

EQUITONE [materia] Installation Guidelines

The information contained below is in addition to the information contained in the EQUITONE Planning and Application Guideline.

1.0 General

EQUITONE [materia] is unique in the world of fibre cement, in that it is an uncoated panel with a special mechanical surface treatment which protects against visual efflorescence. Nevertheless, the panel will have an increased risk of efflorescence (*). Therefore extra care and attention is needed for its storage and installation. Extra procedures are recommended to help reduce this risk of efflorescence forming on the surface.

2.0 Design Considerations

We strongly recommend the following advice is followed.

- **Prevent concentrated flow of water on a specific area on the surface of the panel by following the design details in this guideline**
- **Protect the top of the panels during installation process**
- **Leave all horizontal joints open**
- **Increase the distance to the Ground level to prevent splash back**
- **Perforations through the panel should prevent water resting on the panel**

3.0 Panel Preparation

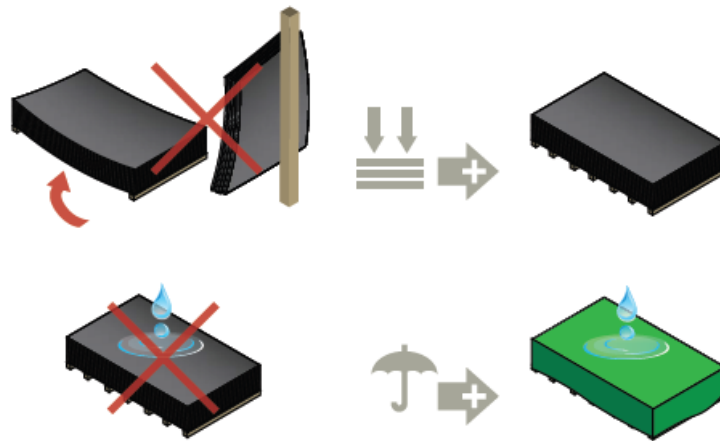
3.1 Storage

All panel materials must be stored flat on a pallet, inside and undercover in dry conditions, protected from weather both rain and sun as well as other trades. Stack the pallets in a way so that the panels are ventilated. If condensation or moisture is allowed to penetrate between the stored sheets, permanent surface staining in the form of efflorescence will occur. The outer plastic protection may cause condensation if it is not ventilated.

Do not deliver any panels to site which cannot be installed immediately or unloaded into a suitable well protected storage area. Store products clear of the ground and on level bearers at a maximum of 600mm centres. Individual stacks can be 240mm high, and not more than 5 stacks can be put on top of one another.

EQUITONE [materia] panels are supplied with protective paper or foil between the decorated faces. This protection should not be removed. Stack the panel's front face-to-front face or rear surface-to-rear surface.

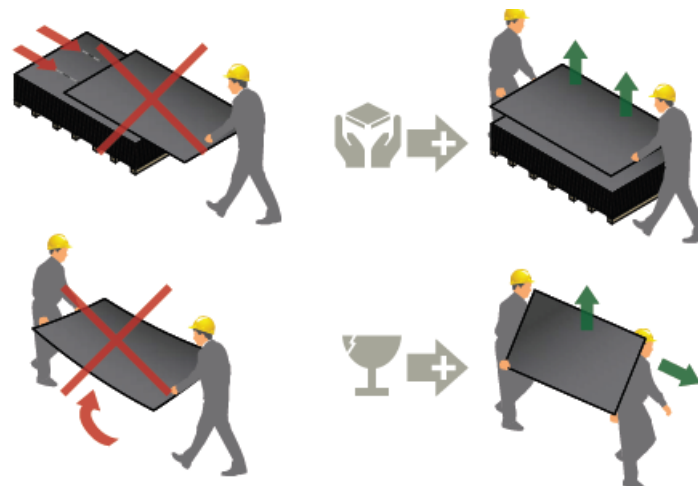
(*) As EQUITONE [materia] is a natural product. Differences in colour, structure and texture are surface characteristics. Efflorescence or small, visible inclusions are not defects. Differences in the surface appearance, which do not affect the fitness for purpose of the panels, are permitted under EN12467.



3.2 Handling

Always lift panels off each other, never slide them over one another, since scratching may occur. To carry the panels, stand them on their back edge and lift with two people (one person at each end) protecting the face from scratching or damage. Always lean panel towards back edge to avoid damaging visible front edge.

Use soft bearers (carpet, foam etc) to rest the panel edge on, especially on scaffold or access lifts or any surface which will damage the panel edge.



Use clean textile gloves when handling the panels to help prevent staining



3.3 Panel Drilling

Panels should be drilled carefully using the EQUITONE fibre cement drill bits.

When drilling a panel it is advisable to place it on a solid workbench indoors or under cover. At no time should drilling the panel be carried out in the rain. This will reduce the risk of staining. Only one panel should be drilled at a time. Do not drill multiple panels at the same time. Turn off the hammer-action function on the drill.

Immediately after drilling clean off all dust preferably with pressured air.



3.4 Panel Cutting

Where possible, off-site pre-cutting of the panels should be carried out. In situations where this is not possible, then on-site cutting can be done.

It is strongly recommended that EQUITONE saw blades are used to cut the panels on site.

The blade should be set to extend approximately 5mm below the panel to allow the debris material to escape.

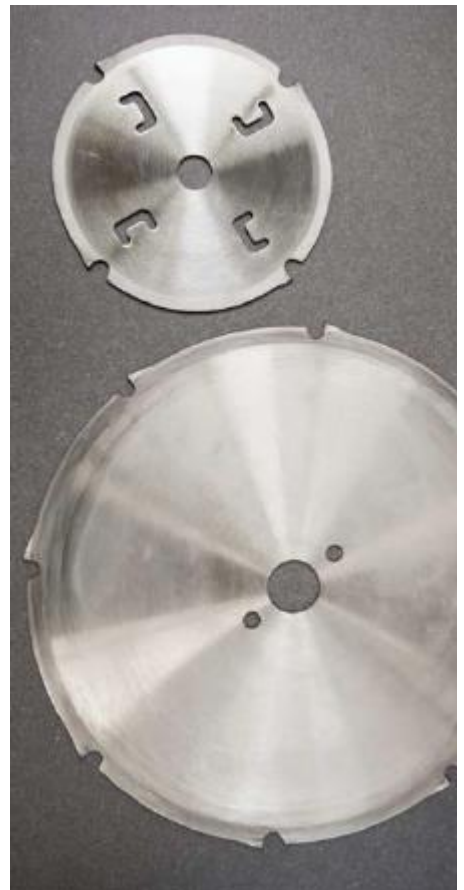
Many saws are available to cut EQUITONE. The main criteria:

- Saw with blade speed of between 2000-4000 rpm
- Guide rail to keep saw straight and steady
- Enclosed blade with a vacuum system to remove all dust
- Saw with correct bore size to suit the blade.

When cutting a panel it is advisable to place it on a solid workbench indoors or under cover. At no time should cutting the panel be carried out in the rain. This will reduce the risk of staining. Only one panel should be cut at a time. Do not cut multiple panels at the same time.

Panels to be cut face down.

Immediately after cutting clean off all dust preferably with pressured air.



3.5 Curved cut-outs

For cut outs or curved cuts a jigsaw using a Bosch T141HM jigsaw blade can be used. The jigsaw pendulum function is to be switched off.

The panel is also cut face down.



WARNING

Poorly maintained cutting tools or incorrect saw speed as opposed to blade speed can result in localised heating/burning of the panel edges.

Do not use grinder tools as they have a high cutting speed, which produces a higher than average pressure on the edges of the panels. They also produce excessive dust.

3.6 Edge Treatment

No edge treatment is needed.

However, it is advisable to sand the edges of panels after cutting them to size. This reduces the possibility of damage and improves their appearance. A block of wood, approx. 400mm x 100mm in size, with a piece of sandpaper (80-grit) affixed to it can be used to sand the edges.



3.7 Cleaning of New Panels

Cutting or drilling dust contains cement and that can permanently stain the surface of the panels if allowed to dry in. When dry, remove all dust with vacuum system or compressed air duster gun or blower.

It is strongly recommended that the panel is not drilled when placed on the façade as the dust will spread over large areas.

The finished ventilated facade areas should be cleaned down following fixing of panels. Any partial cleaning may cause minor visual impairments.

3.8 Cleaning of installed panels

Small amounts of lime-scale, cement splashes or light efflorescence can be removed with a 5 % aqueous malic acid solution similar to vinegar. The mild solution should never be allowed to dry and must be washed off with plenty of water. 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.

WARNING

The use of abrasive materials, such as steel-wool, scourers etc. is not permitted as these cleaning items will leave irreparable scratches on the surface.

4.0 Joints

4.1 Joint Width

Many years of practice have shown that the optimum width of the joints between large panels is 10mm. Aesthetically a 10mm joint is the best. 10mm also offers the installer a greater level of tolerance when fitting the panel. The minimum permissible joint is 8mm while the maximum would be 12mm.

4.2 Vertical Joints

Vertical joints are mostly backed with a continuous profile. When a metal supporting frame is used, the grey or silver colour can be prominent especially when used with dark coloured panels. This could be an unappealing feature. To eliminate this, the best solution is to use black coated metal profiles, such as anodised aluminium.

Alternatively, the visible areas can be painted on site prior to fitting the panels. Another solution is the use a good quality external black tape. Make sure the profiles are prepared correctly before painting or taping as new metal profiles can have an oily surface.

Note, the painting or taping of the profiles on site will not endure as long as the anodised metal profiles.

For timber supporting frames the batten is faced with a strip of EPDM which makes the open joint visually more pleasing. This strip also gives added protection to the battens.

4.3 Horizontal Joints

Horizontal joints can ONLY be left open.

By having open joints the likelihood of dirt spoiling the façade reduces as the joint remains clean. The retention of water will also be reduced thus reducing the risk of efflorescence.

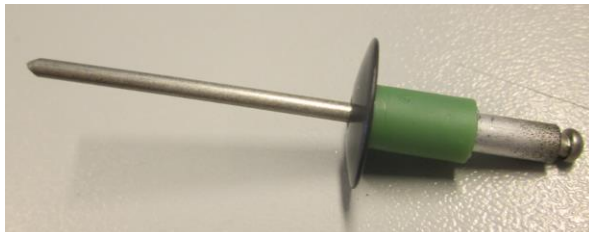
Remember the supporting frame is visible with open horizontal joints and they may need to be hidden by using black profiles, paint or tape.

In cases where a closure piece is unavoidable then horizontal joint profile must be designed to throw the water away from the panel surface.

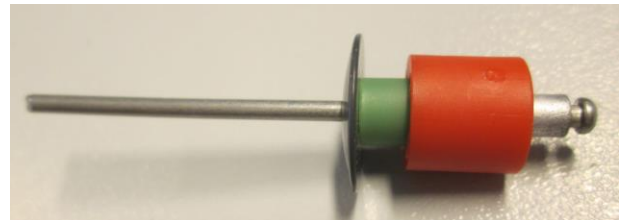
5.0 Rivet Fixing

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

5.1 Rivet Fasteners



EQUITONE UNI-rivet



EQUITONE UNI-rivet RED STOP point sleeve

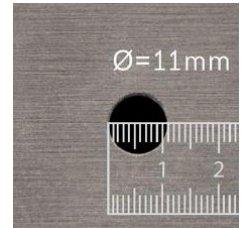
EQUITONE UNI-rivet is available as
 4x18 K15 AlMg5 Aluminium rivet for 8mm panel
 4x25 K15 AlMg5 Aluminium rivet for 12mm panel and extra thick support frame

4x18 K15 A2 (304) Stainless Steel rivet for 8mm panel
 4x20 K15 A2 (304) Stainless Steel rivet for 12mm panel

Other lengths of rivets are available.

5.2 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 **STOP** points. The two **STOP** points are formed by using the **RED** rivet sleeves to fill the oversized hole.

No **RED** sleeve is used for the **GO** holes.

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

A 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 rivet.

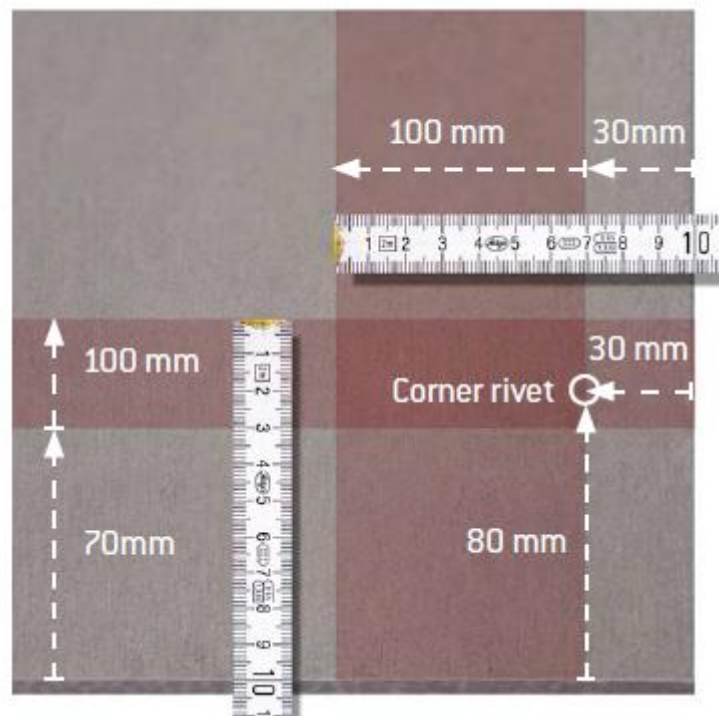
5.3 Hole Position

The position of the holes is as follows
 From the horizontal edges of the panel the dimension is 70 mm -> 100 mm.

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

Placing the corner rivets 80 mm from the horizontal edge 30 mm 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 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.

5.4 Installation Procedure

Place the foam tape onto the support frame metal profiles



Position the pre-drilled panel on a support rail and against the supporting frame, adjust to correct line and clamp into place. Starting with the **RED STOP** points, insert the 4.1mm centralising tool into the holes and drill through support frame profiles. Remove any debris.

RED STOP POINTS - (Fixed Points)

Place the EQUITONE UNI-rivet into its **RED** rivet sleeve collar (hole reducer) and place into rivet gun. Insert rivet with rivet sleeve collar (hole reducer) into predrilled hole and pop the rivet. The rivet must lie flat on the facade panel.



GREEN GO POINTS - (Sliding or Gliding Points)

Continue with the **GO** points, insert the 4.1mm centralising tool into the holes and drill through support frame profiles. Remove any debris.

Insert only the EQUITONE UNI-rivet into the rivet gun and place into the predrilled hole and pop the rivet. The rivet must lie flat on the facade panel.

Fix **GO** points after **STOP** points are completed.

6.0 Screw Fasteners to Wood

6.1 UNI-Screw

EQUITONE UNI-screw for Wood are A2 (304) Stainless Steel ISR T20 hex socket cap screw with a 15mm diameter head.

The head of the screw is available coloured to match the panels.

An uncoated screw is also available.

5.5 x 35 mm for 8 mm façade panels,

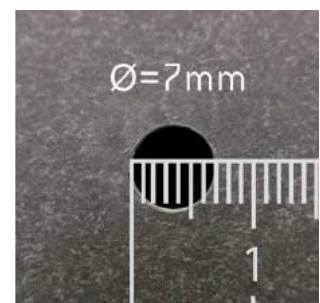
5.5 x 45 mm for 12 mm façade panels.



6.2 Procedure

EQUITONE [materia] 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 timber.

Drill the panel with 7mm diameter holes.



6.3 Hole Position

The position of the holes is as follows

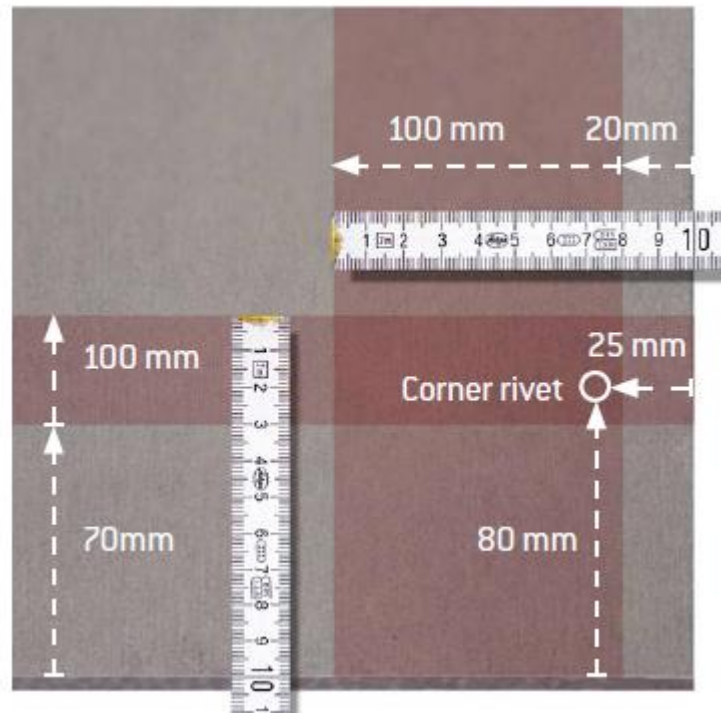
From the horizontal edges of the panel the dimension is 70mm -> 100mm.

From the side edges of the panel the dimension is 20mm -> 100mm.

Placing the corner screws 80mm from the horizontal edge 25mm 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.

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



7.0 Glue Fixing

It is important that Glue Fixing is carried out in strict accordance with the glue supplier's 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.

A number of suppliers have systems available to suit the EQUITONE Panels. Contact Bostik, Dow Corning, or SIKA for further information.

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

8.0 Tergo or Tergo+ Fixing

Tergo and Tergo+ are systems for secret fixing 12mm EQUITONE [material] panels ONLY 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 special 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.

There is no need for LUKO protective treatment of the undercut holes prior to inserting the anchors.

9.0 Supporting Frame

The most common arrangement for the panel's support is onto aluminium, galvanized steel metal or timber vertical profiles. Vertical profiles ensure that the air flow in the cavity space is not disrupted and that there is free drainage of any moisture.

Refer to the EQUITONE Planning and Application Guide for more information on the supporting frame.

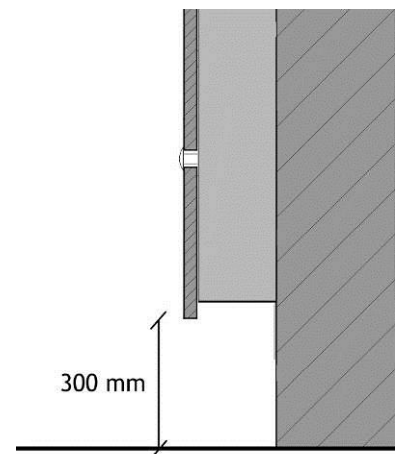
10.0 Flashings

All flashings must be designed to throw the water away from the panel. They must not allow water to run onto the panel.

11.0 Details

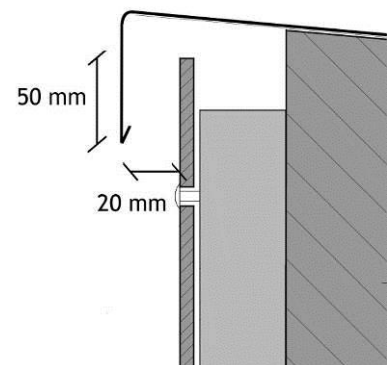
11.1 Base Detail

At ground level the end of the panels is to be positioned a minimum of 300 mm above the finished ground level. This will help prevent rain splash-back from the ground staining the ends of the panel.



11.2 Parapet

A minimal 20 mm (50 mm in case of copper) gap should be left between the front of the panel and the rear of the capping. The front edge of the capping must offer adequate cover to the panels and provide a minimum of 50 mm by buildings up to 8 m and a minimum of 80 mm by buildings up to 20 m and a minimum of 100 mm by buildings over 20 m protection.



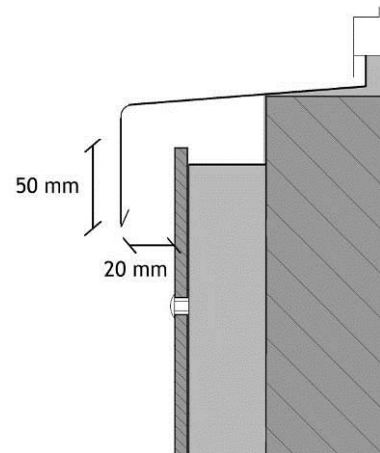
11.3 Window

The water flow from the facade is to be avoided for normal window glass. If windows and facades run on the same level, it can cause, due to the alkaline enriched water, irreparable damage on the glass. For specific glass types, please contact your local glass producer.

A window cill must be used to throw the water from the window away from the panel.

Air from the cavity must be allowed to exit under the metal cill. A minimum of a 10 mm gap should be left between the panel and the base of the cill. A perforated profile can be used for wider gaps to prevent entry of birds or vermin.

The front edge of the cill must be between 20 mm - 50 mm away from the front of the panel and offer adequate cover to the panels. The cill should extend down over the panels by a minimum of 50 mm.



11.4 Pipe Penetrations or Breakthroughs

Basically, as far as possible, it is best to avoid breakthroughs. Between the breakthrough and the panel must be an open joint of 10 mm. To avoid concentrated water dripping on the panel, measures need to be taken. To prevent this dripping place a collar 20mm in front of the panel surface.

