Product Data Sheet 6

ArmourCast

1 Product Description

ArmourCast is a unique composition of crushed marble, gypsum, polymers and special additives used to create stunning three-dimensional cast designs that look and feel like stone.
The material and manufacture process are ideally suited to creating shapes and designs that are too complex for a trowel applied stone finish like Armourcoat polished plaster.
ArmourCast is available in five base colours that can be combined in varying proportions to create a wide array of natural stone colours without the addition of any pigment.

The colours and crushed marble from which they are composed is as follows:

White ArmourCast	Bianco Carrera Marble
Yellow ArmourCast	Giallo Mori Marble
Red ArmourCast	Rosso Verona Marble
Green ArmourCast	Verde Alpi Marble
Black ArmourCast	Nero Ebano Marble

Marble granules or vermiculite can also be added to impart more texture to the surface and coloured mica flakes to add further visual interest.

2 Properties

- Natural mineral material.
- Contains no VOC's.
- Powder product unaffected by frost.
- Wide range of stone finishes achievable.
- Wide range of colours available.
- Easily repaired. No colour bleed caused by pigment migration.
- Cast items can be de-moulded quickly, enabling quick turnaround times.
- Lightweight. When laminated with glass fibre reinforcement, ArmourCast can be used to produce large and complex shapes without being excessively heavy.
- Nominal weight 7 – 15 kg M^2.
- High compressive strength 22-30 N/mm^2 (3000 – 4200 lb/in^2).
- Completely non-combustible and rated as Class 'O' for flame and smoke tested to BS476 part 6 & 7.

3 Health and Safety

ArmourCast is a powdered product and a dust mask should always be worn when mixing or handling the product. Wear protective clothing, gloves and eye protection, and if contact occurs wash immediately with soap and water.
Do not allow the product to set hard on your skin, as it will be very hard to remove.

4 Moulds

As with all cast products the accuracy and quality of the mould is a crucial factor in achieving good results. Moulds can be made of rubber, lacquered and waxed MDF or even GRP (glass reinforced polyester), and the type you choose will be dependent upon:

- The complexity and detail demands of the object.
- The size and shape of the object .
- The number of repeat pieces that need to be cast from the mould.

Other than silicone rubber moulds, all other types of mould should have a release wax applied to the face of the mould prior to casting.

5 Blending and Mixing ArmourCast

Tip the required number of measures of each ArmourCast base colour to achieve the required formula into a large mixing vessel along with any mica flakes, vermiculite or marble granules required in the formulation and stir thoroughly with a mechanical mixer to achieve a homogenous mix. Keep dry and covered.

The ArmourCast formulation premix is then mixed with a gauging liquid comprising of R13 resin and water in a ratio of 1:4 resin:water.
The amount of gauging is dependant upon the consistency of mix required and the application method to be used.
Approximate liquid requirements are as follows:

Spray application	2.1 litres per 10kg
Dry pack method	1.7 litres per 10kg

For spray application, place the required quantity of gauging liquid in a mixing vessel and slowly add the ArmourCast powder blend. Leave the material for a few minutes to allow the air to bubble out and then stir the material with a mechanical mixer until a consistent lump free mix is achieved.

Do not over-mix the material as this can cause air entrapment in the mix and lead to air bubbles in the face of the casting.

For Dry-pack application, it is important not to try and mix too much material at a time and use a large mixing vessel so that the material can move around freely in the bottom of the mixing vessel without becoming too compacted.

For full mixing and application instructions see ArmourCast Application Guide.

6 Fibreglass and Backing Gypsum

In order to create high strength, light-weight casting we recommend you use 2 layers of a glass fibre matting of approx. 225 g /m^2.
Chopped strand glass fibre can also be used. We recommend that you use a 12 mm (1/2 inch) clumped fibre at an addition level of ~ 4% by weight relative to the backing gypsum. These products are available from Saint Gobain Vetrotex.

The gypsum used for the backing and reinforcement should ideally be a high strength, low expansion alpha gypsum.
The Gypsum should not require a plaster : water ratio in excess of 38:100 and should have a minimum dry compressive strength of at least 25 N/mm^2 or (3500 lb/in^2)

7 Test Data

7.1 British Fire Test Results

BS 476: Part 6: 1989

Fire propagation index,1	0.1
Subindex,i1	0.0
Subindex,i2	0.1
Subindex,i3	0.0

BS476: Part7: 1997
Class 1 surface spread of flame.

ARMOURCOAT ArmourCast complies with requirements for CLASS 0 AS DEFINED IN PARAGRAPH a12(B) of Approved Document B, 'Fire Safety', to the Building Regulations 1991.

8 Coverage Rates

ArmourCast is supplied in 25 kg units.
Coverage rates: ~ 4 – 8 kg/m^2 .

9 Storage

Store in good dry conditions between 5 – 25°C. The shelf life of ArmourCast in unopened original packaging, under correct storage conditions is 12 months from date of manufacture.

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