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SSS011: Substrate Specification Sheet 11 - Sculptural

Armourcoat QA Substrate Specification for Armourcoat Sculptural Walls

1 Introduction

This specification which emphasises the considerations required on build quality and surface flatness has not been written for Armourcoat's benefit, but seeks to provide a quality of finish which will receive the long term approval of the client and meet or exceed the expectations of the Architect and Project Managers.

The specification is for guidance only. It describes good working practice. It does not claim to be the right or only method of wall construction to provide a substrate suitable for the installation of Armourcoat sculptural panels and is made without responsibility for the execution of the work. Build quality is the responsibility of the installer/builder.

Architects, when specifying Armourcoat Sculptural shall give special attention in their design to wall line or flatness, avoidance of cracks and external corners. Recommendations on these matters are contained in this specification.

The following construction relates to **non-loadbearing constructions up to 4 m in height. For additional heights in excess of 4 m contact the supplier of the wall framing to ensure it is capable of supporting the loading applied to the surface.**

2 Build Quality

The walls shall be firmly constructed in metal stud partition which shall be vertically plumb and built to a true horizontal line without undulations, bumps, hollows or dives and within strict tolerances of plus or minus 1 mm (1/32") in 600 mm (24") and plus or minus 3 mm (1/8") in 1.8 metres (72"). In the construction of the stud partition walls the vertical supports shall be positioned to support all vertical board joints. Timber supports may be specified in limited circumstances but to minimise the risk of cracking shall be in seasoned timber to a moisture content not exceeding that recommended in BS5268 Part 2 1984. If in doubt of the seasoned quality of the timber, specify metal studding.

Brick or Block walls can be used as a substrate for Sculptural walls however it is not a preferred method and the following points need to be considered before proceeding with works.

Brick and block walls can be subjected to structural movement which in turn can lead to hair line cracks appearing in the Sculptural finish.

When specifying a Sculptural finish onto a brick or block substrate clients should be expectant that a return visit may need to be made to tend to this issue. In this instance the cost of return visits will be borne by the client and not Armourcoat.

3 Support framing

The metal framing must be built to withstand the total loading being applied to the surface. If in doubt please consult the framing manufacturers.

Material	Weight per m ² (Weight per ft ²)
12mm (1/2") Plywood	7kg (1.5lbs)
12mm (1/2") Plasterboard / Drywall	8kg (1.8lbs)
Bondplast	2-3 kg (0.44-0.66lbs)
SCULPTURAL Panel	14 -20 kg (3-4.5lbs)
Total	31 -38 kg (6.8-8.4lbs)

The metal studs should be set at 400mm (16") centres or less to ensure a robust construction that will not deflect under load.

C shaped studs are suitable where both faces of the wall are to be lined.

'I' Studs must be used where the lining is only applied to one side of the wall.

4 Movement

The walls when boarded out shall have no discernible movement when subjected to intermittent pressures (rocking) or impact.

5 Suitable Surfaces

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 the panels can be screwed 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 (½") plywood followed by a layer of 12.5mm (½") 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 a suitable moisture block primer to the plywood at least 24 hours prior to fixing a layer of standard plasterboard / drywall (GWB).

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.

Once the plywood has been fixed back to the framing it is important to stagger the board joints when installing the layer of foil backed plasterboard or other board types mentioned in the above paragraphs.

Other suitable substrates include 2 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 (for all markets other than North America), but it is necessary to insert self tapping aluminum drywall plugs into the wall for each and every screw. In order to position the panel accurately it is normal to insert about 16 screw fixings per panel. This process is time consuming and as a result the installation time and cost will be increased.

All North American based projects require a layer of ½" plywood followed by a layer of drywall for all Sculptural installations.

Brick or block walls should be battened and boarded out with a single layer of plasterboard and plywood, following the stud wall guidance as described above. Where this is not a viable option then the Sculptural finish can be applied directly to the wall as long as it has been plastered and prepared in accordance with pages 1&2 of SSS3. To install Sculptural panels in this way it is necessary to drill into the substrate and insert wall plugs to provide support for each panel. This installation process is more time consuming than our preferred methods and as such installation time and cost will be increased.

6 Fixings

Fixings through plasterboard are to be made using standard drywall screws with heads countersunk 1mm without breaking the surface of the board.

Boards shall be fixed **vertically** for **straight** walls.

Boards shall be fixed **horizontally** for **curved** and circular walls and the radius shall not be less than 2500mm (8').

All edges must be continuously supported over full length of each edge on 50 mm (2") minimum width studs.

The line of the boards shall be finished true with no discernible undulations, bumps, hollows or dives and within tolerances previously specified in 2.

Both the plywood and plasterboard shall be fixed to maintain tolerances and avoid the formation of bellies between supports. Place the first board in position and fix the first vertical edge. Press the board flat against the next vertical support and fix to it. Continue to work progressively across the wall. **DO NOT** fix both vertical edges before fixing to the intermediate support.

Fixing Details Summary

	1st Layer Interior	2nd Layer Interior
Board Type	12.5mm (½") plywood	12.5mm (½") foil backed plasterboard
Treatment	None	Tape & fill board joints if required for fire regulations
Self drilling drywall screws No3.5 or 4.2	Drywall 25mm (1") into metal stud 38mm (1-½") into timber stud	38mm (1-½") into metal stud 50mm (2") into timber stud
Width of stud to fix into	50mm (2") minimum	50mm (2") minimum
Maximum support spacing	Flat wall 400mm (16") curved wall 300 mm (12")	Flat wall 400mm (16") curved wall 300 mm (12")
Fixing Centres	300mm (12") maximum	300mm (12") maximum
Board joint gaps	None	None

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