



constructive solutions

Brushbond

Acrylic polymer modified 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. It is suitable for use on all types of structures, including those in coastal environments. It is equally suitable for new and existing structures. The product is designed to re-face and even out variations in concrete and masonry surfaces and bridge shrinkage cracks. It provides a seamless, protective, flexible waterproof coating suitable for water tanks, reservoirs, wet areas, roofs and bridges. The product provides a tough durable wear resistant coating which can withstand light pedestrian traffic, has excellent weather resistance for exterior applications and provides a decorative function.

Advantages

- Excellent barrier to carbon dioxide, chloride ions and water.
- Allows water vapour to escape from the structure.
- Waterproof - 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.
- Flexible, with thermal expansion similar to concrete.
- Covers honeycombed and pitted poured concrete effectively.

Description

Brushbond comprises a two component acrylic polymer modified cementitious coating supplied in ready to mix kits. It requires only the site addition of clean water to produce an easily brushable coating. Brushbond can be simply applied by stiff brush, roller, spray or trowel to obtain the desired texture.

Technical support

Fosroc offers a comprehensive range of high performance, high quality repair, maintenance and construction products. In addition, Fosroc offers a technical support package to specifiers, end-users and contractors as well as on-site technical assistance in locations all over the world.

Design criteria

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

Properties

Pot life:	70 minutes @ 20°C
ASTM D2471	30 minutes @ 35°C
Mixed Density:	1.5 g/cm ³ (trowelable consistency)
ASTM C905	
Colour:	Grey, white and special colours on request
Application temperature:	Not less than 5°C
Properties (cured):	
Tensile strength:	5.6 N/mm ² @ 28 days
BS 6319-7	
Compressive strength:	33 N/mm ² @ 28 days
BS 6319-2	
Flexural strength:	9.5 N/mm ² @ 28 days
BS 6319-3	
Bond strength:	>1.5 N/mm ²
ASTM D4541	
Chloride ion resistance:	Coated
1 month (% Cl detected):	0.0004
6 month (% Cl detected):	0.0004
Carbonation resistance	
depth of penetration (mm):	1

8 hours test on 7 days aged sample: 86% reduction in carbonation. Brushbond acts as a significant barrier to chloride, stopping a minimum 92% of chloride ions when compared to an uncoated substrate.

Specification clause

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 blend 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.

Application instructions

Preparation

All surfaces which are to receive the coating, must be free from oil, laitance, grease, wax, dirt or any other form of foreign matter which could affect adhesion. Typically, concrete surfaces can be cleaned using a high pressure water jet, blasting or grinding. Poor quality, friable or contaminated concrete may require grit-blasting.

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Spalled surfaces or those containing large blowholes, and other such defects, should be repaired using Brushbond or a Fosroc approved repair mortar.

If the surface contains small blowholes, typically less than 1 mm wide, the coating can be applied directly onto the substrate without the need for a treatment.

Mixing

Brushbond liquid concentrate should be poured from the plastic container into the metal drum provided. An equal volume (4 litres) of clean fresh water is added for brush application consistency and mixing commenced with a propeller agitator attached to a slow speed drill (500 rpm). The powder component should be added gradually to the liquid to avoid lump formation and mixed for 2 to 4 minutes. Brushbond should be immediately used after mixing. Do not mix more material than can be used within the pot life. Keep mixing Brushbond during the application.

Mixing ratio

Application:	Brush	Spray	Trowel
Components:			
Powder:	23	23	23
Liquid:	4	4	4
Water:	4	6-7	2

Application

For best results, surfaces should be damp. In order to obtain the protective properties of Brushbond, it is important that the correct rates of application are observed. Use a short stiff brush preferably 120 - 200 mm width and apply in one or two coats as required. Spray or trowel 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.

The application of Brushbond should not commence if the temperature of the substrate is below 5°C. It is recommended that for general resurfacing each coat should be 1 mm thick. Areas subjected to light foot traffic should receive at least 2 mm thickness of Brushbond and an additional 2 mm should be applied if conditions are moderate to heavy pedestrian traffic.

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

Pre-wetting of the substrate

Thoroughly dampen the substrate surface with water using a brush roller or spray bottle. High porosity substrates will require more dampening than dense substrates. Do not apply the coating when the substrate is wet, but allow the water to soak in until the substrate is just visibly damp prior to proceeding.

Any excess water should be removed using a sponge. Any running water should be stopped with a suitable plugging mortar such as Renderoc Plug. Contact the local Fosroc office for further advice on other suitable water stopping materials.

For optimum use of the product, Brushbond white could be applied as the first coat, with Brushbond grey as the second coat. This gives a visual indication of coverage.

The first coat should be applied at a wet film thickness of 1 mm. To ensure the correct thickness is achieved measure out an area (for example 100 m²) then calculate how much material will be needed to cover this area. Monitor the coating thickness during application at regular intervals using a wet film gauge.

All the mixed material should be used within the material pot life.

Allow the first coat to cure for a minimum of 4 hours at 20°C per 50% RH and longer at lower temperatures or higher humidity's.

The exact drying time will depend on surface temperature, relative humidity and air movement. High temperatures and/or low humidity will reduce the drying time. This can vary from 1 to 16 hours. The first coat should be left to dry until firm and unmarkable to the touch. There is no maximum time between coats, however the surface may need cleaning with water prior to the application of the second coat to remove potential contamination.

The second coat should also be applied at a wet film thickness of 1 mm. Pre-dampening of the surface is not necessary prior to applying the second coat.

No curing membrane is necessary, however the freshly applied coating should be protected from rain and strong wind or until firm to the touch to prevent damage to the wet coating.

Cleaning

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

Limitations

Brushbond is formulated for application to clean, sound concrete or masonry. Where subsequent coatings or paints are required, trials should be conducted to ensure compatibility. Brushbond is compatible with most forms of subsequent coating. Compatibility and soundness should be assessed on a trial area. For further advice, consult the local Fosroc office.



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Application of Brushbond should not commence if the temperature of the substrate is below 5°C.

Brushbond should not be applied where there is a likelihood of exposure to frost within 48 hours of the application. The product 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). It should not be applied when the prevailing relative humidity exceeds 90%.

Coverage (1 mm thickness)

Brush applied:	18 - 20 m ² per kit
Spray applied:	22 - 24 m ² per kit
Trowel applied:	14 - 16 m ² per kit

The coverage figures are theoretical – due to wastage factors and the variety and nature of possible substrates, practical coverage figures will be reduced.

Estimating

Supply

Industrial kit: (27 kg pack consisting of)

Powder:	23 kg bag
Liquid:	4 litre pail

UN packaging regulations

To comply with current regulations, all products of a hazardous nature which are subjected to a sea crossing as part of their delivery requirements, must be packed in UN approved receptacles.

When a known sea crossing is involved, whether locally or for export, Fosroc will supply in the correct UN packaging. Where Fosroc are requested to deliver within a mainland boundary but the Purchaser intends to onward ship, it is incumbent upon the Purchaser to specify that UN packaging is required at the time of placing the order. Otherwise, once received, responsibility rests with the Purchaser. The use of UN packaging may affect the selling price of products. Please consult the local Fosroc Area Manager or office.

Storage

Shelf life

All products have a shelf life of 12 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 may be reduced. Brushbond liquid component should be protected from frost.

Precautions

Health and safety

Brushbond 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 eye, rinse immediately with plenty of clean water and seek medical advice. If swallowed, seek medical attention immediately – **do not** induce vomiting.

Fire

Brushbond components are non-flammable.

For further information, refer to the Product Material Safety Data Sheet.

Additional Information

Fosroc manufactures a wide range of complementary products which include:

- Waterproofing membranes & waterstops
- Joint sealants & filler boards
- Cementitious & epoxy grouts
- Specialized flooring materials

Fosroc additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Fosroc's 'Systematic Approach' to concrete repair features the following:

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fosroc office - as below.



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Important note:

Fosroc products are guaranteed against defective materials and manufacture and are sold subject to its standard Conditions for the Supply of Goods and Services, copies of which may be obtained on request. Whilst Fosroc endeavours to ensure that any advice, recommendation, specification of information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it.

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