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Product Data Sheet PDS130: Armourcoat PPX EWI System

1 Product description

The Armourcoat PPX EWI System includes a polymermodified limestone render system suitable for new build and renovation projects producing stunning honed and textured decorative stone like surface finishes. The Armourcoat PPX EWI System PPX offers a low maintenance, durable weatherproof coating for building exteriors or areas prone to moisture. Using high tech hydrophobic polymer technology the two coat Armourcoat PPX Topcoat finish incorporates crushed marble, lime and cement to achieve stunning surface finishes. It creates a durable vapour permeable decorative layer which is suitable for most substrates (including brick, block, masonry, stone, cement board and mineral wool board).

- Armourcoat PPX EWI System - (PPX - Polished Plaster External)
- created by Armourcoat the global surface finishes expert
- first to market 'polished plaster' solution for external applications
- a polymer-modified limestone external render suitable for new build and renovation projects
- offers a durable weatherproof vapour permeable decorative layer
- available in a stunning range of natural stone colours and finishes
- incorporating 50% limestone (topcoat recycled content)
- suitable for most substrates including brickwork, blockwork, masonry or stone backgrounds, cement board and EPS foam insulation board
- part of ETAG approved EWI (External Wall Insulation) system to offer outstanding thermal insulation and fire safety to the exterior of the building
- EWI system increases energy efficiency and reduces building maintenance
- EWI system tested to ETAG-004 by Lucideon - independent material testing

2 System components

The Armourcoat PPX EWI System provides outstanding thermal insulation tested to stringent ETAG (European Technical Approval Guidelines) standards.

Insulation layer - The Armourcoat PPX EWI System uses Rockwool External Wall DD Slab board. The board is fixed by adhesive (Armourcoat PPX Basecoat) or mechanical fixings (Armourcoat CN8 fixings) or a combination of both.

Mesh layer - Armourcoat's premium alkali resistant mesh cloth is embedded onto the insulation board using Armourcoat PPX Basecoat. This provides both reinforcement, impact and crack resistance together with tensile strength.

Base layer - Armourcoat PPX Basecoat render is then applied at a thickness of 6-8mm with a maximum thickness of 10-12mm in one coat. The high performance material provides the perfect base for Armourcoat PPX topcoat and creates a high performance durable coating.

Top layer - Armourcoat PPX Topcoat creates the distinctive Armourcoat honed and textured stone like finish. A natural mineral material including Italian marble, cement and lime, Armourcoat PPX can be used to create a stunning array of decorative finishes and effects.

Protective sealer layer - Armourcoat Sealer 56 is used to provide enhanced protection from staining together with UV, abrasion and water resistance.

3 Suitable substrates

Armourcoat PPX Basecoat can be used over brickwork, blockwork, masonry or stone backgrounds and cement board. Armourcoat offers no advice on the construction of such substrates.

Armourcoat PPX can also be applied over mineral wool board and when specified this makes up part of the Armourcoat PPX system. The application of Armourcoat K40 Primer is recommended onto most substrates to even out the suction between the brick or blocks and the mortar joints or on high suction backgrounds to reduce the absorbency of the substrate.

EWI refurbishment of existing buildings

EWI systems are the preferred choice providing a cost effective method of renovation of traditional buildings requiring thermal performance improvements. There are an estimated 7 million buildings in the UK built from single skin solid walls and a smaller number of non traditional construction methods including precast concrete and steel frames. In these buildings the structural wall is cold and damp with an increased risk of mould and condensation. Even in buildings designed with cavity wall insulation the unprotected outer leaf construction is at risk of cold bridging and weather damage. Most existing buildings do not meet the standards set by modern Building Regulations with increasing costs of heating and maintenance a central issue for both commercial redevelopment and domestic refurbishment.

Architects and designers can transform the external façade of existing building through the specification of Armourcoat PPX and in combination with the Armourcoat PPX EWI System to upgrade thermal performance, fire safety and appearance. The wide range of colours and finishes based on Armourcoat's highly regarded polished plaster surfaces can create original and highly aesthetic façades including application of banding and stencil techniques.

The Armourcoat PPX EWI System provides instant savings in energy costs through improved thermal performance whilst protecting and enhancing the appearance of the exterior of the building.

EWI new build and substrate systems for new build

EWI systems provide the specifier with modern design options to create original and innovative building façades for new build projects. Meeting and often exceeding Building Regulation requirements for thermal performance, EWI systems even achieve standards for demanding projects including sustainable low energy buildings such as Passivehouse designs.

Suitable for all types of substrates including brick, block, masonry, timber or lightweight metal frame the PPX EWI system works to compliment or contrast with other building materials including stone, glass and timber. The Armourcoat PPX topcoat can create stunning stone like finishes in a wide range of colour and finishes which can incorporate detail elements such as branding, logos and stencil designs.

- **steel frame construction**
an external skin of cement particle board (CPB) is applied to the steel framework to provide insulation within the frame and external face. This enables a fast track panellised system for rapid construction
- **timber frame construction**
an external skin of oriented strand board (OSB) or sterling board is applied to the timber framework. Detailing will include emphasis on possible increased structural movement
- **masonry construction**
a traditional method where the internal load bearing wall (including concrete blocks, aerated blocks, thin joint systems and single skin brick construction) with stainless steel ties to an outer wall of either brick or block
- **SIPS (structural insulated panel systems) construction**
an alternative to traditional construction methods SIPS incorporate high performance insulation with CPB/OSB fixed to both sides
- **modular construction**
another modern method using pre-finished 'Volumetric' pods typically complete with external finishes and services ready for on site assembly
- **ICF (insulating concrete form) construction**
EPS formwork system with concrete core offering enhanced thermal and acoustic properties along with design flexibility

4 Health & Safety

Armourcoat PPX is a powdered product and a dust mask should always be worn when mixing or handling the product. The product contains hydrated lime and cement that can act as an irritant. Wear protective clothing specifically gloves and eye protection. If contact occurs wash affected areas immediately with soap and water.

5 Test data

Hygrothermal testing was done in accordance with the method given in ETAG 004:2013 Guideline for Technical Approval of External Thermal Insulation Composite Systems with Rendering.

System one tested was Rockwool External Wall DD Slab (100mm) with Armourcoat PPX Basecoat, Armourcoat PPX Topcoat and Sealer 56.

Test	ETAG 004 Clause	Requirement	Pass/Fail
Hygrothermal Performance - Wall	5.1.3.2.1	No cracking, blistering, peeling or delamination	Pass
Bond Strength - Wall	5.1.4.1.1	$\geq 0.08 \text{ N/mm}^2$ or cohesive failure of insulation	Pass
Hard Body Impact Resistance - Wall	5.1.3.3; ISO 7892:1998	Category I, II or III	Category II
Bond Strength Control - Small Samples	5.1.4.1.1	$\geq 0.08 \text{ N/mm}^2$ or cohesive failure of insulation	Pass
Capillary Test - Small Samples Basecoat only	5.1.3.1	$< 0.5 \text{ Kg/m}^2$ after 24 Hours	Pass
Capillary Test - Small Samples Full system including Sealer 56	5.1.3.1	$< 0.5 \text{ Kg/m}^2$ after 24 Hours	Pass

System two tested was Armourcoat PPX Basecoat, Armourcoat PPX Topcoat and Matt Sealer 52.

Test	ETAG 004 Clause	Requirement	Pass/Fail
Hygrothermal Performance - Wall	5.1.3.2.1	No cracking, blistering, peeling or delamination	Pass
Bond Strength - Wall	5.1.4.1.1	$\geq 0.08 \text{ N/mm}^2$ or cohesive failure of insulation	Pass
Hard Body Impact Resistance - Wall	5.1.3.3; ISO 7892:1998	Category I, II or III	Category II

6 Coverage rates

Armourcoat PPX Basecoat

Coverage guide rates are on the basis of 1.2 kg per m^2 at 1mm thickness.
One 18kg bag will cover 2- 2.5 m^2 at 6-8mm thickness.

Armourcoat PPX Topcoat

The application is over Armourcoat PPX Basecoat which has fully dried.

The system demands a prep coat and then 2 finishing coats as standard guidance.

Coverage guide rate is 1kg per coat so 3 kg per m^2 is a guide for the standard application.

7 Storage

Store in dry conditions between 5 and 25°C .
Protect from frost.
Protect from sunlight and sources of direct heat.
Keep container sealed when not in use.

Shelf life in unopened container under correct storage conditions is 24 months from date of manufacture.

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