ARMOURCOAT®

SUSTAINABLE LUXURY FINISHES

TECHNICAL DOCUMENT

POLISHED PLASTER SELECTOR RANGE - HPS / SMG

TECHNICAL DOCUMENT

CONTENTS

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POLISHED PLASTER SELECTOR RANGE - HPS / SMG

1. PRODUCT DESCRIPTION

Armourcoat SMG Polished Plaster is created using a combination of P01 Polished plaster and P80 Spatulata Paste build up in many fine layers and intensively polished with a trowel.

SMG stands for Smooth Grasello. It is a variation on the Spatulata finish but is applied in such a way that there is significantly less movement and pattern in the surface. This gives it the appearance of a seamless high gloss 'lacquer' effect. The finish works best in light or dark colours. It is possible to follow the same technique and procedure in mid tone colours, but more tonal variation will be visible in the surface.

SMG provides an opulent decorative finish but due to the ultra-high gloss surface it demands the highest level of substrate flatness if it is to be see at its best.

Properties

- Natural mineral material
- Natural breathable finish
- Good water vapour permeability
- Seamless and durable polished surface for interiors
- Wide range of colours
- Up to 24-29% recycled content
- A2 fire Classification EN13501
- Low embodied carbon
- Zero VOC content
- No Off gassing
- Environmental Product Declaration
- Health Product Declaration
- LBC Red List Compliant

1.1. PRINCIPLE INGREDIENTS FOR HPS / SMG

Many of our finishes are made up from different components.
This is a list of the principal components that make up the HPS / SMG finish.

PRODUCT	QUANTITY (KG/M²)	VOC (G/L)	GWP/M²CO_2e
Keycoat	1.05	<1	0.43
P01	0.95	<1	0.32
P80	0.9	<1	0.30
Total	2.9	<1	1.05

GWP figures A1-D.

2. TEST DATA

Armourcoat P01/P80 has been subjected to a wide range of Fire, VOC, durability, and other performance testing.

2.1. FIRE TESTING

2.1.1. European Fire Test Results

Independent tests were carried out in the UK for classification of reaction to fire performance in accordance with EN13501-1:2018.

REACTION TO FIRE CLASSIFICATION*
A2 - s1, d0

**Both P01 and P80 results achieve this result independently.*

2.1.2. American Fire Test Results

Test carried out in accordance with ASTM E84 - 14, Standard Test Method for Surface Burning Characteristics of Building Materials. All Components achieved.

TEST TYPE	RESULT
Flame Spread Index	5
Smoke Development Index	0
Flame Spread Classification	A

2.2. VOLATILE ORGANIC COMPOUND (VOC) TESTING

2.2.1. VOC Content testing

A sample of Armourcoat P01 and P80 were tested by an accredited European laboratory (Eurofins) to ASTM D2369, Standard Practise for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

Test Result - P01

TEST METHOD	VOC (G/L)	VOC (LBS/GAL)	LIMIT OF DETECTION (G/L)
ASTM D2369- 2020	<1	<1	1

Evaluation of result - P01

TEST METHOD	CONCLUSION	VERSION OR PROTOCOL
SCAQMD Rule 1113	Pass	February 2016
LEED v4.1 (VOC Content)	Pass	February 2021

Test Result - P80

TEST METHOD	VOC (G/L)	VOC (LBS/GAL)	LIMIT OF DETECTION (G/L)
ASTM D2369- 2020	<1	<1	1

Evaluation of result - P80

TEST METHOD	CONCLUSION	VERSION OR PROTOCOL
SCAQMD Rule 1113	Pass	February 2016
LEED v4.1 (VOC Content)	Pass	February 2021

2.2.2. VOC Emissions Testing

A sample of Armourcoat P01/P80 was tested by Eurofins to a wide range of emissions standards including EN 16516, ISO 16000-6, AgBB and French and Belgian VOC regulations.

Evaluation of results

REGULATION OR PROTOCOL	CONCLUSION	VERSION OF REGULATION OR PROTOCOL
French VOC Regulation	A+	Decree of March 2011 (DEVL1101903D) and Arrêté of April 2011 (DEVL1104875A) modified in February 2012 (DEVL1133129A)
French CMR Components	Pass	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)
Italian CAM Edilizia	Pass	DM 23 giugno 2022 n. 256, GURI n. 183 del 6 agosto 2022
ABG/AgBB	Pass	Ausschuss zur gesundheitlichen Bewertung von Bauprodukten (June 2021)
Belgian Regulation	Pass	Royal decree of May 2014 (C-2014/24239)
EMICODE	EC 1 PLUS	November 2024
Indoor Air Comfort®	Pass	Indoor Air Comfort 9.0 of June 2023
Indoor Air Comfort® Gold	Pass	Indoor Air Comfort Gold 9.0 of June 2023
Blue Angel (DE-UZ 198)	Pass	DE-UZ 198 for “Low-Emission Internal Plasters”, January 2019
BREEAM International	Exemplary Level	BREEAM International New Construction v6.0 (2021)
BREEAM NOR	Exemplary Level	BREEAM NOR v6.1 New Construction v6.0 (2021)
LEED v4.1 BETA	Pass	February 2024
EU Taxonomy	Pass	Regulation (EU) 2020/852 of the European Parliament and of the Council

Evaluation of results - P80

REGULATION OR PROTOCOL	CONCLUSION	VERSION OF REGULATION OR PROTOCOL
French VOC Regulation	A+	Decree of March 2011 (DEVL1101903D) and Arrêté of April 2011 (DEVL1104875A) modified in February 2012 (DEVL1133129A)
French CMR Components	Pass	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)
Italian CAM Edilizia	Pass	Decree 11 October 2017 (GU n.259 del 6-11-2017)
ABG/AgBB	Pass	Ausschuss zur gesundheitlichen Bewertung von Bauprodukten (June 2021)
Belgian Regulation	Pass	Royal decree of May 2014 (C-2014/24239)
EMICODE	EC 1 PLUS	September 2022
Indoor Air Comfort Gold®	Pass	Indoor Air Comfort GOLD 8.0 of June 2022
BREEAM International	Exemplary Level	BREEAM International New Construction v2.0 (2016)
LEED v4.1 BETA	Pass	February 2021

2.2.3. Environments Building Certification

BREEAM International – Basic status for VOC Emissions

LEED ASTM D2369- 2020 V 4.1 certified as a 'Low emitting Materials'

Full Certificates supplied on Request.

2.3. MOULD/MILDEW RESISTANCE

ASTM D 3273 Standard Test Method for Resistance to Growth of Mould on the Surface of Interior Coatings in an Environmental Chamber.

ASTM D 3274 Standard Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation.

PLASTER	FINISH	POST TREATMENT	FRONT PANEL	BACK PANEL
Armourcoat Spatulata P80	-	EcoWax	10/10/10	10/10/10
Armourcoat Polished Plaster	Smooth	-	10/8/10	10/10/8

**Rating system: 1 is very poor. 10 is no growth.*

Testing was carried out by an accredited American testing laboratory.

2.4. SHORE D HARDNESS

Shore – P01

A test panel of Armourcoat Polished Plaster P01 on 6mm MDF was tested for hardness using an Sauter HBD100-0 Shore Durometer D. An average of 5 readings was taken. Tests were carried out at 23°C and 35% RH.

SAMPLE	ARMOURCOAT POLISHED PLASTER P01
Shore D Hardness	64

Shore – P80

A test panel of Armourcoat P80 AM Y0555 on 6mm MDF was tested for hardness using an Sauter HBD100-0 Shore Durometer D. An average of 5 readings was taken. Tests were carried out at 23oC and 35% RH.

SAMPLE	ARMOURCOAT P80
Shore D Hardness	74

2.5. PENCIL HARDNESS

Pencil - P01

Armourcoat P01 samples were tested in accordance with ASTM D 3363 using a set of Berol turquoise hardness pencils.

SAMPLE	ARMOURCOAT P80 B0222
Pencil Hardness	5H

Pencil – P80

Armourcoat P80 samples were tested in accordance with ASTM D 3363 using a set of Berol turquoise hardness pencils.

SAMPLE	ARMOURCOAT P80
Pencil Hardness	5H

2.6. ENVIRONMENTAL PRODUCT DECLARATION (EPD)

In accordance with ISO 14025, ISO 21930 and EN 15804 - The International EPD® System.
Core environmental impact indicator EN 15804 +A2 PEF (All categories Cradle to grave)

EPD – Keycoat

Keycoat - Global Warming Potential (GWP) 0.41kg CO_2e

Coverage rate 0.5-1 kg/m²

GWP per m² 0.2 – 0.41 kg CO_2e / m²

EPD – P01

Global Warming Potential (GWP) 0.340kg CO_2e

Coverage rate 1.5-2.5 kg/m^2

GWP per m^2 0.24 – 0.34 kg CO_2e / m^2

EPD – P80

Global Warming Potential (GWP) 0.336kg CO_2e

Coverage rate 0.7-1 kg/m^2

GWP per m^2 0.24 – 0.34 kg CO_2e / m^2

Full EPD can be downloaded from our website and is also published by EPD Hub & EPD International.

2.7. HEALTH PRODUCT DECLARATION (HPD)

Armourcoat P01/P80 does not contain any REACH materials that are listed as materials of very High Concern.

A full Health product declaration has been carried out for this product and is available here: https://hpdrepository.hpd-collaborative.org/Pages/Results.aspx#k=armourcoat

2.8. LIVING BUILDING CHALLENGE (LBC)

Living Building Challenge (LBC) Red List Approved is a status indicating that a product is compliant with the requirements of the LBC Challenge. Armourcoat P01/P80 have met this challenge and contains no materials that appear on the LBC Red List - March 2022.

3. SUITABLE SUBSTRATES

Armourcoat P01/P80 plaster can be applied to any backing that is firm and true and will not crack. In our experience the best substrates to work onto are taped and jointed plasterboard and plastered walls that are fully dry.

Never attempt to apply over wallpaper or lining paper. Care should be taken on surfaces that are already decorated. Armourcoat P01/P80 plaster can be applied to existing painted surfaces provided the paint is well adhered to the wall.

A flat or true substrate is vital to achieve high quality results as any bumps or imperfections may show up in the finished surface.

Whilst P01/P80 plaster will bond to MDF great care should be taken when using it as a continuous substrate as it will tend to crack along any joint lines.

Full specification sheets for all types of substrates are available on request.

3.1. SUBSTRATE SPECIFICATION FOR PLASTERBOARD AND DRY LINING INSTALLATION

3.1.1 Introduction

This specification emphasises the importance of build quality and surface flatness. The purpose of this is 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 way of creating a satisfactory substrate and is made without responsibility for the execution of the work. Build quality is the responsibility of the installer/builder.

3.1.2. Construction

The wall shall be firmly constructed in metal stud partition which shall be vertically plumb and built to a true horizontal line without undulations, within strict tolerances:

- Plus, or minus 1mm in 600mm
- Plus, or minus 3mm in 1.8 metres

Timber supports may be specified in limited circumstances but to minimise the risk of cracking, the timber shall be seasoned to a moisture content not exceeding that recommended in BS5268 Part 2 l984. If in doubt in the seasoned quality of the timber, specify metal supports.

In the construction of the stud partition walls, ensure that the vertical and cross supports are in position to support board joints on all four edges to avoid fault lines and the risk of cracking.

Sticking plasterboard onto walls with dabs is not a fixing method recommended by Armourcoat as the results will vary depending on both the skill and diligence of the applicator, and it is much less predictable than mechanical fixing to studs.

The application of decorative plaster can involve the material being heavily trowelled as it is finished. The forces involved are often greater than normal plastering and will therefore only highlight any weaknesses in the substrate at the final stages.

3.1.3. Recommended Fixing Details for Plasterboard Walls

CONSTRUCTION	BOARD THICKNESS (MM)	LENGTH OF FIXING SCREWS (MM)		MAX FIXING CENTRE (MM)	MAX SUPPORT CENTRE (MM)
		1ST BOARD	2ND BOARD		
Timber Frame Support using Gyproc Drywall Screws	12.5	36	50	300	600
Metal Frame Supports 0.55mm to 0.7mm use Gyproc Drywall Screws 0.75mm to 2.5mm use Gyproc Jack-Point Screws	12.5	25	38	300	600
For curved or circular walls reduce support centres to 300mm					

3.1.4. Movement

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

3.2. PLASTERBOARD FINISHING

The two methods of board finishing, prior to the application of Armourcoat products are taping and jointing and the application of a skim plaster.

3.2.1. Jointing Boards Prior to Taping

Only jointing compounds approved by the board manufacturers shall be used to fill board joints, joint depressions, screw heads and any hammer or other impact marks. This operation shall be done in two applications; the first being allowed to set before the second is applied. Screw spotting shall be carried out between operations in the main jointing sequence. When filler is dry, sand down to remove snags and any unevenness. With square edge boards cracking risks will be reduced by filling open joints (2-3mm) full depth with jointing compound.

3.2.2. Taping and Jointing

Approved jointing tapes only shall be used. Armourcoat Limited recommends Gyproc joint tape applied in accordance with the manufacturer's recommendations. Ensure a clean surface free from dust or grease. Unroll tape centrally over filled joint pressing down firmly to ensure good adhesion. Apply a thin band of jointing compound 200mm wide over and beyond each side of the tape and trowel flat. Make sure the tape is firmly embedded with no air pockets. Using a jointing sponge, moisten the sponge and feather out the margins. Rinse sponge frequently to keep clean and soft. Obvious depressions in the surface can be filled again to correct surface flatness to the specified tolerances. When the sanding and filling process is complete and when the jointing compound is set and dry, lightly sand down the surface before applying a final layer of jointing compound 400-450mm wide feathered out either side of the tape avoiding any build over the tape run. Moisten the jointing sponge and feather out the edges.

NOTE: *This dubbing out procedure, in successive thin coats, is required to take out the bump caused by taping the board joint. All other unevenness in the background shall be taken out in a similar way or by plastering overall with Thistle Multi-finish if flatness cannot be achieved by any other means.*

Jointing compounds, particularly along wallboard joints, shall be thoroughly dry before sealing. When wallboard surfaces are sealed before the jointing compounds are dry, polished plaster applications cannot proceed since the joint lines will grin through permanently disfiguring the finished work.

3.2.3. Internal Corners

Armourcoat recommends Gyproc, Knauf and Lafarge joint tapes. The gap 2-3mm between corner boards shall be filled full depth with jointing compound. A thin layer of jointing compound is then applied to both sides of the arris. The joint tape is folded and pressed into the angle using a taping knife to bed the tape. Make sure that air bubbles are eliminated. There must be sufficient jointing compound left under the tape to ensure good adhesion. A thin layer of jointing compound 100mm wide shall then be applied to each side of the arris. When this coat has set, another coat of jointing compound 300mm wide shall be applied to both sides of the angle and the edges feathered out with a wetted sponge float or a damp sponge.

3.2.4. Obtuse Angles

Armourcoat recommends Gyproc, Knauf and Lafarge corner-tape for obtuse angles. It is often difficult to produce a sharp straight line when forming an obtuse angle. By using corner tape (zinc coated steel strips set on fibre paper) a good line can be formed where the directional change occurs. The procedure and sequence for fixing the tape and for finishing the surface of the plasterboard after fixing the tape is the same as in 6.1.2 but in this case feather out the plaster 600mm either side of the arris.

3.2.5. External Angles

With Armourcoat Polished Plaster applications a choice of angle protection is available.

i. Gyproc Angle Bead
ii. QICCorner bead
iii. SAS 90 Degrees High Strength Corners

Gyproc angle bead and QIC angle bead affords optimum protection where a sharp external arris is specified but note comments regarding high-risk locations. Cut to the required length. Place the angle bead plumb over the external corner guarding against flaring top and bottom. Fix angle bead in approved manner. Apply a 200mm wide 2mm thick band of jointing compound to both sides and feather out the edges with a wetted sponge float or sponge. When set and dried, apply a second layer of jointing compound 400-450mm wide to both sides of the angle and feather out the edges.

3.2.6. Feature Beads

Thin coat plastering beads are available from British Gypsum Ltd (Tel 0800 225225), SAS – (Tel 0118 9290900) or QIC Trims (Tel: 01280 818 950). For detailing drawings please refer to the end of this document.

3.2.7. Sealing Surface

All prepared wall surfaces shall be painted with an approved wallboard primer. Gyproc Topcoat and Knauf wallboard primer are approved by Armourcoat Limited. Before wallboard sealers are applied, the jointing compound must be thoroughly dry. Where wallboard surfaces are sealed before the jointing compounds are dry, polished plaster applications will be disfigured since dampness underneath the sealer will cause permanent shadow lines as the wall dries out. Similarly, shadow lines will arise at joint lines if surfaces are not sealed first.

3.3. PLASTERING

3.3.1. Skim Coat

An approved gypsum skim coat plaster such as Gyproc Multifinish shall be used on two 12.5mm layers of plasterboard on straight walls and shall be fixed vertically and supported on all four edges. When used for curved walls with a radius of 2.5 metres or greater, the plasterboard shall be used in two layers fixed horizontally and supported on all four edges. Each layer of board shall be independently fixed in accordance with the fixing details in table on page 1. The second layer of plasterboard shall be constructed with open joints 2-3mm apart. The joints in the two layers shall be staggered to prevent fault lines that could induce cracking. The finished boarding shall be finished flat with no discernible undulations, bumps, hollows or dives and within tolerances of plus or minus 1mm in 600mm and plus or minus 3mm in 1.8 metres.

PLASTER GRADE	RECOMMENDED THICKNESS (MM)	JOINT REINFORCEMENT
Thistle Multi-Finish	2-3	Gyproc Joint Tape
Thistle Board Finish	2-3	Gyproc Joint Tape

All plasters shall be used in accordance with the recommendations of BS5492 Code of Practice for Internal Plastering.

3.3.2. Taping & Jointing

In setting the plasterboard a gap of 2-3mm shall be left between adjoining boards which shall be filled full depth before taping the joints. Only approved proprietary jointing tapes shall be used in accordance with the manufacturer's recommendations.

Tapered edge boards are recommended, and the joints should be reinforced with Gyproc joint tape or similar and filled flush with the surface of the board. No discernible bump or hollow should be present at the joints once the surface has been sanded.

Where low profile drywall beads have been fixed at the perimeter, they should be feathered out by at least 350-400mm to ensure no obvious flaring at the edges.

3.3.3. External Angles

Corner beads for plaster shall be used to provide protection to the external corners.
In locations where corner damage may occur, insert wood or metal end capping.

3.3.4. Internal Angles

All internal arises shall be reinforced with mesh or taped in accordance with the board manufacturer's specification.

3.3.5. Priming

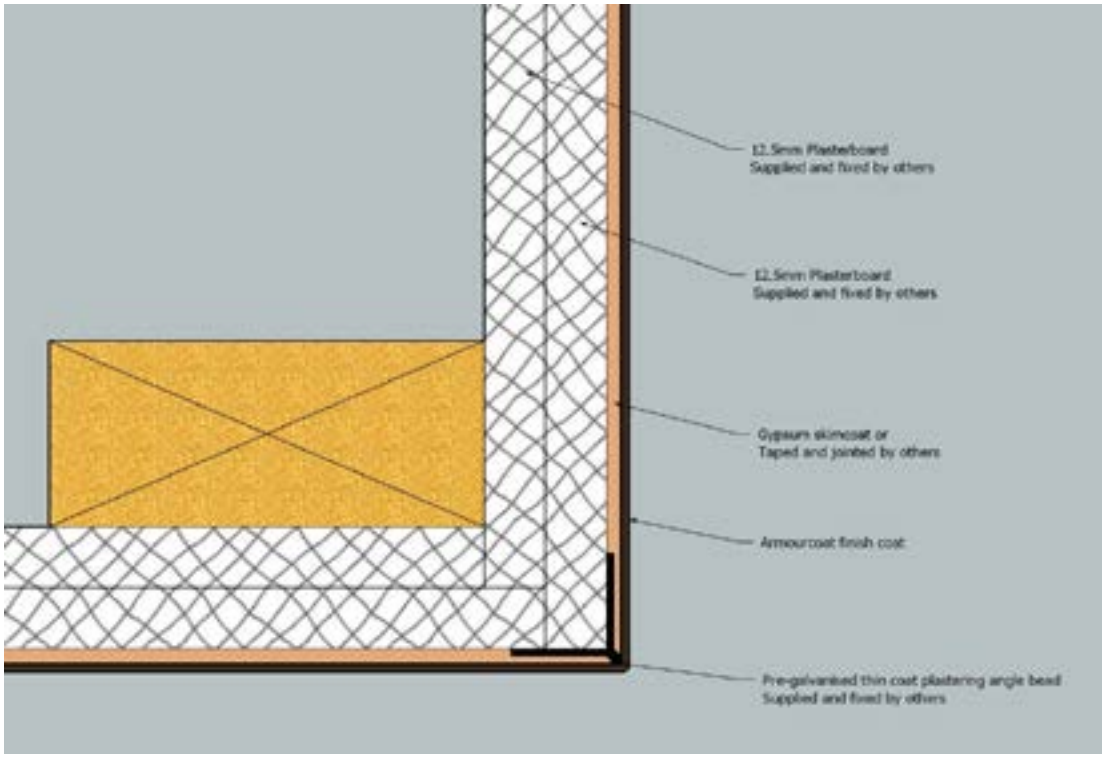
Plaster must be allowed to dry fully and then be primed with a mist coat of matt paint of an suitable wallboard primer.

Sealing before surface is dry will cause de-lamination or disfiguration of finish.

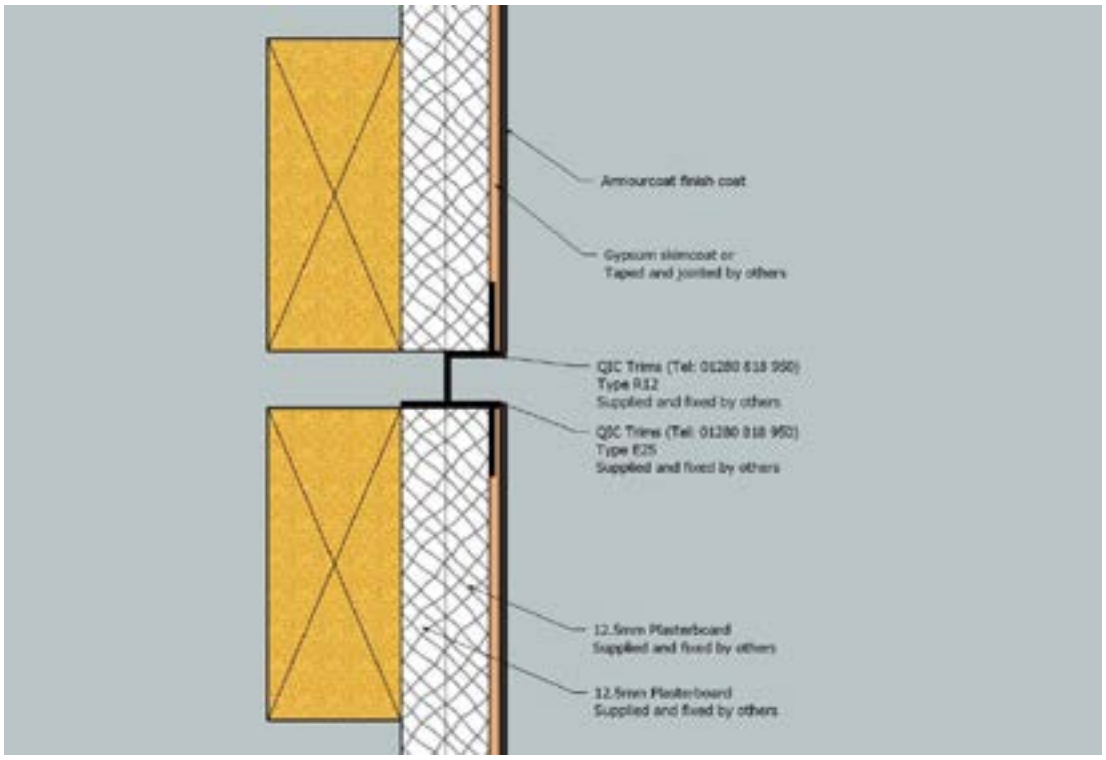
3.4. DIAGRAMS

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

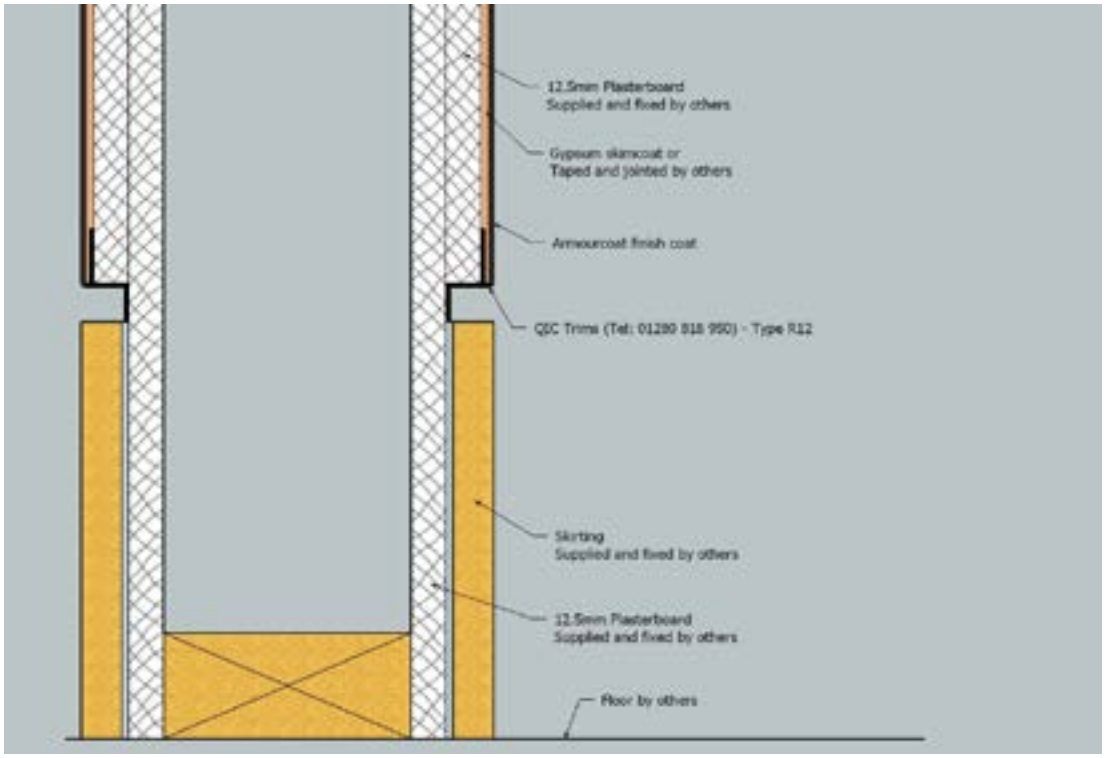
3.4.1. 90 degree corner detail for skimmed / taped & jointed plasterboard substrates



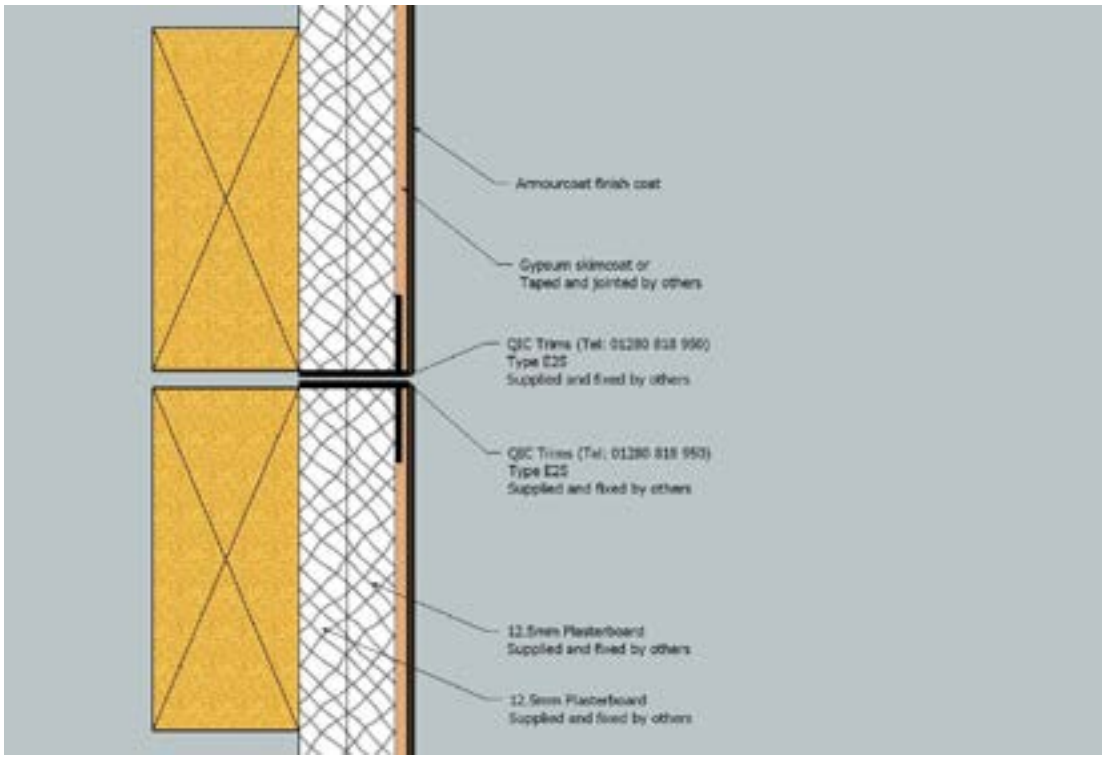
3.4.2. Shadow gap detail for skimmed / taped & jointed plasterboard substrates



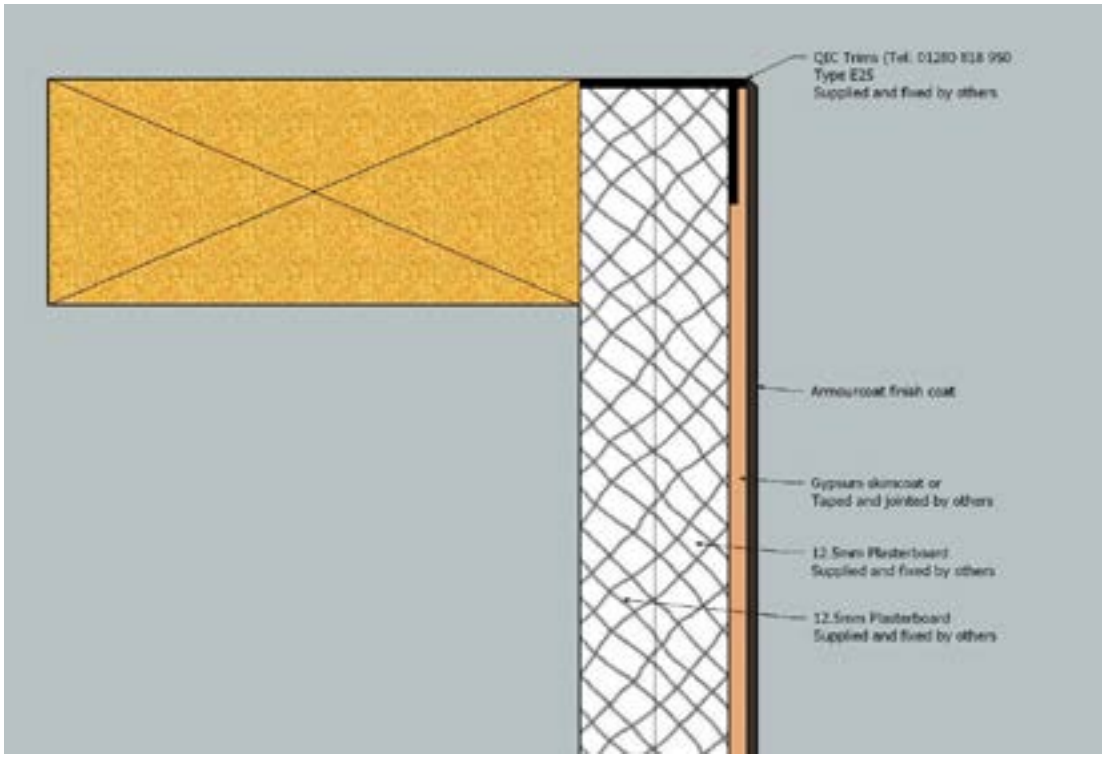
3.4.3. Skirting detail for skimmed / taped & jointed plasterboard substrates



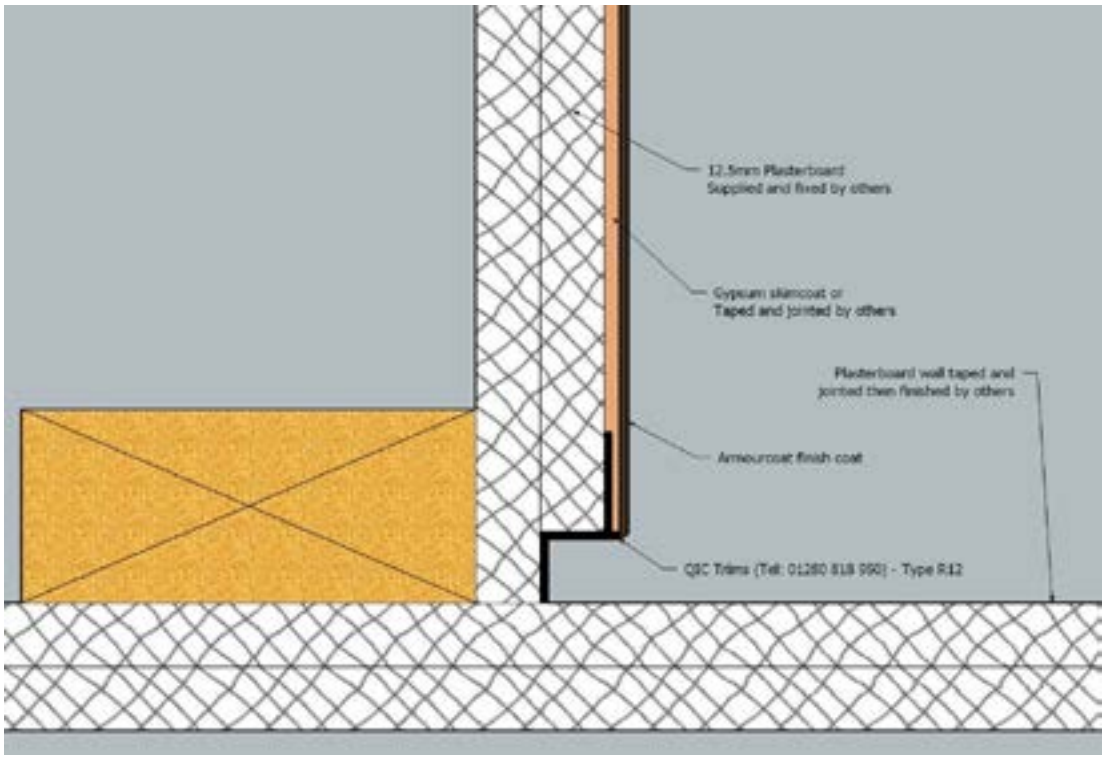
3.4.4. Expansion joint detail for skimmed / taped & jointed plasterboard substrates



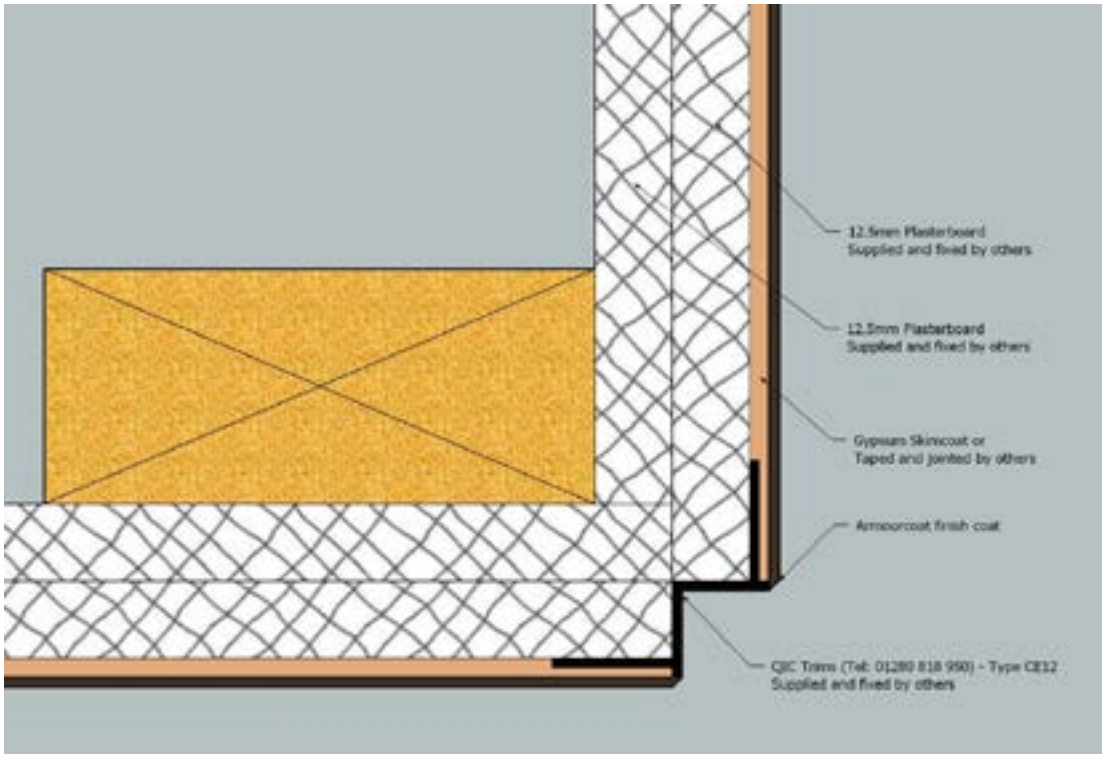
3.4.5. Reveal trim detail for skimmed / taped & jointed plasterboard substrates



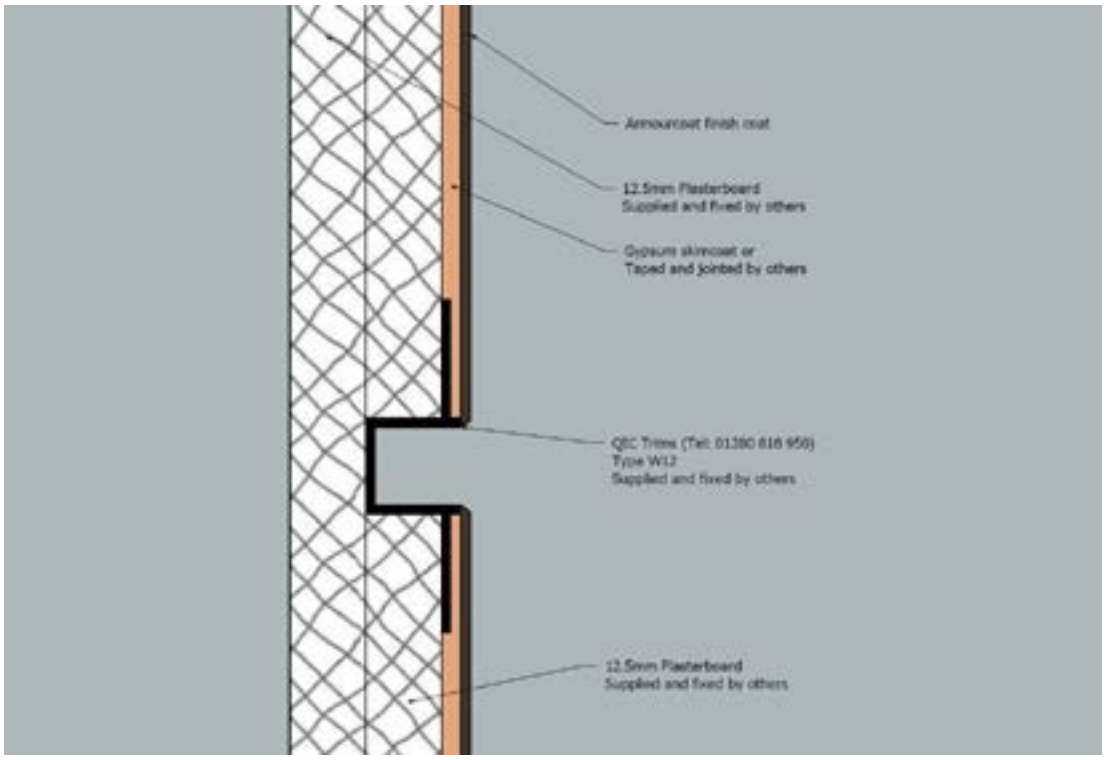
3.4.6. Shadow gap detail at internal corner for skimmed / taped & jointed plasterboard substrates



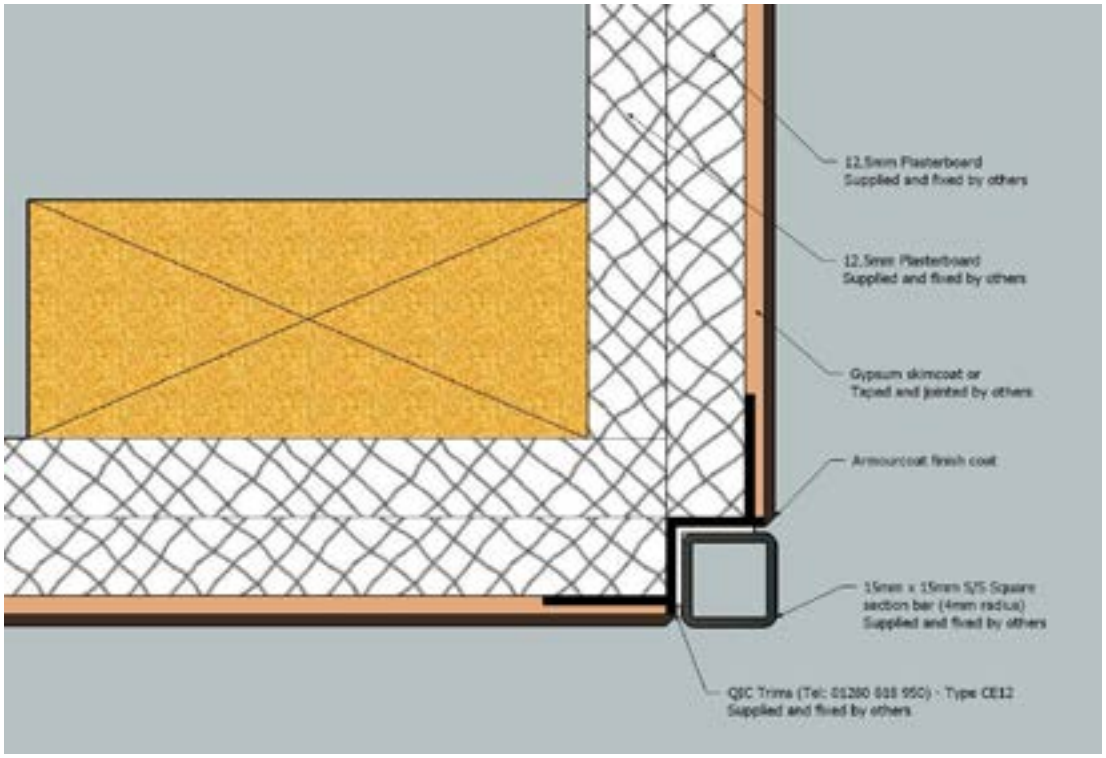
3.4.7. Inverted corner detail for skimmed / taped & jointed plasterboard substrates



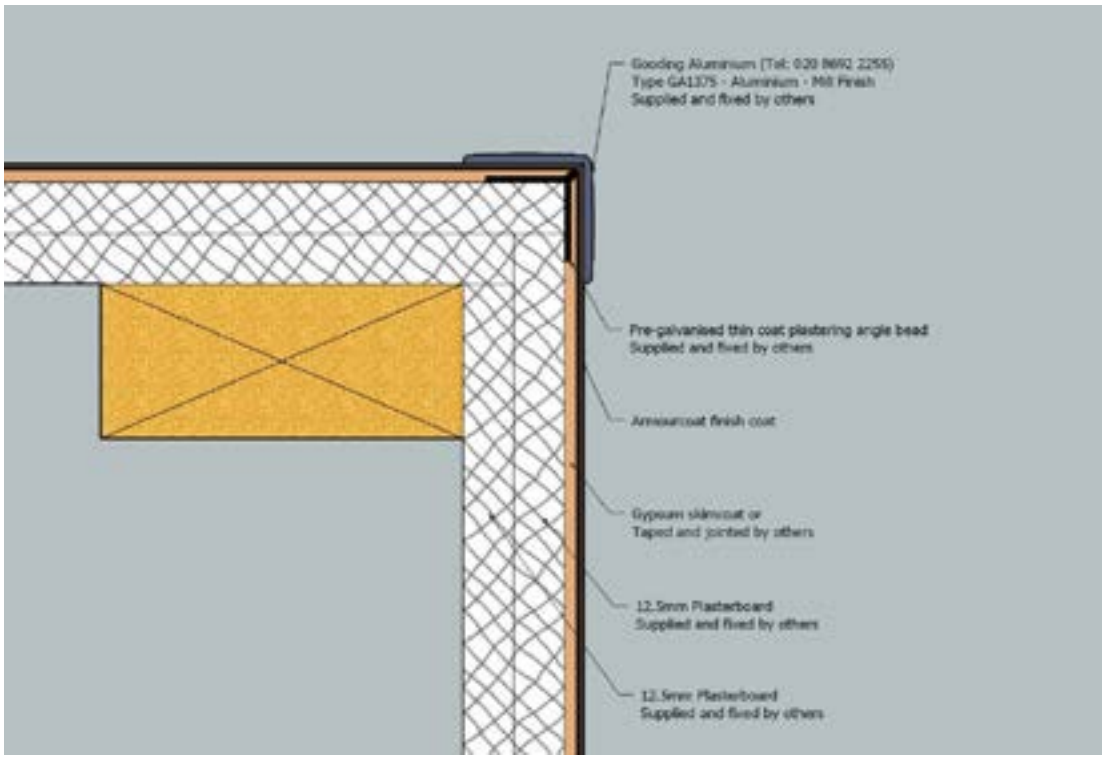
3.4.8. Top hat bead detail for skimmed / taped & jointed plasterboard substrates



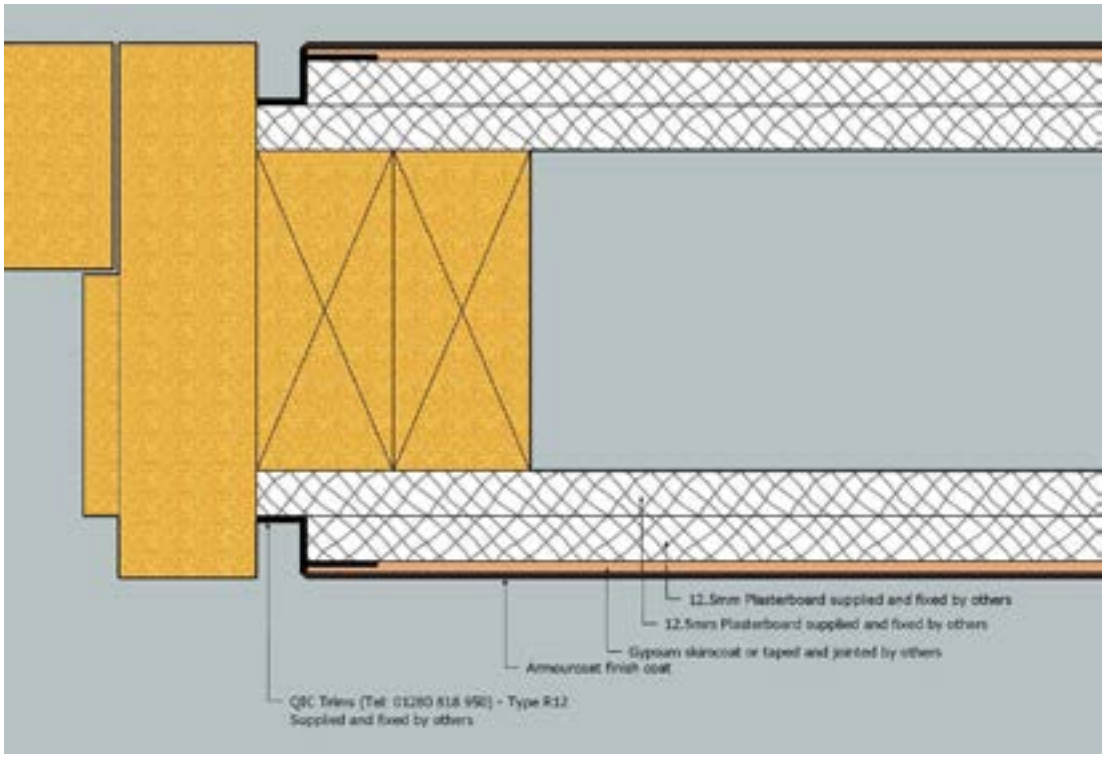
3.4.9. Reinforced metal corner detail for skimmed / taped & jointed plasterboard substrates



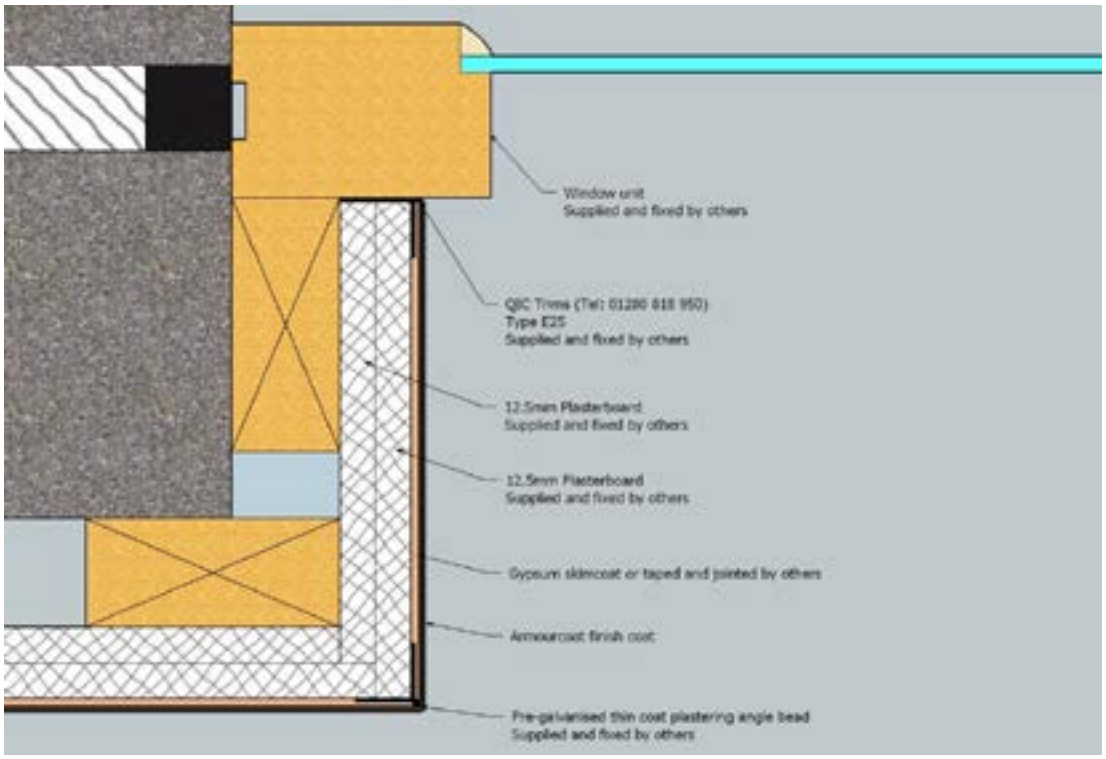
3.4.10. 90 degree corner detail with protective angle for skimmed / taped & jointed plasterboard substrates



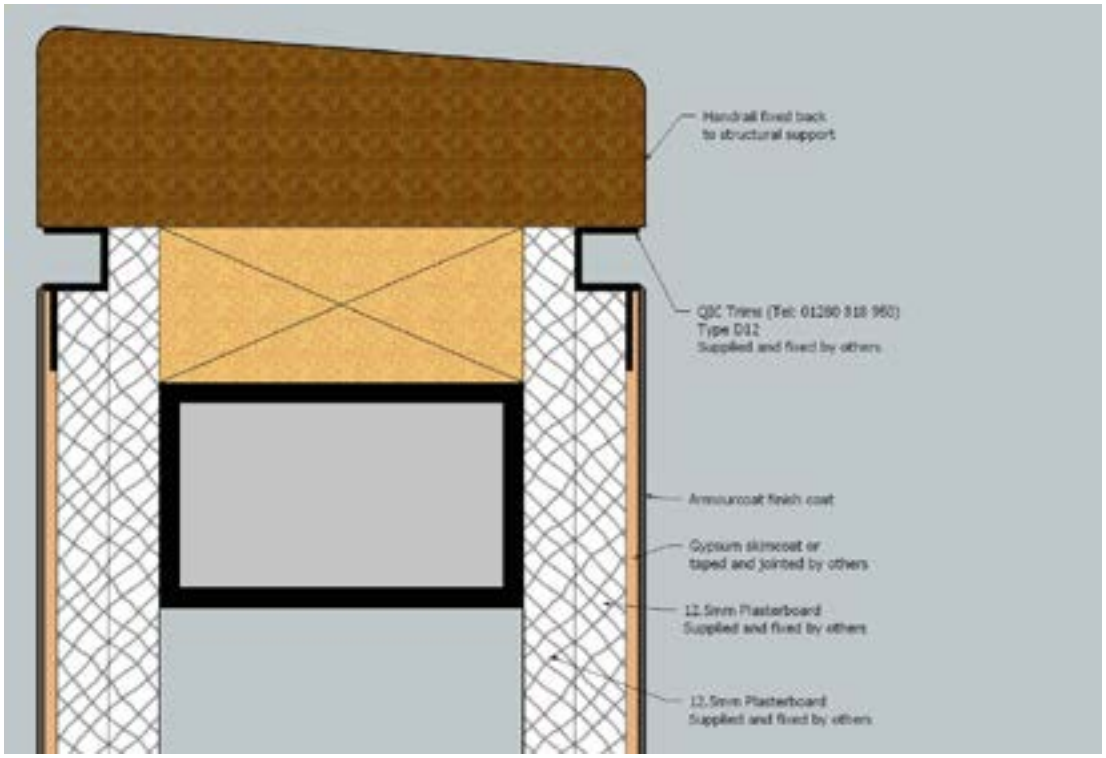
3.4.11. Shadow gap door junction detail for skimmed / taped & jointed plasterboard substrates



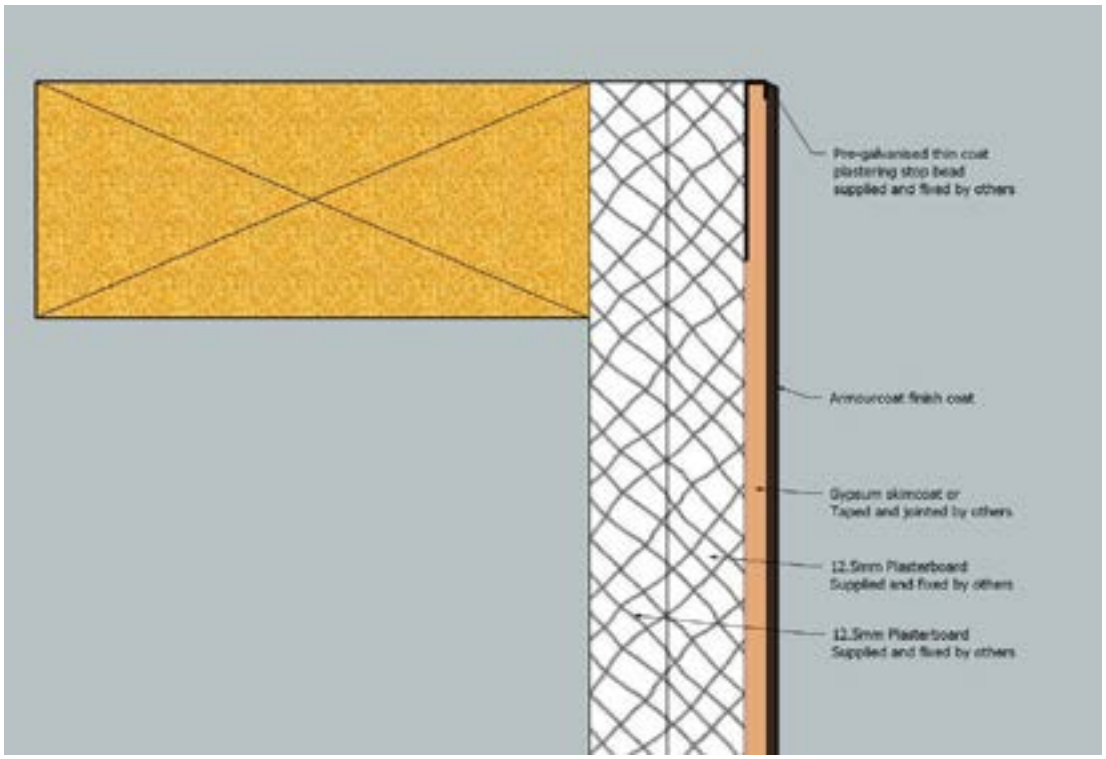
3.4.12. Window reveal detail for skimmed / taped & jointed plasterboard substrates



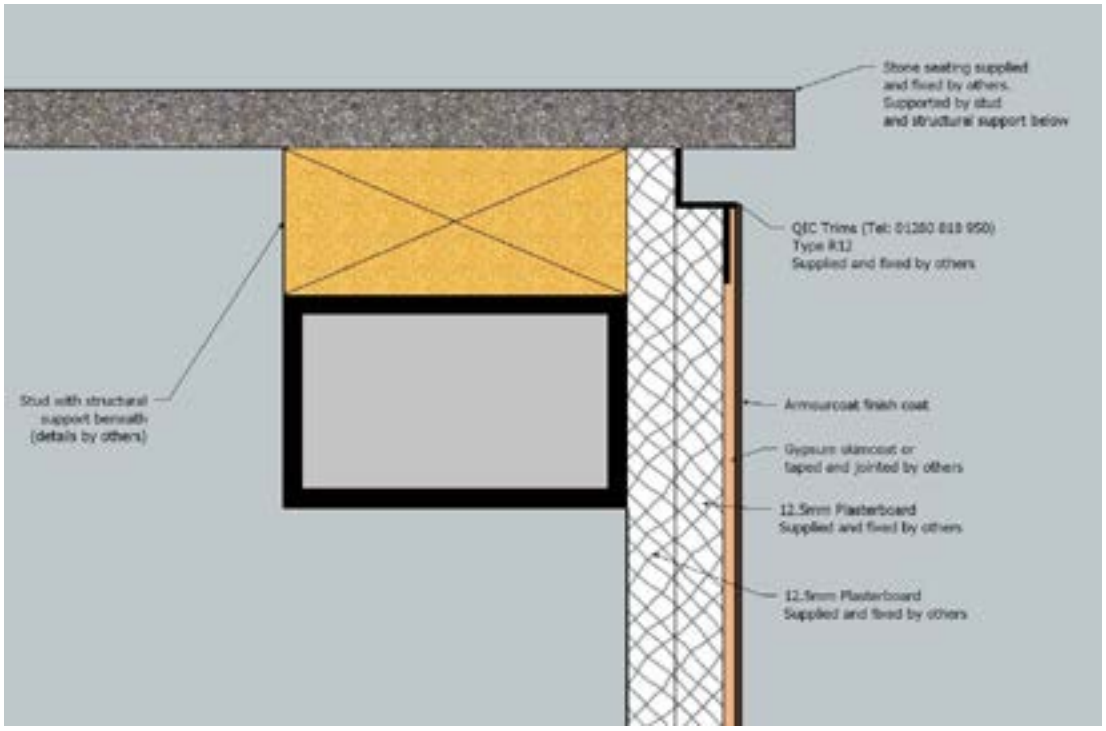
3.4.13. Balustrade top detail for skimmed / taped & jointed plasterboard substrates



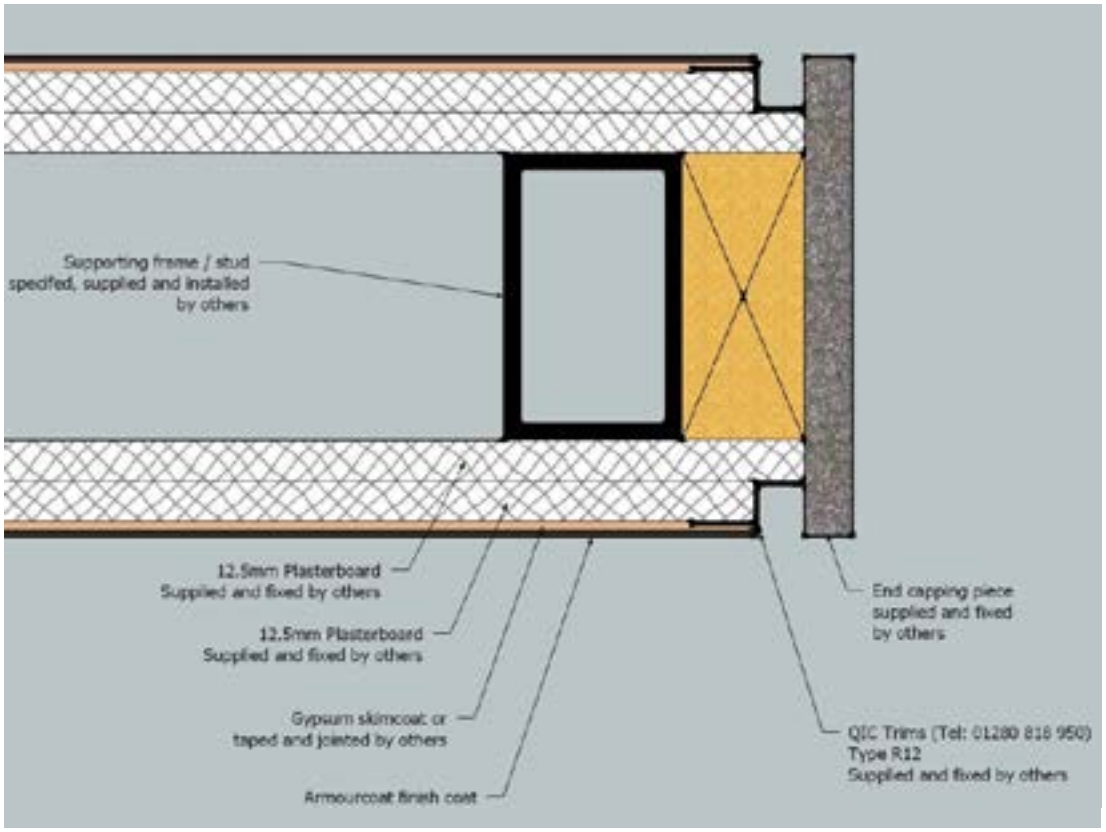
3.4.14. Stop bead detail for skimmed / taped & jointed plasterboard substrates



3.4.15. Stone seat detail for skimmed / taped & jointed plasterboard substrates



3.4.16. Protective wall end cap detail for skimmed / taped & jointed plasterboard substrates



4. CARE AND MAINTENANCE

4.1. CLEANING SURFACE DIRT AND GRIME

The quickest and simplest way of removing small areas of surface grime and finger marks is to rub the affected area with a pencil eraser. The eraser will remove all but the most stubborn surface marks without affecting the surface of the plaster in any way.

Larger areas may need to be cleaned with Armourcoat soap sealer diluted with water. Clean the surface with a 1:5 mixture Soap sealer and water using a microfibre mop and towels to dry the surface. Under no circumstances use acid-based cleaners for this process as they will cause permanent damage to the walls.

Once the surface is clean and dry apply Armourcoat Ecowax and buff the surface with a clean cloth.

4.2. CLEANING SCUFF MARKS

If the surface of the plaster has been scuffed with a shoe or plastic item and cannot be removed with a pencil rubber, try the following method:

Take some masking tape and press it firmly onto the affected area and then pull directly off. Repeat this process 2 or 3 times or until the mark has been removed.

4.3. STUBBORN MARKS

If you are unable to remove any mark using a pencil rubber or masking tape it may be necessary to lightly sand the surface in the affected area. Sand the surface lightly with 600 grit sandpaper followed by 1000 grit to bring back the polish. Do not sand heavily in a small area as this may cause a dip. Avoid sanding too far into the surface as this will expose a greater amount of marble grain and affect the pattern.

Re-apply wax polish and buff up the surface.

4.4. REPAIRS

Armourcoat P01/P80 can be repaired if the surface is impacted, or the corner gets chipped. This is best done by a craftsperson skilled in the application of the material.

Small repairs will not be obvious but larger repairs or patches will be noticeable and may necessitate a reapplication to the surface from corner to corner.

4.5. GENERAL MAINTENANCE

There are two primary ways to keep Polished Plaster finishes looking and functioning great – wiping them down whenever you notice any surface grime and then refreshing their protection coats every few years.

Armourcoat recommends that every 3-5 years wax and sealer coats are reapplied to enhance both the finishes protection and aesthetics - thus extending the products life cycle.

5. WARRANTY

10-year materials warranty for interior use.