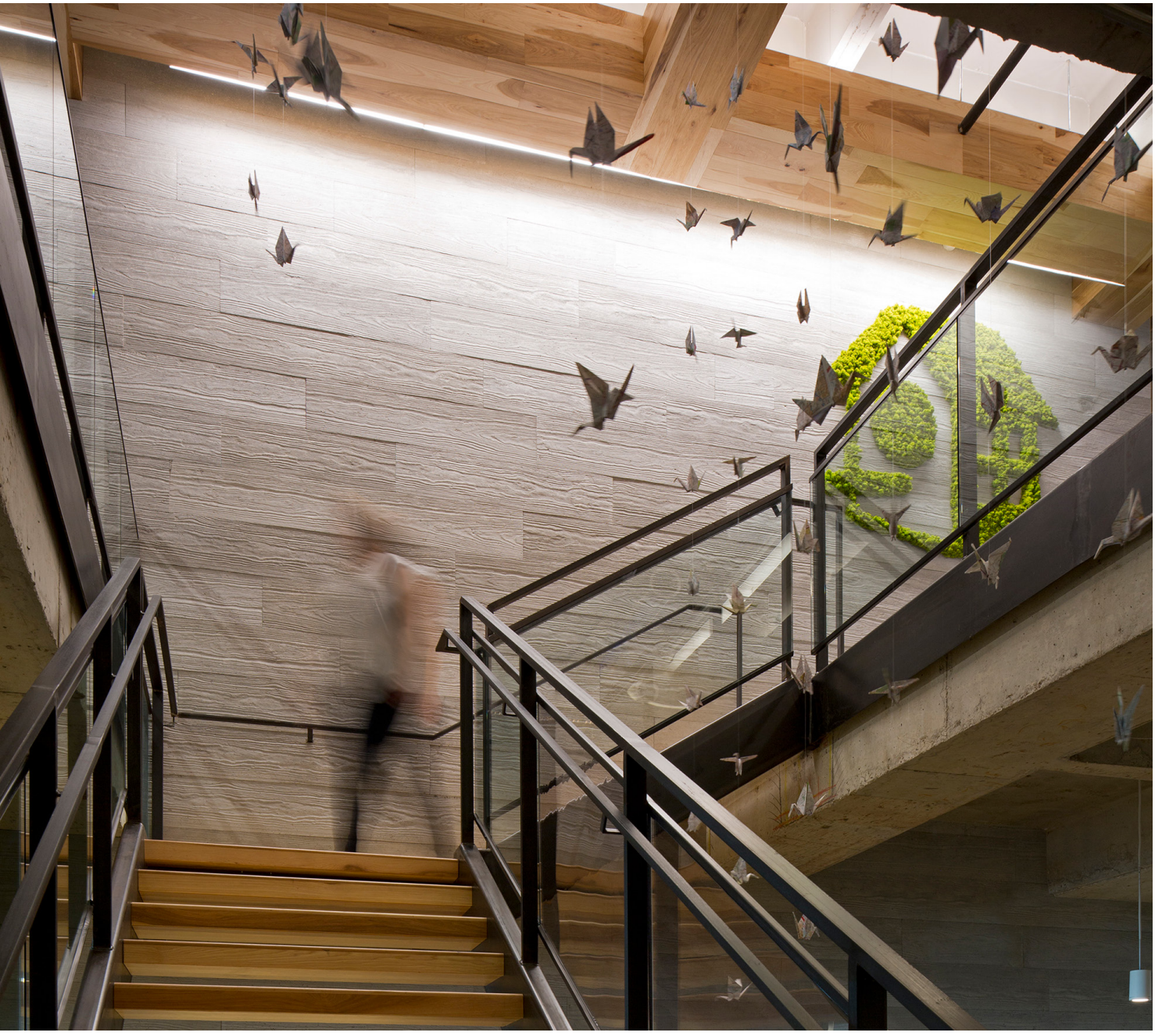
ARMOURCOAT®

SUSTAINABLE LUXURY FINISHES

TECHNICAL DOCUMENT

CAST PANELS - TIMBER EFFECT



TECHNICAL DOCUMENT

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CAST PANELS - TIMBER EFFECT

1. PRODUCT DESCRIPTION

Armourcoat Timber Effect pre-cast gypsum planks emulate concrete that has been cast against Douglas fir boards that have been etched to highlight the natural grain of the wood. Timber planks are suitable for retail, commercial or residential applications. The panels are typically bonded to the substrate with Bondplast which is a gypsum adhesive.

Timber Effect planks are available in the following finish options:

Timber Effect Original – Created from lightly etched Douglas Fir planks
Timber Effect Rugged – Created from weathered and deeply etched Douglas Fir planks
Timber Effect Shuttered - Created from narrower natural sawn timber with offset joints
Timber Effect Cinder – Created from Douglas fir that has been deeply charred to create a 'Shou Sugi Ban' surface that has been widely used in Japan.

Properties

- Beautiful wood effect planks
- Four different designs available for interior use
- A1 fire Classification EN 13501
- Class 1 fire classification ASTM E84
- No measurable VOC content
- No off gassing
- Environmental Product Declaration
- Health Product Declaration
- LBC Red List Compliant

1.1. MATERIALS AND COMPOSITION

Armourcoat Timber Effect planks are manufactured from high strength gypsum combined with natural mineral aggregates and post-consumer recycled lightweight glass filler. Small amounts of black iron oxide pigment are used to achieve the specific colour.

1.2. PANEL DIMENSIONS AND WEIGHT

All four designs are manufactured to the following dimensions and weight:

Original, Shuttered & Cinder - 1800mm x 260mm x 10mm or 5'10" 7/8 x 10"1/4 x 3/8"
Original Shuttered & Cinder - Approx 12.1kg/m^2 or 2.5lb/ft^2

Rugged – 2000mm x 260mm x10mm or 6'6" x 5'10" 7/8 x 10"1/4 x 3/8"
Rugged - Approx 12.1kg/m^2 or 2.5lb/ft^2
Corner detail sections are also available.

(Dimensional manufacturing tolerance of + or - 1.5mm over 1000mm)

All weights and depths (D) do NOT account for 2Kg/m^2 and 2(D)mm for the Armourcoat Bondplast Adhesive.

2. TEST DATA

Armourcoat Timber Effect 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
$A1/A1_{fl}$

2.1.2. American Fire Test Results

Independent tests were carried out in the US for classification of reaction to fire performance in accordance with ASTM E84. (Standard test method for burning characteristic of building materials).

REACTION TO FIRE CLASSIFICATION
Class 1 (fire spread index =0 Smoke Development =0)

2.2. VOLATILE ORGANIC COMPOUND (VOC) TESTING

2.2.1. VOC Content testing

A sample of Armourcoat Timber Effect Components 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

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

Evaluation of result

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 Timber Effect 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)
Indoor Air Comfort Gold®	Pass	Indoor Air Comfort GOLD 8.0 of June 2022
BREEAM International	Exemplary Level	BREEAM International New Construction v6.0 (2021)
LEED v4.1 BETA	Pass	LEED v4.1 BETA for Building Design and Construction (February 2021)

2.2.3. Environments Building Certification

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

BREEAM International – Exemplary status for VOC Emissions

Full Certificates supplied on Request.

2.3. 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).

Global Warming Potential (GWP) 0.22kg CO_2e

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

2.4. HEALTH PRODUCT DECLARATION

Armourcoat Timber Effect 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

2.5. 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 Timber Effect has met this challenge and contains no materials that appear on the LBC Red List - March 2022.

3. SUITABLE SUBSTRATES

Armourcoat Timber Effect 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 and that is inherently stable and unaffected by changes in temperature or humidity.

3.1. STUD WALLS

Substrates should be constructed from one layer of 12.5mm (½") plywood with 600mm (2ft) stud centres. This should then be overclad with 1 layer of 12.5mm (½") foil backed plasterboard. Alternatively, walls can be constructed with 400mm (16") centres and clad with 2 layers of 12.5mm (½") foil backed plasterboard.

3.2. CONCRETE/BRICK/BLOCKWORK WALLS

Armourcoat Timber Effect cast panels can be fixed to solid walls provided the wall surface is plastered flat and smooth. Panels should not be fixed to walls with non-sound decorative surfaces such as flaking paint or peeling wallpaper.

3.3. SUBSTRATE TOLERANCES

It is critical that the substrate to which the panels are to be fixed is solid, flat and true without any sudden bumps or deviations. Bumps or flares in the wall will hinder installation and cause misalignment between panels.

If panels are to run around internal or external corners it is important that these corners are vertical otherwise there will be a step or gap between panels. It is recommended that panels are inset from the edge of walls with internal corners to compensate for any tolerance in the substrate construction.

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

3.4. DESIGN CONSIDERATIONS

Armourcoat Timber Effect panels are suitable for internal use only.

3.4.1. Internal and External Corners

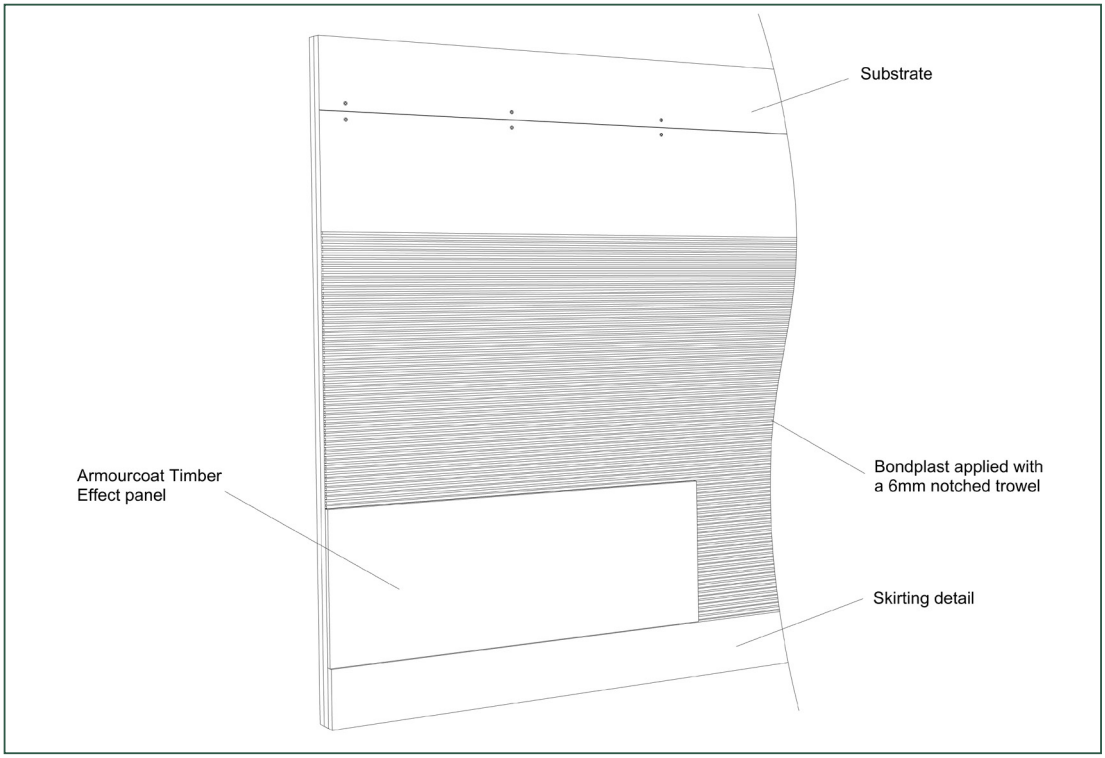
Internal and external corners are achievable with Armourcoat Timber Effect panels. Corners can be achieved with a simple butt joint or a project specific detail. External corner panel sections are available for Armourcoat Timber Effects panels.

3.4.2. Curved Walls

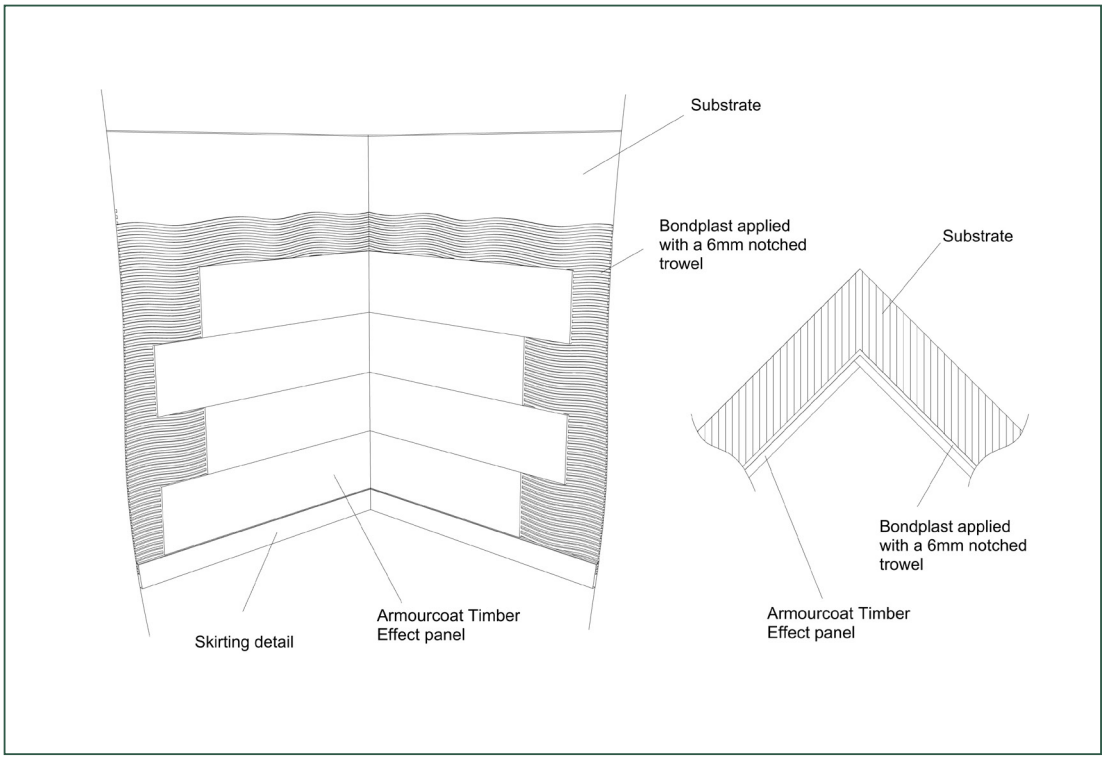
Armourcoat Timber Effect panels can be produced to fixed radii greater than 3m.

3.5. DIAGRAMS

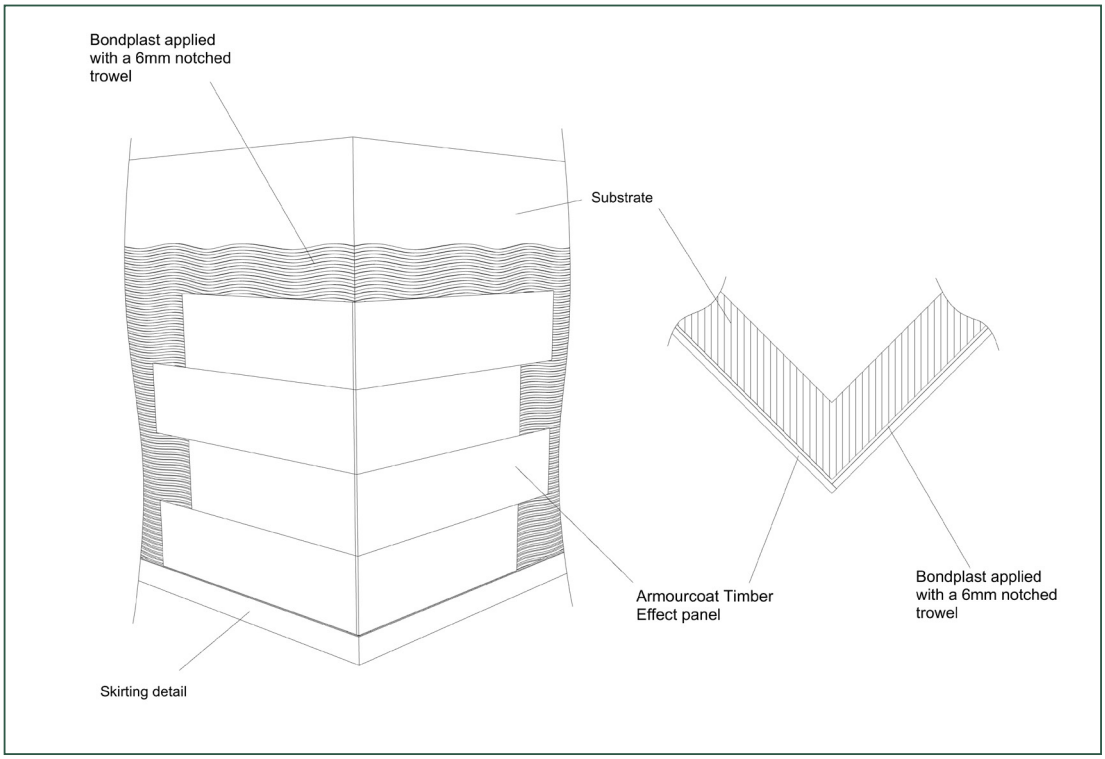
3.5.1. Installation Build up



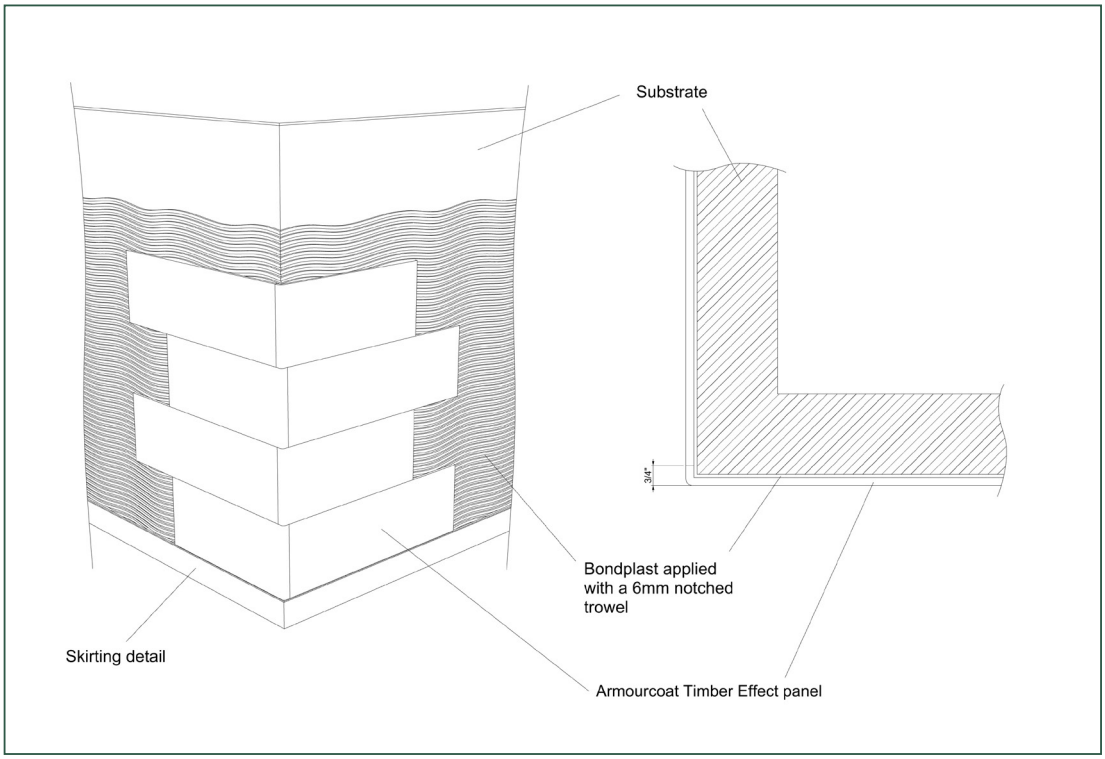
3.5.2. Internal Butted Corner



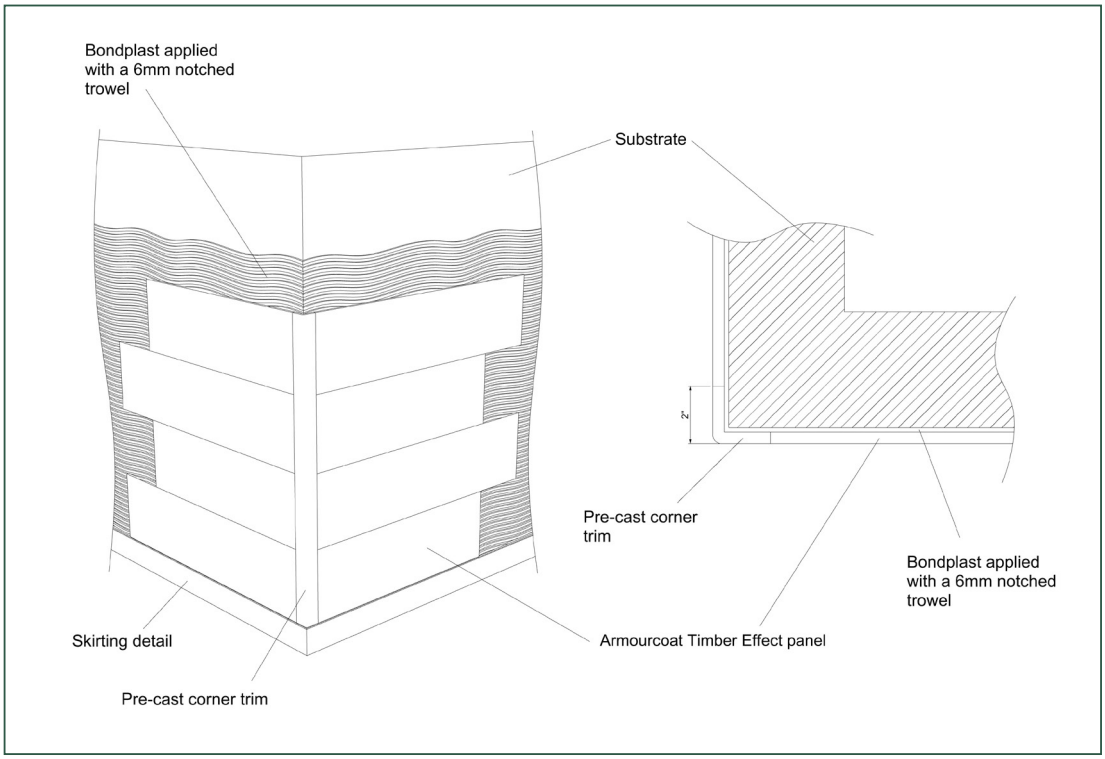
3.5.3. External Butted Corner



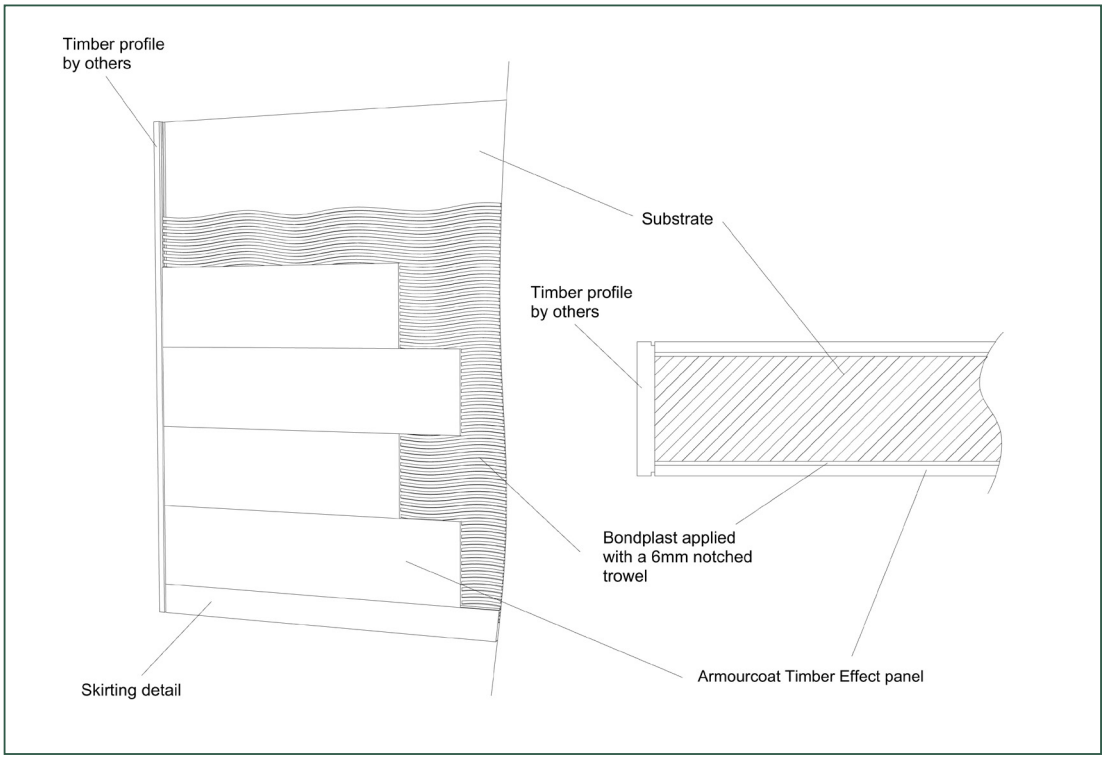
3.5.4. External Precast Corner



3.5.5. External Pre-Cast Corner Trim



3.5.6. External Edge Detail



4. CARE AND MAINTENANCE

Depending on location, Armourcoat Timber Effect panels may require periodic dusting of the surface using a soft dry duster. The interval between removal of the dust will depend upon the local circumstances but should be carried out at least annually. A vacuum cleaner with a brush attachment can also be used to remove the surface dust.

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 in any way.

Larger areas will need to be cleaned with soapy water. First damp down the surface with just water but try not to disturb the dirt. When the surface is wet, clean it with a mixture of water and mild detergent. Wetting the surface first will minimise the amount of dirty water absorbed into the surface.

Under no circumstances use acid-based cleaners for this process, as they may cause permanent damage.

4.2. SCUFF MARKS

If the surface 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. DAMAGE AREAS

Contact Armourcoat or Armourcoat agent installer and arrange for us to do repairs or to re-seal the surface.

5. WARRANTY

10-year materials warranty for interior use.