

## Product Data Sheet 22

### Armourcoat SCULPTURAL™ Wall System

#### 1 Product Description

Armourcoat SCULPTURAL™ is a range of seamless sculptural wall surface designs.

Armourcoat SCULPTURAL™ walls are constructed from a series of pre-cast panels that are bonded to the substrate. The panel joints are then filled and sanded and a final decoration is applied to achieve a seamless sculpted surface. Armourcoat SCULPTURAL™ designs are created by combining computer-aided design with traditional hand sculpting to create designs that fit together with total accuracy yet retain the essence of being hand crafted.

Some of the designs are based on a single panel that creates a repeating pattern; others are made from a sequence of different panels that can be integrated together in many different ways to create totally unique sculpted walls. The multiple panel designs make it possible to create non-repetitive seamless sculptural walls where the designs flow and change across the surface just as in nature. As a consequence, no two walls need ever be identical.

#### 2 Materials and Composition

Armourcoat SCULPTURAL™ panels are mineral based, non-toxic, and completely non-combustible. The panels are extremely dense and hard with a smooth ceramic-like surface.

Once the panels are installed each design can be finished in a range of decorative surface finishes.

#### 3 Panel dimensions and weight

The panel dimensions vary depending upon the design but most designs are either 1800mm x 600mm (70-7/8" X 23-5/8") or 1200mm x 800mm (47-1/4" X 31-1/2"). The overall thickness of the panels may vary from 14mm – 25mm (1/2" – 1") depending upon the depth of the sculpting to the surface for the different designs. The panels vary in weight depending upon the actual design and the weight of the panels will vary from 14 – 20kg /m<sup>2</sup> (3 - 4.5lbs/ft<sup>2</sup>).

#### 4 Test Data

- Armourcoat SCULPTURAL™ panels are entirely non-combustible and rated as Class 'A' for flame and smoke development when tested to ASTM E84 and Class '0' according to BS476 part 6 & 7.
- Compressive Strength = >33Mpa as per ASTM C109M "Standard Test Method for Compressive Strength of Hydraulic Cement Mortars".
- Flexural Strength = >10Mpa as per ASTM C-348 "Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars".

#### 5 Suitable Substrates

*Armourcoat SCULPTURAL™ panels are non combustible, however the substrate to which the panels are to be applied must be constructed in accordance with the minimum fire ratings that are required for the project.*

In order to achieve an accurate installation that will not crack over time it is necessary to have a substrate that can be screwed or fixed directly into, but that is inherently stable and unaffected by changes in temperature or humidity.

We recommend that the substrate is constructed from one layer of 12mm (1/2") plywood followed by a layer of 12.5mm (1/2") foil backed plasterboard/drywall. The reason for using foil backed plasterboard is to ensure that the moisture for the bonding adhesive does not permeate into the plywood and cause it to expand or move. If Foil backed plasterboard is unavailable then apply an oil based primer to the plywood at least 24 hours prior to fixing the plasterboard.

For the North American market exterior glass-mat cladding boards can be used as a replacement for the foil backed drywall board. USG Securock panels have been used successfully in the past.

Other suitable substrates include two layers of Hardie Villaboard, Blueclad board, or one layer of versapanel by Euroform followed by one layer of foil backed plasterboard.

Armourcoat SCULPTURAL™ can be installed onto a double layer of plasterboard, or a single layer of 5/8" drywall (for the North American market), but it is necessary to insert self tapping aluminum drywall plugs into the wall for each and every screw. This process is time consuming and as a result the installation time and cost will be higher.

## 6 Substrate Tolerance

It is critical that the substrate to which the panels are to be applied is solid, flat and true without any sudden bumps or deviations. Bumps or flares in the wall will cause misalignment between the panels which may remain visible in the finished work.

If the design is to run around an internal or external corner, it is vital that the corner is vertical otherwise it may be necessary to pack out one or both walls to ensure a straight and true corner.

Acceptable tolerance +/- 1mm in 600mm (+/- 1/32" in 24") & +/- 3mm in 1800mm (+/- 1/8" in 72").

## 7 Design Considerations

**Armourcoat SCULPTURAL™ panels are only suitable for internal use or areas that are not exposed to the elements or large temperature fluctuations.**

We would not recommend any single, seamless sculptural wall exceeds 40m<sup>2</sup> (400ft<sup>2</sup>) in surface area, with no linear run longer than 10m (30 feet), as with larger walls there is a risk of small hairline cracks developing between the panels due to slight substrate movement or thermal expansion and contraction. *(If asked to undertake larger expanses of wall it will be at the client's risk).*

### Internal and external corners

It is possible to create both internal and external corners with Armourcoat SCULPTURAL™ designs. Please note, however, that it is a time-consuming process that will add additional cost. You should be aware of this when specifying SCULPTURAL™ walls in situations where there are multiple changes of surface plane within a small area.

It is not possible to run a sculptural wall around an entire room and have the pattern joining up to itself again.

External corners are created by cutting and mitering the panel and then installing the panels around the corner. 2mm of the panel is lost in the cutting and mitering process but this is made up with the Bondplast™ filler. The nose of the corner is then hand shaped with a rasp file or sandpaper to create a pencil round that still reflects the sculptural shape of the corner.

Internal corners can also be created by mitering the panels however in mitering the panel a section of the design is lost with the consequence that the sculpted lines of the surface will not align. It is therefore necessary to use two panels instead of one which can lead to significant panel wastage

### Curved walls

Armourcoat SCULPTURAL™ designs can be installed onto curved walls provided they are of a consistent radius. The minimum radius for curved walls is 2500mm (8 feet). All the panels are custom made for each project to the required radius and special packing crates are

made to support the curved panels. There are **additional costs for the mould bases, additional casting time and the custom made crates.**

## 8 Installation

The Armourcoat SCULPTURAL™ wall panels are fixed back to the substrate by means of screw fixings and Bondplast™ adhesive.

It is critical to first establish a completely straight datum line at the bottom of the wall and the panels are progressively built up from this point. Do not rely on the floor or any existing skirting being sufficiently straight and true.

Fix a datum board firmly to the substrate ensuring that it will not move or flex when the panels are rested onto it.

Apply Bondplast™ adhesive to the substrate with a notched trowel and place the panel into position. Carefully screw back the panel to the substrate until it aligns along the entire edge with the adjoining panel. Remove any excess adhesive and wipe along the joint with a damp cloth to ensure the Bondplast™ adhesive lies just below the surface of the panels.

Panels can be cut to size with a Jig saw fitted with carbide grit blades or an angle grinder.

Once the panels have been installed and the adhesive has set hard, the seams between all the panels must be filled flush with the Armourcoat repair filler or drywall jointing compound, and sanded to create a smooth continuous surface.



## 9 Surface Finishes

To achieve the best visual results we would recommend the use of light colours as the level of contrast between the illuminated and shaded areas is greatest. Using darker colours may reduce the dramatic effect created by the lighting. Armourcoat can offer a number of specialist finishes that can be applied to the surface. Some of the designs have certain finish limitations due to the form and shape of the surface. Finishes that can be offered include:

**Spatulata** - A smooth glossy polished plaster finish. Please be aware that the surface finish will not be identical to normal Armourcoat Spatulata finish as it is being applied to a contoured surface with special tools. Please note that Spatulata is only suitable on certain designs.

**Perlata** decorative paint finish - made from pearlescent mica and has a subtle sparkle or shimmer to the surface. This is spray applied and available in a range of 96 colours.

**Paint** - The surface can be painted with matt or satin emulsion paint. We recommend a spray application for best results.

The walls can either be down lit, up lit or even cross lit for any design that runs vertically. The angle of incidence for the light source to the face of the wall can vary depending upon the effect required, but as a guide we would recommend that the light strikes the wall surface at an angle of between 8-25° with 15-18° degrees being about the optimum. For a 3m (10') high wall you would set the halogen spots into the ceiling about 300-400mm (12-16") from the face of the wall. The light will be striking the wall at about 8-12° 1m (3'4") from the floor, 12-15° at 1.5m (5') and 19-23° at 2m (6'8") up.

Sculptural design	Finish: Spatulata	Spray: Perlata or paint	Recommended orientation and finish
Flow	Yes	Yes	Horizontal Spatulata
Flow Wave	Yes	Yes	Horizontal Spatulata/Perlata
Flow Straight	Yes	Yes	Horizontal Spatulata
Coral	No	Yes	Horizontal Perlata/paint
Hour Glass	Difficult	Yes	Horizontal Perlata/paint
Leaves	No	Yes	Horizontal paint
Ribbons	Yes	Yes	Horizontal/vertical Perlata
Jet Stream	No	Yes	Horizontal Perlata
Shock Wave	Yes	Yes	Horizontal/ vertical Spatulata
Quilt	Yes	Yes	Perlata
Monroe	No	Yes	Vertical/horizontal Perlata
Bergman	No	Yes	Horizontal Perlata/paint

## 10 Lighting

Achieving the correct lighting is critical to the success of Armourcoat SCULPTURAL™ walls. To get the best results it is important to light the surface to achieve the optimum interplay between highlight and shadow.



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For even more dramatic effect it is possible to install LED colour change 'Luminaire' lighting in combination with a programmable DMX control system. This makes it possible to wash the wall in almost any colour, have different colours fading in and out or any number of unique programmable coloured lighting effects.

### **11 Detail Drawings (see following pages)**

11.1 Substrate build detail

11.2 Skirting detail

11.2.1 Shadow gap skirting

11.2.2 Raised Skirting

11.3 Detail for Endstop/ Architrave/ Door Frame/  
MetalEdge Frame

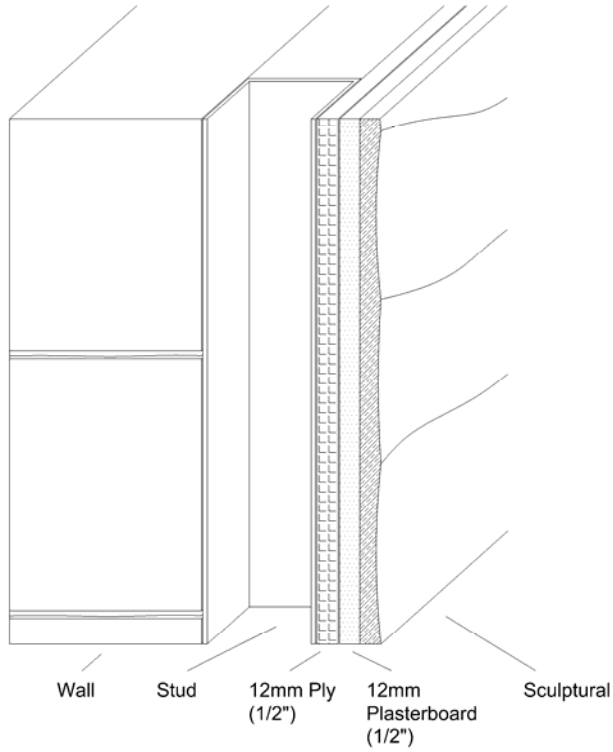
11.4 Internal and External Mitred Corner Detail  
Double Layer Board

11.5 Protected Corner Detail (angle beads supplied and  
installed by others).

11.6 Plasma TV Detailing (bead supplied and installed  
by others).

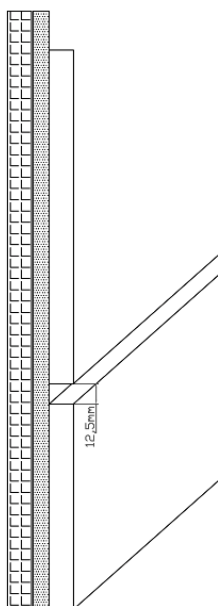
11.7 Plasma TV Detailing for Floating Wall

## 11.1. Substrate Build Detail

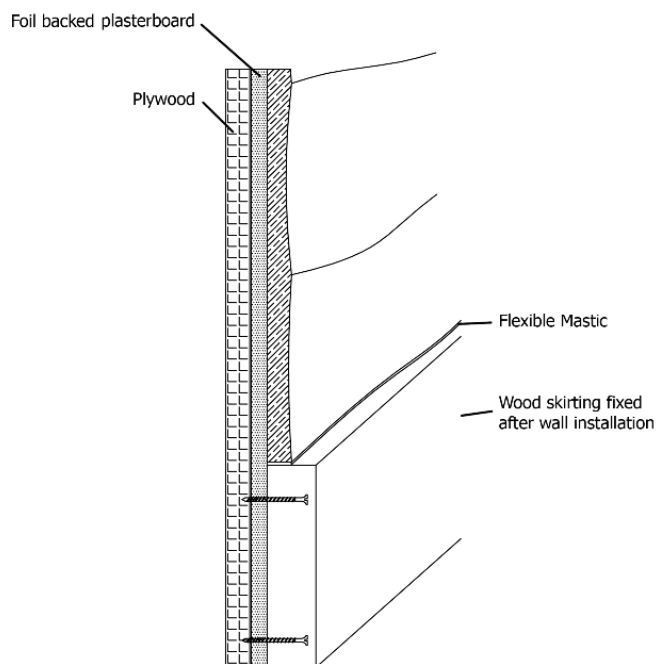


## 11.2 Skirting Detail

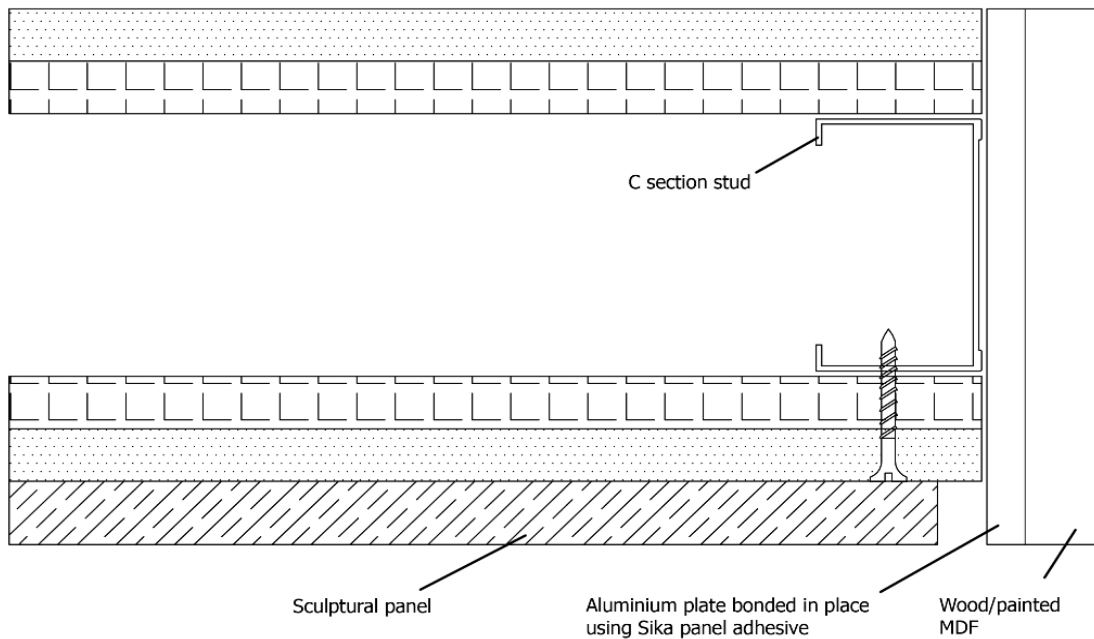
### 11.2.1 Shadow Gap Skirting



### 11.2.2 Raised Skirting



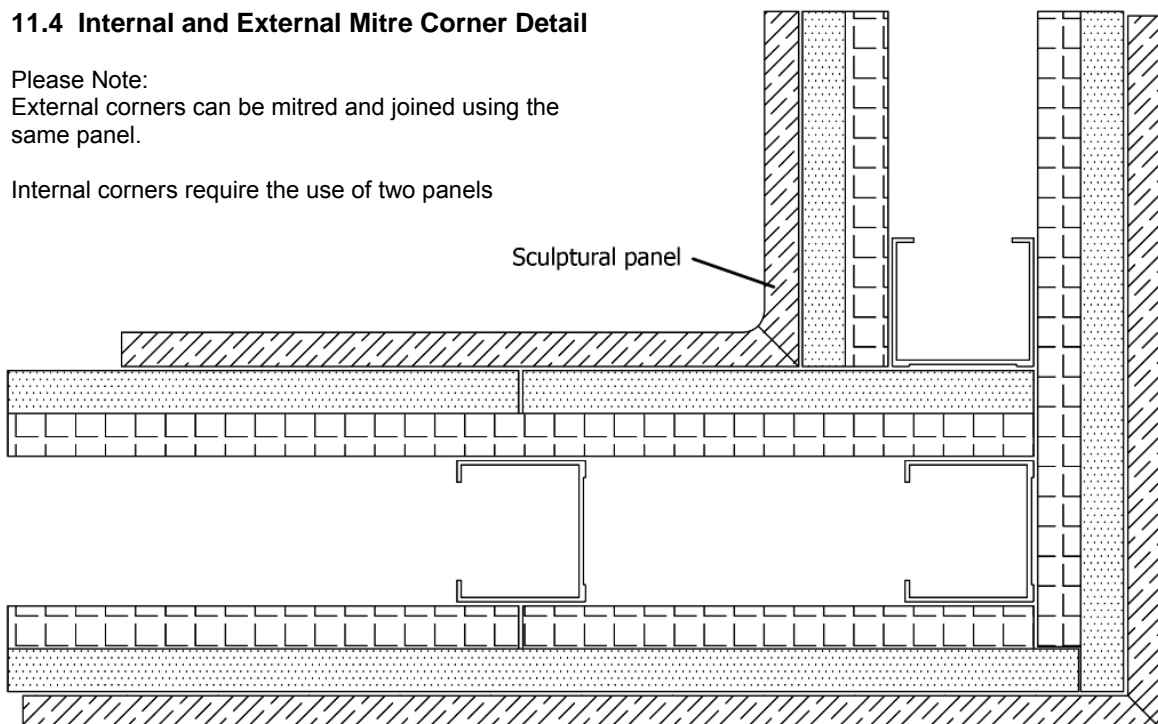
### 11.3 Detail for Endstop / Architrave / Door Frame / Metal Edge Frame



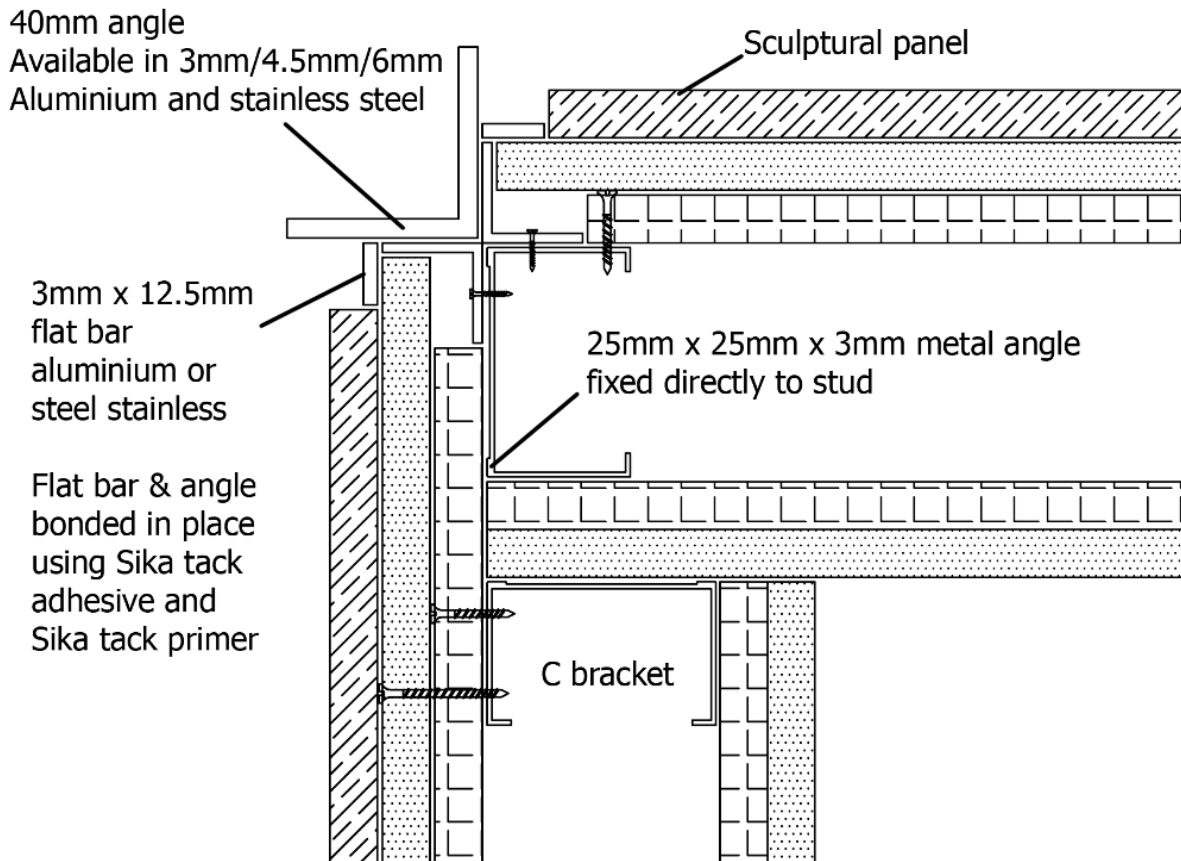
### 11.4 Internal and External Mitre Corner Detail

Please Note:  
External corners can be mitred and joined using the same panel.

Internal corners require the use of two panels

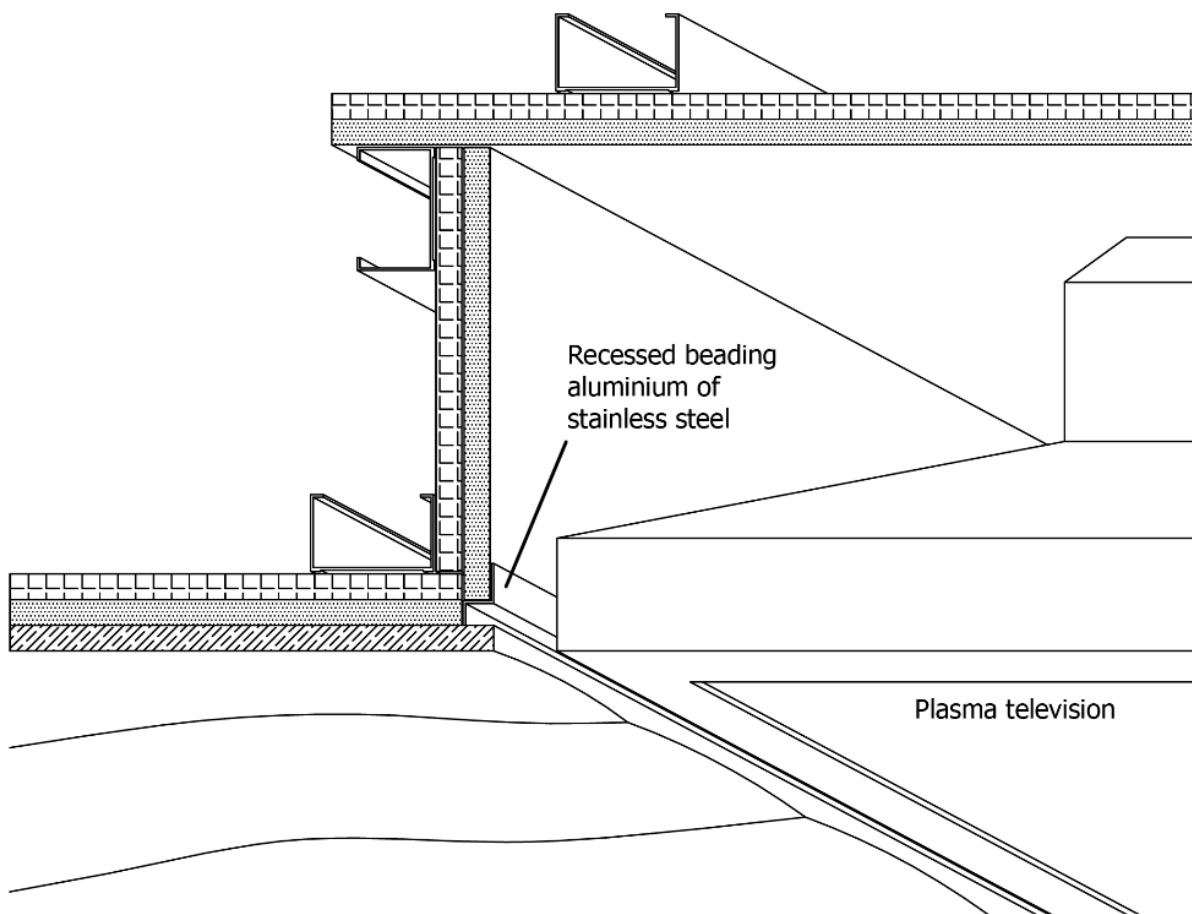


### 11.5 Protected Corner Detail



### 11.6 Plasma TV Detailing

If the Plasma TV is set onto a fixed mounting bracket the distance between the TV and the edge of the panel must be sufficient to allow the TV to be lifted off the mounting bracket plus ~ 10mm for adequate clearance. You should therefore check the mounting bracket before determining the exact aperture dimensions and expect a clearance gap all round of 30 -50mm which will also be necessary for cooling ventilation to the back of the TV.

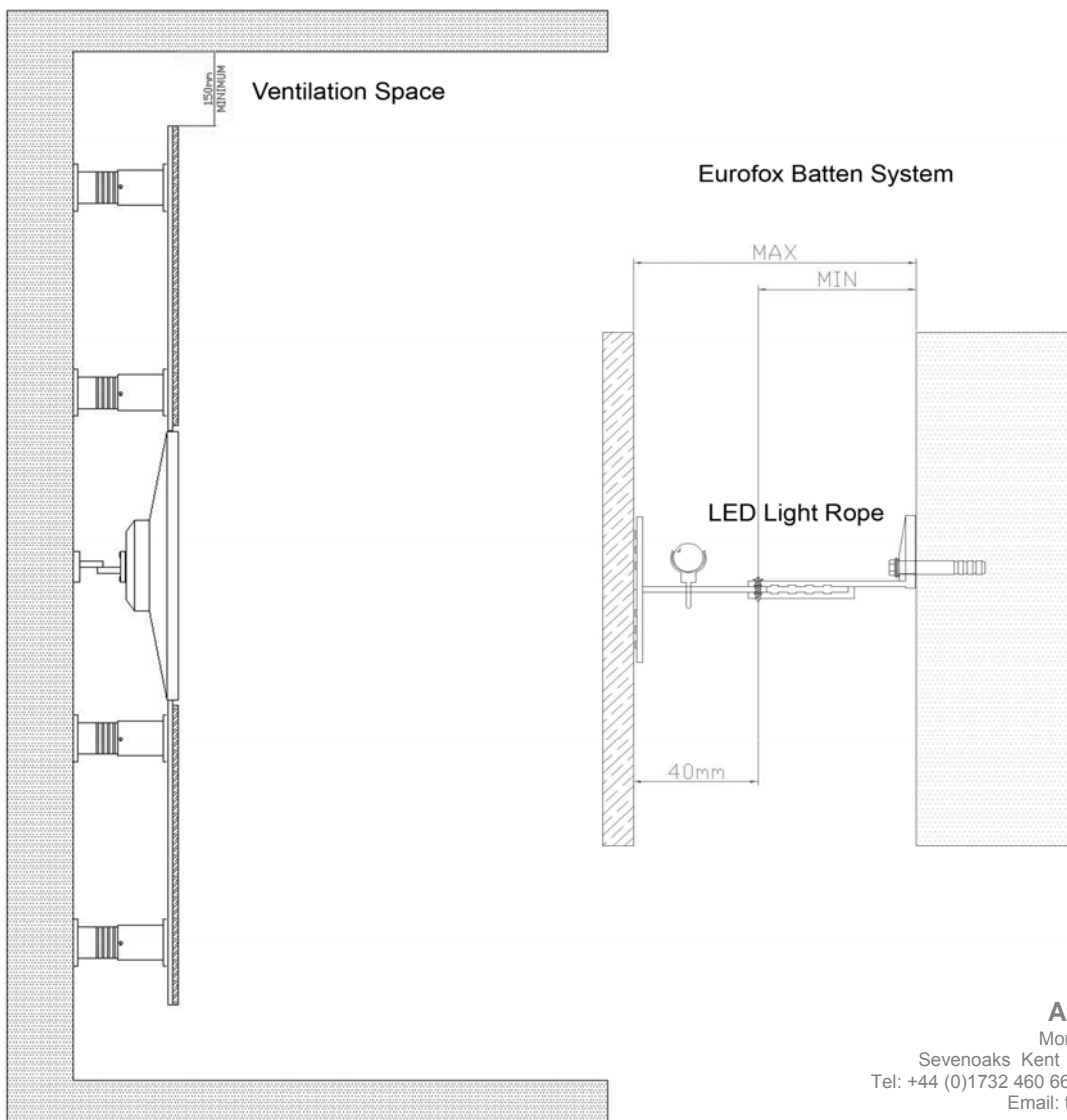
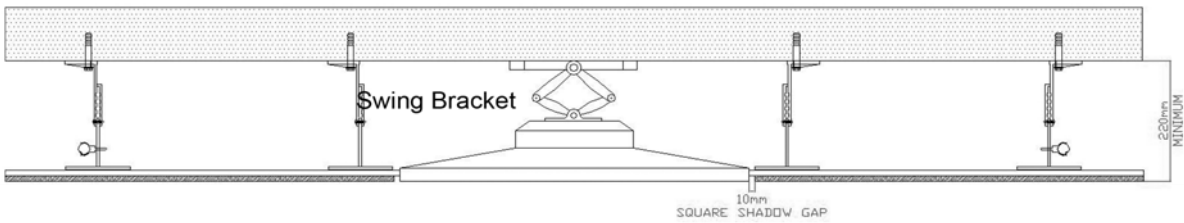


### 11.7 Plasma TV Detailing for Floating Wall

The Eurofox batten system provides a support frame for the Armourcoat SCULPTURAL™ wall and provides good ventilation to the back of the TV.

The Eurofox Battens are clad with a single layer of 12mm Plywood or moisture resistant Medite MDF. The TV aperture is cut into the MDF using a CNC router to the exact dimensions +1mm for clearance.

The Plasma TV is fixed onto an extendible mounting bracket which enables it to be pulled out and demounted in the event of any technical problems with the TV. The precise cutting of the aperture ensures that when the TV is pushed in flush with the wall a consistent shadow gap is achieved all around.



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