

Expanbrush*



CONSTRUCTION CHEMISTRY

Acrylic polymer modified, flexible protective and decorative coating for concrete and masonry

Uses

To protect atmospherically exposed reinforced concrete structures from attack by acid gases, chloride ions, oxygen and water. The product is also suitable to protect other cementitious substrates and masonry for new and existing structures. Typical applications include :

Re-facing and re-profiling concrete & masonry surfaces
Flexible coating to bridge shrinkage cracks
Waterproof coating for water tanks and reservoirs
Robust coating which can withstand pedestrian traffic.

Advantages

- Excellent barrier to carbon dioxide, chloride ions and water
- Allows water vapour to escape from the structure
- Water proof - suitable for water retaining structures
- High resistance to the effects of long-term weathering, durable in all climatic conditions including UV attack
- Minimum surface preparation needed and low labour costs
- Non toxic - ideal for potable water tanks
- Flexible, with thermal expansion similar to concrete
- Covers honeycombed and pitted poured concrete effectively, can be use to repair cracks.
- Good abrasion resistance

Standards compliance

Tested to : BS6920 (section 4.2.8 immersion test) ASTM C307

Description

Expanbrush* comprises a two component acrylic polymer modified cementitious coating supplied in ready to mix kits. Expanbrush* can be simply applied by stiff brush, roller, spray or trowel to obtain the desired texture.

Design criteria

The coating should be applied in two coats to achieve a total dry film thickness of not less than 2mm. Areas subjected to light foot traffic should receive minimum 2mm thickness and an additional 2mm coating should be applied to areas of moderate to heavy pedestrian conditions. To achieve the correct protective properties, Expanbrush* must be applied on to the substrate at the coverage rates recommended.

Properties

Pot life	: 1 hour @ 20°C 20 mins @ 35°C
Colours	: grey and white, special colours on request
Application temp	: not less than 5°C
Toxicity	: to BS6920 section 4.2.8 immersion test – negligible effect on potable water.
Properties (cured)	: Expanbrush* Slurry
coat Tensile strength (ASTM C307)	: 3.75 N/mm ² 2.0 N/mm ²
Flexural strength	: 11 N/mm ² 4 N/mm ²
Bond strength:	: 3.5 N/mm ² 0.5 N/mm ²
Chloride ion resistance	: coated uncoated
1 month (% Cl detected)	: 0.0004 0.0063
6 months (% Cl detected):	: 0.0004 0.0344
Moisture vapour Permeability flux (g/m² /day)	: 204 844
Carbonation resistance depth of penetration (mm):	: 1 7

* A 1:3 sand/cement slurry coat adjusted with water for same workability as mixed Expanbrush for brush application

Specification

Acrylic polymer modified protective/decorative coating. The protective coating shall comprise specially selected cements, graded hardwearing aggregates and additives supplied in powder form together with a liquid component of blended acrylic co-polymers and wetting agents. The total dry film thickness of the coating shall be not less than 2 mm and shall be capable of providing resistance to wear and weather and good chemical resistance to mild inorganic acid solution, diesel oil, gasoline, chlorides, de-icing salts, effluents and organic solvents. It shall exhibit positive water pressure resistance up to 7 meter head, dependent on coating thickness.



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Instructions for use

Preparation

All surfaces should be free from contamination such as oil, grease, loose particles, decayed matter, laitance, and all traces of mould release oils and curing compounds. This is best achieved by lightly grit-blasting the surface.

Where moss, algae or similar growths have occurred, treatment with a proprietary biocide should be carried out after the grit-blasting process.

Spalled and deeply disintegrated concrete should be removed to sound concrete and repaired with a Expanchem repair system. For further advice, consult the local Expanchem office.

It is essential that all surfaces to be treated be pre-soaked with clean water prior to application of Expanbrush*.

Mixing

Expanbrush* liquid should be poured from the plastic container into the metal drum. For brush application consistency mix with a slow speed drill (500 r.p.m.) fitted with a Expanchem Mixing Paddle.

The powder component should be added gradually to the liquid to avoid lump formation and mixed for 2 to 4 minutes.

Expanbrush* should be immediately used after mixing. Do not mix more material than can be used within the pot life. Keep mixing Expanbrush* during the application.

Application

Application of Expanbrush* on hot substrates (i.e. over 40°C surface temperature) will need the prior application of a primer coat. Mix Expanbrush* and water in slurry like consistency and apply Expanbrush* over the primer whilst it is still wet.

For best results, surfaces should be damp. In order to obtain the protective properties of Expanbrush*, it is important that the correct rates of application are observed.

Use a short stiff brush (preferably 120 - 200mm width) and apply in one or two coats as required.

Spray applications should use the correct mixing ratio to obtain satisfactory consistency. In hot climatic conditions, it is likely that spray application will be the best for exterior decorative finishes. Nozzle size should be 3-4mm and pressure of 6-8 bars should be used.

It is recommended that for general resurfacing each coat should be 1mm thick. Areas subjected to light foot traffic should receive at least 2mm thickness of Expanbrush* and an additional 2mm should be applied if conditions are moderate to heavy pedestrian traffic.

If in doubt about the condition of the substrate, the local Expanchem office should be consulted.

Cleaning

Expanbrush* should be removed from tools and equipment with clean water immediately after use. Hardened material can be removed mechanically.

Limitations

Where subsequent coatings or paints are required, trials should be conducted to ensure compatibility. For further advice, consult the local Expanchem office.

Expanbrush* should not be applied if the air or substrate temperature is greater than 45°C. This may result in different colour shades.

Expanbrush* should not be applied if the temperature of the substrate is below 5°C.

Expanbrush* should not be applied where there is a likelihood of exposure to frost within 48 hours of the application.

Expanbrush* should not be applied in windy conditions where early-age dust adhesion may occur, or where rain is likely within 2 hours at 20°C or 20 hours at 5°C (up to 80% RH).

Technical support

Expanchem offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.



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Estimating

Supply

Industrial kit : 16 kg pack consisting of:
Powder : 11.50 kg bag
Liquid : 4.50 kg pail

Coverage

Expanbrush : Theoretical 1.65 Kg. / m² @ 1mm thickness - Coverage figures given are theoretical, due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Storage

Shelf life

Combined products have a shelf life of 6 months if kept in a dry store in the original, unopened packs.

Storage conditions

Store in cool, dry conditions, away from sources of heat and naked flames, in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life will be reduced. Expanbrush* liquid component should be protected from frost.

Precautions

Health and safety

Expanbrush* contains cement powders which, when mixed or become damp, release alkalis which can be harmful to the skin. During use, avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing, gloves, eye protection and respiratory protective equipment. The use of barrier creams provide additional skin protection. In case of contact with skin, rinse with plenty of clean water, then cleanse with soap and water. In case of contact with eyes, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately – do not induce vomiting.

Fire

Expanbrush* components are non-flammable. For further information, refer to the product Material Safety Data Sheet.

*Denotes the trademark registered.

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