. A centralising tool is used to drive the rivet hole in the supporting frame. A UNI-rivet setting tool which fits to the end of the rivet gun can be used to prevent scratching the rivet head and ensure the correct placement of the UNI-rivet.

Hole position

The position of the holes is as follows.

- From the horizontal edges of the panel the dimension is 70mm -> 100mm.
- From the side edges of the panel the dimension is 30mm -> 100mm.

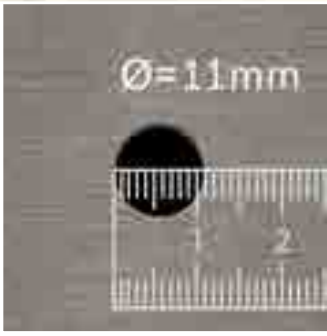
Placing the corner UNI-rivets 80mm from the horizontal edge 30mm from the vertical edges visually is the preferred location.

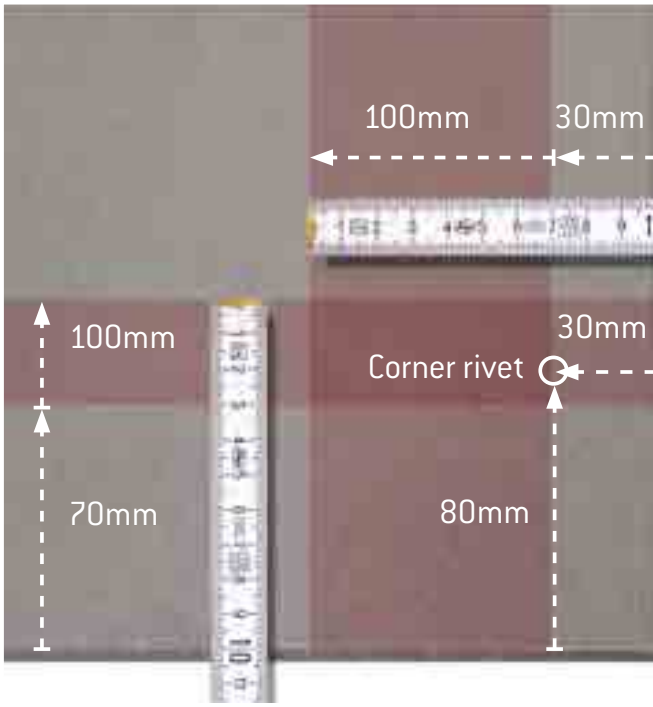
The centres for the rest of the fixings are determined based on the engineers wind load calculations.

Important note: Aluminium UNI-rivets must not be used with galvanised profiles due to the risk of bi-metallic corrosion. This ensures that the panel is accurately fixed into position while making certain that the panel is stress-free.


EQUITONE UNI-rivet


EQUITONE UNI-rivet RED STOP point sleeve





Installation procedure

Place the foam tape onto the support frame metal profiles.

Position the pre drilled panel on a support rail and against the support frame, adjust to correct line and clamp into place. Starting with the red Fixed/Stop points, insert 4.1mm centralising tool into the holes and drill through support frame profiles, Remove all debris.

Red stop points – (Fixed/Stop points)
Place the EQUITONE UNI-rivet into its red rivet sleeve collar (hole reducer) and place into rivet gun. Insert UNI-rivet with rivet sleeve collar (hole reducer) into pre drilled hole and pop the rivet. The UNI-rivet must lie flat on the facade panel.

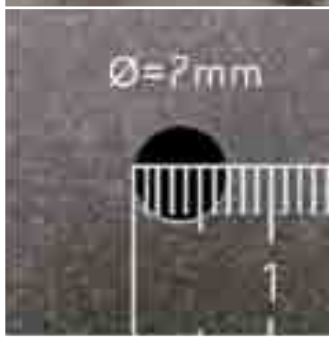
Green go points – (Sliding/Go points)
Continue with the Sliding/Go points, insert 4.1mm centralising tool into the holes and rill through support frame profiles. Remove any debris.

Insert only the EQUITONE UNI-rivet into the rivet gun and place into the pre drilled hole and pop the rivet. The UNI-rivet must lie flat on the facade panel. Fix Sliding/Go points after Fixed/ Stop points are completed.

SCREW FASTENERS TO WOOD

UNI-screw
EQUITONE UNI-screws for wood are A2 (304) stainless steel ISR T20 hex socket cap screw with a 15mm diameter head. The head of the UNI-screw is available coloured to match the panels.
An uncoated UNI-screw is also available.

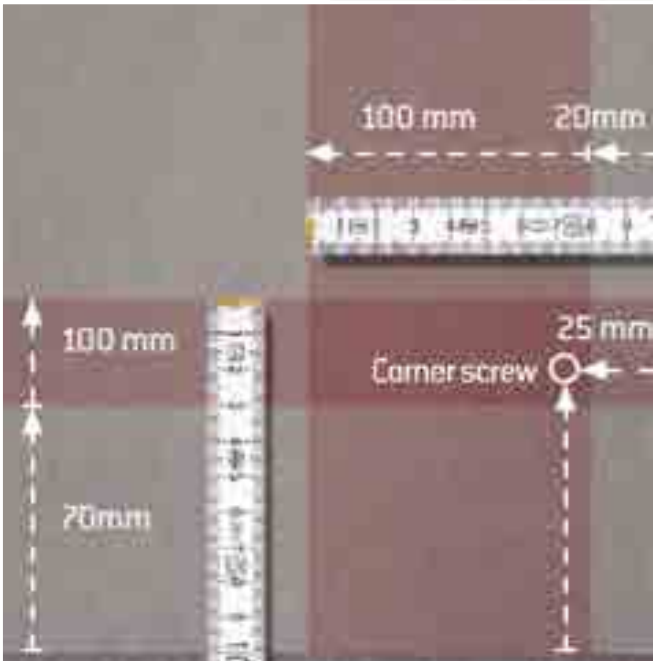
- 5.5 x 35mm for 8mm facade panels
- 5.5 x 45mm for 12mm facade panels.



Procedure
EQUITONE can be easily screw fixed to a timber batten supporting frame. Ensure that all timber battens are covered with an EPDM cover strip. The EPDM must overhang each side of the batten by a minimum of 5mm. The batten must be adequately sized to meet local regulations paying attention to the minimum distance requirement between the screw and the batten edge. Check local recommendations for the minimum screw depth into the timer.
Drill the panel with 7mm diameter holes.

Hole Position
The position of the holes is as follows:

- From the horizontal edges of the panel the dimension is 70mm -> 100mm.
- From the side edges of the panel the dimension is 25mm ->100mm.



Placing the corner screws 80mm from the horizontal edge 25mm from the vertical edges visually is the preferred location.

Centres for the rest of the fixings are determined based on the engineers wind load calculations.

This all ensures that the panel is accurately fixed into position while making certain that the panel is stress-free.

VISIBLE RIVET FIXING EQUITONE [linea]*

POSITION OF FIXING POINTS

For technical reasons the fasteners have to be aligned with the deeper part of the grooved surface. Therefore the ribs at the location of the fasteners have to be milled first. To mill the ribs a special drill/milling tool is used. The tool is equipped with a drill in order to drill and mill the hole in one movement. The milling tool comes in different versions depending on the drill diameter.

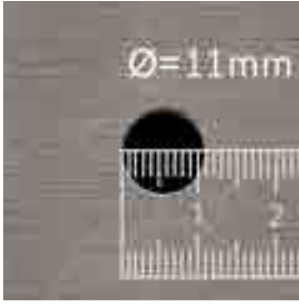
From an aesthetic point of view it is recommended to align the fixing points with the ribs of the panel. Doing so, the head of the fasteners are the least visible. This will result in a wider support up to 140 mm.

Other positions of the fixings as described above are also possible and supported.

* The fixings Etex supply to secure our facade panels, along with Fischer's Tergo+ Undercut Anchors used to mechanical secret fix our EQUITONE [linea] and [tectiva] panels, have been developed and produced in conjunction with our facade materials to be of the highest quality for the longevity and durability of both the panels and fixings.

  Any facade panel not secured with either Etex fixings or Fischer's Tergo+ Undercut Anchors is deemed to be not installed in accordance with Etex recommendations and in the event of a material failure, Etex would not be responsible for any claim or material cost arising from incorrect use of fixings.

  For further information, please contact our Technical Advisory Team on Email: techuk@etexgroup.com








Visible Screw Fixing EQUITONE [natura], [materia], [pictura] and [textura]*

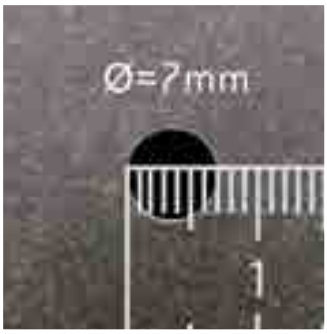
Ensure the EPDM is located on the support frame timber profiles.

Drill all holes in the panel with 7mm diameter bit.

Position the panel on the support rail and against the supporting frame, adjust to correct line and clamp into place.

The screw collar should be inserted into all holes before screw fixing - only for EQUITONE [pictura] and Pro coated [natura]. This collar offers extra protection to the PU top coat to prevent peeling.

Starting with the central holes and working outwards proceed to screw fix the panel.



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VISIBLE SCREW FIXING EQUITONE [linea]*

POSITION OF FIXING POINTS

For technical reasons the fasteners have to be aligned with the deeper part of the grooved surface. Therefore the ribs at the location of the fasteners have to be milled first. To mill the ribs a special drill/milling tool is used. The tool is equipped with a drill in order to drill andmill the hole in one movement. The milling tool comes in different versions depending on the drill diameter.

From an aesthetic point of view it is recommended to align the fixing points with the ribs of the panel. Doing so, the head of the fasteners are the least visible. This will result in a wider support up to 140 mm.

Other positions of the fixings as described above are also possible and supported.

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For further information, please contact our Technical Advisory Team on Email: techuk@etexgroup.com

Glue Fixing

It is important that Glue Fixing is carried out in strict accordance with the glue suppliers instructions by certified installers. Please note that recommendations and fixing procedures differ between suppliers. The following information is given only as a guideline and must not be taken as a complete recommendation.

For information on our recommended adhesive partners, please contact our Technical Advisory Team on Email: techuk@etexgroup.com

Please note that not all glue systems are suitable for all panels on all support frame options. Therefore, it is important to choose the correct glue for the application.

As there are many suppliers of glue, we would always advise that the installer only works with certified products, which have been tested with EQUITONE panels.

The maximum height can be restricted by the conditions of the supplier of the glue or by local regulation legislation.

All suppliers will have their conditions or restrictions for working on site. These may be:

- Recommended range of working temperature – Example: +5° and + 35°C. This must remain within these values for at least 5-6 hours after application.
- The surfaces to be bonded must be clean, dry, and free from dust and grease. The use of cleaners will be needed.
- Restrictions on the Relative humidity – Example: not to be higher than 75%
- The substrate temperature must be 3°C higher than the dew point.

Requirements

The deflection of any cladding panel may not exceed 1/100 of the span of the EQUITONE panel between supports plus any overhang or cantilever, if there is one.

Cleaning

Any unwanted or excess adhesive left on the profiles must be removed immediately using the suppliers cleaning agent, as it can only be removed mechanically if left until later.

Consult the glue supplier if adhesive or primer is left on the surface of any panel.

Application*

It is important to note that all suppliers have their own recommendations and requirements when it comes to cleaners, primers and the drying times between each stage. The following steps are indicative of what needs to be done. These can change from supplier to supplier.

Clean the supporting frame with the recommended cleaner. It is important that all metal profiles are degreased. Allow the cleaner to dry.

Apply the recommended support frame primer. Please note that there could be a different primer depending on frame material.

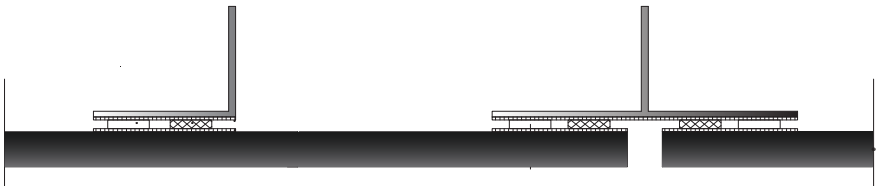
Some suppliers advise that any back-coating on the panel is removed with a light sanding where the primer and glue will be in contact with the panel. Clean the sanded areas of the panel with the appropriate cleaner. Allow to dry. Apply a primer as recommended by the supplier. Allow to dry.

Apply the double sided tape to the support frame. The tape acts as a temporary support to hold the panel in place to allow the glue to cure. It also ensures the correct depth of adhesive is used.

Apply the glue as directed by the supplier. Note that most suppliers provide a special nozzle for applying the correct amount and shape of glue to the frame. Normally a V-shape is used as this prevents air bubbles being trapped and any unnecessary loss of adhesion.

After the prescribed drying time of the cleaner and primer has lapsed, the facade panel can be applied. Remove the protective layer from the tape.

Place the panel within the prescribed time before the glue starts to cure, normally 10 minutes. Press the rear of the panel gently against the adhesive to enable minor adjustment. Press the panel firmly against the adhesive when it is correctly positioned, so that the facade panel makes good contact with the tape.



* Refer to the individual glue suppliers installation literature for details.

Mechanical Secret Fix – EQUITONE [natura], [textura], [pictura] and [materia]

Tergo is a system for secret fixing 12mm EQUITONE panels to aluminium supporting frames. The panels have factory drilled undercut fastener holes in the back of the panel. Hanging hooks are attached to the panel with undercut bolts and washers.

The suppliers of the aluminium supporting frame will provide the necessary static calculations required to position these undercut holes. They also confirm the length and position of the hanging hooks.

Suppliers

The undercut bolt system was developed by Keil and only the Marley Eternit Keil anchor should be used.

Panel Preparation

The panels are pre-drilled in the factories to the design confirmed by the design engineer or the supporting frame supplier. A special shape hole is drilled into the rear of the panel without passing through to the front face. The hole is wider in the middle of the panel than at the rear surface.

A minimum of 50mm should be left to all edges of the panel.

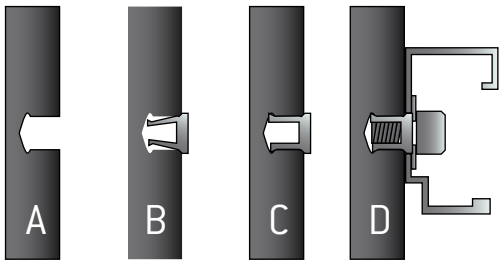
Should drilling be required on site then portable drilling machines and drill bits are available. Callipers and depth gauges are used to check and confirm the correct hole is drilled.

If a hole is incorrectly positioned then leave a space to the new hole of at least 20mm.

It is recommended to impregnate the holes of any site drilling with Luko, applied with a small brush - only for EQUITONE [natura] and Pro coated [natura].

Assembly

Once the panels have been delivered to site the assembly of the Tergo system can begin. Ensure the holes are clean and free from any dust or debris (A).

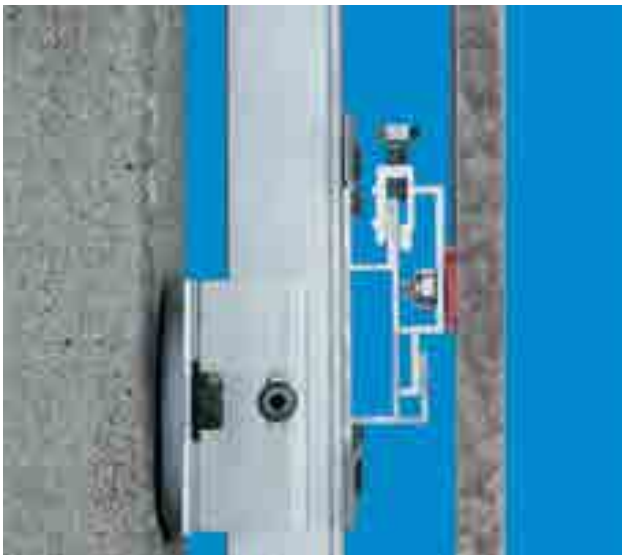


For the bolt system, the anchor is inserted into the hole (B). Place the hanging hook, washer and bolt together and insert into the anchor. As the bolt tightens the anchor expands and locks into place (C). Be careful not to over tighten the bolt as this can damage the anchor and reduce the pull-out resistance of the fastening.

Mechanical Secret Fix – EQUITONE [linea] and [tectiva]

Tergo^{+} is a system for secret fixing 8mm EQUITONE [linea] and [tectiva] panels to aluminium supporting frames. The panels have factory drilled undercut fastener holes in the back of the panel.

The suppliers of the aluminium supporting frame will provide the necessary static calculations required to position these undercut holes. They also confirm the length and position of the hanging hooks.



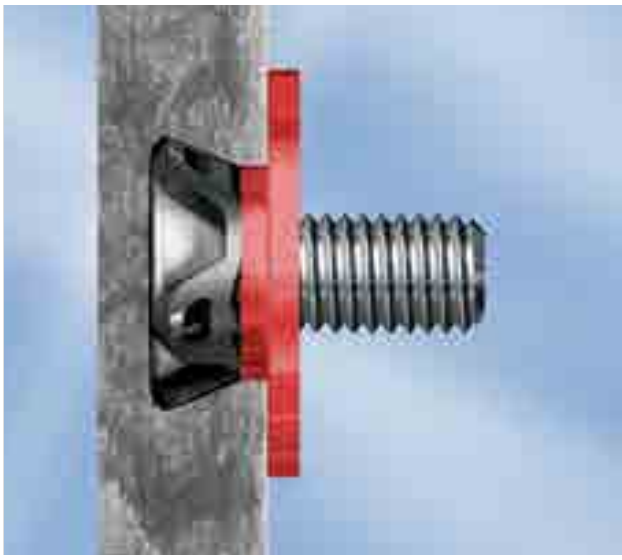
Suppliers

The Tergo^{+} undercut bolt system has been developed by Fischer.

Panel Preparation and Assembly

For all panel prepartation and assembly information, please contact the fixing system manufacturer directly.

Fischer
Tel: 01491 827900
Email: info@fischer.co.uk
Web: www.fischer.co.uk



Sequence for Installing the Panels

A sequence or method of placing the EQUITONE panels on the facade must be put in place to ensure the risk of damage to the panels is minimised. EQUITONE panels are a finished facade product and are generally the last major cladding material to be fitted. Care and attention is required should other trades (painting or rendering) need to follow on after the panel is fitted. The panels must then be protected. Stains from coloured renders can be difficult to remove and with some colours replacement of the panels is the only remedy.

The Installer needs to survey the main supporting structure, checking line, level and fixing points. Report any discrepancies immediately to the Main Contractor/Architect, if the structure will not allow the required accuracy or security of erection. Set out the datum points, lines and levels for a complete elevation at the same time.

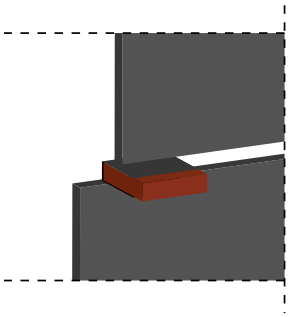
Refer to the Architect's elevation drawings for layout of joints and line of fasteners. Note the relationship between the fixings and openings such as windows.

Experience has shown that the best sequence in placing the EQUITONE panels that will have visible fasteners is to commence at the top of the facade and work downwards. This procedure of installing the panels top-down is also the preferred method for glue fixing systems.

Due to the nature of the Tergo secret fixing system it is recommended that the panels are installed from the ground upwards. The panels are supported individually and do not rest on one another, therefore not causing any damage to the panel edges. It is also not practical to adjust and lock the Tergo hangers unless the installer is working from above the panel.

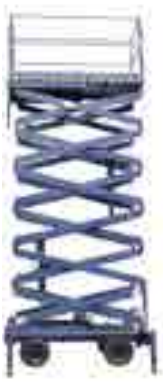
Special installation situation

For limited applications, sometimes it may be necessary to commence cladding from the base of the facade. 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 an 8mm spacer and wrap a 1mm 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.



Mobile Elevated Working Platform

Should the panels need to be fixed from a Mobile Elevated Working Platform (MEWP) then the panels can be installed in a vertical stacked sequence.



Commence in the same fashion as above at the top of the facade. Mark the position of the bottom edge of the top panel and support the panel on a temporary short horizontal rail. Proceed down the facade and not across. A vertical rail clamped to the joint profile can help in maintaining a straight vertical line as work proceeds down the facade. Once the first column of panels is in place, simply move the MEWP to its next position and commence again at the top of the facade. This time allow for the vertical joint in the measurement to the next panel edge.

Top-Down Installation Method

Starting at the top of the facade, mark the bottom edge of the top panel on the profiles. Line this position-mark across the facade. Temporarily clamp a metal support rail across the profiles. This support rail will act as another workman and will carry the weight of the panel and allow easy adjustment prior to fixing. Lift the first panel on to this rail and position into place. Securely hold or temporary clamp the panel in position.

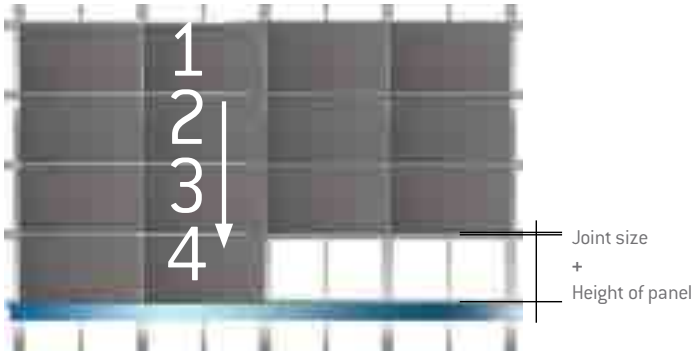
Always fix the central fixed points or middle points first to hold the panel in place, and then radiate outwards towards the edges with the other fasteners. Remember, if a horizontal joint profile is to be used, do not fix the bottom row of fasteners at this stage.

Lift and slide the next EQUITONE panel into place. Use spacers (10mm) of a type not to cause damage when being removed, to give a constant vertical joint gap. Fix this panel as the first panel. Then continue across the facade moving the support rail as the work progresses. Now the top row is in place. Remove the support rail.

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 +10mm).

Using this new level, temporarily fix the metal support rail across the profiles again. This is the time to insert the horizontal joint profile. Slide the profile into place and then fix the missing fasteners in the panel above. These will hold the profile in place.

Then lift the first panel of this row on to this rail 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 facade. The whole procedure is then repeated down the facade of the building.



The facade scaffolding can also be stripped down as the cladding proceeds. This ensures no future damage will occur from other trades.

Position any trim profiles and any flashings as work proceeds. Ensure all movement joints are correctly formed. Repair any panel damage or defects as quickly as possible.