New Guard Coatings Group

A global reputation to protect.

The information herewith is given with the best of New Guard Coatings Group knowledge.

Rights are reserved to change and update the data without notice.

This information is not exhaustive and it is the user's responsibility to ensure that this data sheet is the most current by contacting their local New Guard Coatings Group branch prior to using the coating/product.

Fosroc®
Brushbond FLXIII

constructive solutions

Cementitious, polymer modified elastomeric waterproofing coating for concrete surfaces

Uses

Suitable for use on buried structures such as bridge abutments, culverts and retaining walls. Also for use on reinforced concrete roof decks, in conjunction with protective finishes.

Advantages

- Can be applied to green or damp concrete
- No primer required
- Elastomeric
- Suitable for light foot traffic prior to installation of protective finishes

Standards compliance

Brushbond FLXIII complies with EN1504-2: Surface protection systems method 1.3 (Ingress Protection), 2.2 (Moisture Control), 5.1 (Physical Resistance) & 8.2 (Increasing Resistivity).

Water Regulations Advisory Scheme (WRAS) approved.

BS 6920: 2000 Effect on Water Quality.

Suitable for use on Transport Infrastructure Ireland (TII) projects. TII Publication Number CC-SPW-02000.

Description

Brushbond FLXIII two-component polymer modified cementitious coating is supplied in a pre-packaged form. The product has been designed to be easily mixed on-site using a slow speed drill and paddle and then applied to the substrate using a brush, roller or by spray application. Brushbond FLXIII, available in grey and black, cures to form an elastomeric, waterproof coating.

Specification clause

The waterproofing coating shall be Brushbond FLXIII, a polymer modified, elastomeric cementitious product, compliant with BS EN 1504-2 and approved under the Water Regulations Advisory Scheme for use in contact with potable water. The coating shall be applied in two coats achieving a total coating thickness of 1mm, to a correctly prepared substrate, in accordance with the manufacturer's written instructions.

CE
0370

Fosroc International Limited
Drayton Manor Business Park, Coleshill Road, Tamworth, B78 3XN, UK
09
DoP:UK9-205
Certificate - No. 16/13274-2473-S

Fosroc® Brushbond FLXIII

BS EN 1504-2: Surface protection systems methods 1.3, 2.2, 5.1 and 8.2

Water vapour transmission (Diffusion-Equivalent air layer thickness SdEN ISO 7783:2012)	SD < 5m (Class 1)
Carbon Dioxide Permeability (Diffusion-Equivalent air layer thickness Sd EN 1062-6:2003)	>50m
Adhesion strength by pull-off test (EN 1542:1999)	>0.8 MPa
Liquid Water Permeability (EN 1062-3:2008)	w <0.1 kg/m^{2}h$^{0.5}$
Abrasion resistance (Taber) EN ISO 5470-1:1999	<3000mg
Impact resistance EN ISO 6272-1	>20Nm (Class III)

Clarification of property values: The typical properties given are derived from laboratory testing. Results derived from field applied samples may vary.

Note*: On clean dry concrete, with adequate airflow (ventilation) at 20ºC to 25ºC

WRAS APPROVED MATERIAL

Fosroc®
Brushbond FLXIII

Properties

The following results were obtained

Test Method	Standard	EN1504 Requirement	Result
Water vapour transmission	(Diffusion-Equivalent air layer thickness SdEN ISO 7783:2012	SD < 5m (Class 1)	3.7m
Carbon Dioxide Permeability	(Diffusion-Equivalent air layer thickness Sd EN 1062-6:2003)	>50m	107m
Adhesion strength by pull-off test	EN 1542:1999	>0.8 MPa	1.6 MPa
Liquid Water Permeability	EN 1062-3:2008	w <0.1 kg/m^{2}h$^{0.5}$	w < 0.01kg/m^{2}h$^{0.5}$
Abrasion resistance (Taber)	EN ISO 5470-1:1999	<3000mg	178mg
Impact resistance	EN ISO 6272-1	>20Nm (Class III)	Complies
Tensile strength (N/mm2)	ASTM D412-91		2.63N/mm^2
Elongation at break	(ASTM D412-91)		43%
Water Permeability	(DIN 1048:Pt 5: 1991)		Nil
Crack bridging	(ASTM C836)		Passed
Low Temperature Flexibility	(ASTM C 765:1993)		Passed
Working life			1 hour at 20°C
Setting time * - Foot traffic			4 hrs ± 1 hr

Application instructions

Surface Preparation

Any active water ingress should be stopped with a suitably approved plugging mortar such as Renderoc Plug.

All surfaces which are to receive the coating must be free from oil, grease, wax, dirt or any other form of foreign matter that might affect adhesion. Typically, concrete surfaces can be cleaned using a high pressure water jet and detergent. Poor quality, friable, or contaminated surfaces require suitable mechanical preparation

Spalled surfaces or those containing blow-holes and other such defects should be repaired using suitable products from the Renderoc range. Care must be taken when choosing the repair mortar to ensure that it has all necessary approvals for contact with potable water if required. Contact Fosroc for advice on suitable materials.

Pre-wetting of substrate

Thoroughly dampen the substrate surface with water using a brush, roller or spray. 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 before proceeding. Any excess water should be removed. Contact the local Fosroc office for further advice on suitable materials..

Mixing

The liquid component should be poured into a plastic or metal drum having a volume of at least 25 litres. Place approximately two thirds of the supplied Brushbond FLXIII liquid component into a suitable plastic or metal container. The Brushbond FLXIII powder component should then be added gradually to the liquid whilst mixing with a slow speed drill (350-450 rpm) fitted with a Fosroc Mixing Paddle (MR3). Once all the powder is added continue mixing for 3 – 4 minutes until any lumps have dispersed. Add the remaining third of the liquid component and mix for a further 1 – 2 minutes. Use the material within the recommended pot life.

Mixing warning

Brushbond FLXIII may exhibit satisfactory handling characteristics even though inadequately mixed. This will result in a significantly lower level of performance or possible failure. It is therefore essential that mixing instructions are strictly adhered to with particular emphasis on the time of the mixing operation.

Fosroc®
Brushbond FLXIII

Application generally

The first coat should be applied at a wet film thickness of 0.5mm (coverage per coat is 1.7kg/m^2 or 0.5 litre/m2). To ensure the correct thickness is achieved, measure out an area (for example 200m^2), 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 1 hour of mixing. Allow first coat to cure for a minimum of 4 hours at 20ºC/50% RH and longer at a lower temperature or a higher humidity. 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 maximum ambient temperature for application is 40ºC.

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 application of the second coat to remove potential contamination.

The second coat should also be applied at a wet film thickness of 0.5mm. Pre-dampening of the surface is not necessary when applying the second coat.

Brush application

The most suitable type of brush is a soft bristled wallpaper paste brush (120 to 220mm wide). Where larger areas are to be applied it is advisable to use a brush with a handle.

Load the brush up well and spread the material to the required thickness. If the brush begins to drag during application, do not add water to the material but dampen the surface again. Finish in one direction for a neat appearance.

For floor application, a soft bristled broom is recommended. Pour the material on to the substrate and then spread to the required thickness.

Roller application

Application by roller has the benefit of speed over brush application, particularly on smooth substrates. A good quality medium hair roller is recommended. The roller should be well loaded for ease of application.

Spray application

Spray application should be carried out using a suitable wet spray technique. This is the preferred method for applications to large areas. In smaller tanks with restricted access it may be beneficial to spray. This means the material will be pumped into the restricted area rather than having to be physically carried.
Mixing should be carried out as previously described, and particular care should be taken to ensure that no lumps remain in the mix. The mixing container should be placed on plastic sheeting to stop gravel and stones from contaminating the mix. Material should be scraped off the mixing bucket above the wet line after every mix. The paddle should also be cleaned at this stage. All of these precautions are important to stop dried material or gravel from causing blockages in the pump. Pour the material into the hopper. Scrape the sides of the hopper down regularly to stop material from hardening and then dropping into the mix. Place a cover over the hopper to prevent product skinning caused by water loss.

The mixed material is pumped through the hose to the spray gun. Substrate preparation and coverage rates described above should be adhered to. Wet film thickness should be measured using a wet film thickness gauge every 2 to 3 metres initially until the sprayer has judged the ideal application speed and distance from the wall. Any areas less than 0.5mm thick per coat should be sprayed over again. For the rest of the application, thickness measurements should be carried out every 10m^2.

Reinforcement with polypropylene mesh

Proofex LM Mesh may be used to reinforce Brushbond FLX III at joints and cracks. The mesh should be bedded into the first coat while still wet. Immediately after placing apply a further coat of Brushbond FLX III to ‘wet’ out the mesh. Additional coats may be required.

Corners
Brushbond FLX III should be applied over a 20mm Renderoc Plug 20 fillet and Proofex LM Mesh embedded as described above. Proofex Overtape may be used at corner intersections.

Sealed joints
Soft joints that are to remain exposed should be filled with a suitable joint sealant such as Nitoseal MS600 after application of Brushbond FLX III which should be returned into the joint faces.

For static joints apply 100mm wide Proofex Overtape centrally placed over the joint and extend the Brushbond FLX III application over the joint.

For movement joints apply Brushbond FLX III up to the joint face. When cured apply Expoband H45 over the sealed joint (see data sheet) and allow to cure. Finally lap additional Brushbond FLX III onto the cured Supastik E10.

Curing

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.

For contracts not requiring UK potable water approvals, allow a minimum cure time of equivalent to 7 days at 7ºC (3 days

at 20°C and above). Brushbond FLXIII should be dry cured to ensure the full physical properties are developed.

For UK drinking water purposes where contracts require WRAS certifications, Brushbond FLXIII should be mixed and applied as a two coat system in accordance with the manufacturer's Instruction For Use sheet (contact Technical Helpdesk)

Brush apply the first coat and allow to dry for 4 hours at 20°C and 44% RH (relative humidity) before applying the second coat and curing for 8 days at 7°C (total cure for both coats will be 8 days at 7°C). For use with water up to 23°C.

Cleaning

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

Topcoat for Exposed Surfaces
For surfaces exposed to UV light in service, a minimum 0.2mm film of Fosroc Nitoproof UVR Topcoat of the appropriate colour should be applied. See product data sheet for application instructions.

Limitations

Brushbond FLXIII should not be applied if the air or substrate temperature is greater than 40°C. This may result in different colour shades. Minimum application, substrate and air temperature is 3°C and rising. Avoid freezing conditions for 24 hours after application.

Estimating

Supply

Powder	:	15 kg
Liquid	:	10 kg

Coverage and Yield		14.5 litres / pack
Brushbond FLXIII kit	:	14.5m²/pack applied at 1mm thick (2 coats of 500 microns thick)

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

Storage

Brushbond FLXIII has a shelf life of 12 months from the day of manufacture if kept in dry storage in the original, unopened containers. If stored at high temperature/humidity, the shelf life may be reduced to less than 6 months.

Liquid containers should be kept from freezing and stored in a frost free environment.

Precautions

Health and safety

Gloves and goggles should be worn. Any splashes to the skin or eyes should be washed off with clean water. In the event of prolonged irritation, seek medical advice.

Powder products should be handled to minimise dust formation; use a light mask if excessive dust unavoidable.

For further information refer to appropriate Product Safety Data Sheet.

Note
For porous substrate (Gypsum board) application, Nitobond AR should be applied to seal the surface followed by the application of Brushbond FLXIII.

Brushbond FLXIII is available in grey and black. For WRAS approval, Brushbond FLXIII grey must be used.

Fosroc International Limited
Drayton Manor Business Park
Coleshill Road, Tamworth,
Staffordshire B78 3XN. UK

telephone:
+44 0 (1827) 262222

fax:
+44 0 (1827) 262444

email:
enquiryuk@fosroc.com

www.fosroc.com