

# Cementitious Coating 851

## Waterproofing and Protection of Concrete

### Product Overview

Two component, polymer modified, cementitious waterproof coating.

### Description

**CEMENTITIOUS COATING 851** is a thixotropic, polymer modified, cementitious waterproofing coating for internal or external structural waterproofing of concrete and other mineral substrates. It cures to form a hard, durable, highly alkaline coating with a degree of flexibility. It provides economic reinstatement of concrete cover to ensure the design life is achieved and to extend the service life of existing structures. It imparts a high level of protection from chloride ingress on highway and coastal structures.

### Uses

Suitable for surface protection systems principles 1.3, 2.2, 8.2 as defined in BS EN 1504-2.

### Advantages

- Incorporates the latest cement chemistry, microsilica, fibre and styrene acrylic copolymer technology.
- Pre-packaged material only requiring mixing on-site.
- Excellent adhesion to sound prepared concrete.
- Dense matrix offers low permeability to water at 10 bar positive and negative pressure and very high diffusion resistance to a carbon dioxide gas and chloride ions.
- Provides the equivalent of 100mm of concrete cover.
- Can be applied on green concrete.
- Protects sub-structures from sulphate contaminated ground conditions.
- Easily overcoated with specialist membranes to provide further protection and an aesthetic finish.

### Compliance

- UKCA & CE marked in accordance with EN 1504-2.
- BBA Approved, Certificate No. 05/4276.
- Listed under Regulation 31 - England and Wales: Regulation 33 - Scotland: Regulation 30 - NI: for use with potable water.
- WRAS Approval Number 2109565
- Compliant with LU Standard 1-085 'Fire Safety Performance of Materials'.

### Application Instructions

#### Preparation

The areas to be repaired must be free from all unsound material including laitance dust, oil, grease, corrosion by-products and organic growth. Smooth surfaces should be roughened.

Any defective concrete should be reinstated with the appropriate Flexcrete repair mortar. Any active water infiltration must first be stopped using **FASTFILL WP**.

The compressive strength of the parent concrete should be minimum 20 MPa.

The prepared substrate should be thoroughly soaked (preferably 24 hours before) with clean water until uniformly saturated without standing water.

#### Substrate Priming

**CEMENTITIOUS COATING 851** does not generally require a primer. On potable water structures, roofs and decks are sealed with **POLYMER ADMIXTURE 850** diluted with clean water. Other roof and deck applications must be sealed with **CEMPROTEC EF PRIMER**. Other highly porous substrates may benefit from additional sealing with **CEMPROTEC EF PRIMER**.

#### Mixing

**CEMENTITIOUS COATING 851** is supplied as a two pack, Part A liquid and Part B powder. The two components must not be split. Mix all of Part A with all of Part B.

Shake Part A (liquid) and pour into a suitable mixing vessel. Slowly add the Part B (powder) and mix for a minimum of 5 minutes until homogenous, without any lumps. Mix with a slow-speed drill and paddle designed to entrap as little air as possible.

- Note - These instructions must be adhered to as Flexcrete will not be responsible for failure due to incorrect mixing.

#### Placing

**CEMENTITIOUS COATING 851** is applied using brush, trowel or spray techniques. Care should be taken to ensure that air is not entrapped onto the surface.

For vertical and overhead use, apply in two 1mm coats, applying the second coat when the first coat is stable but not fully set (typically 30-90 minutes).

On roofs or decks, apply in a single 2mm layer, spreading with a notched trowel, squeegee or skid leveller, and immediately use a spiked roller to remove entrapped air.



## Detail Work

Where movement is anticipated around penetrations and over joints or cracks, apply a 1mm thick stripe coat of **CEMENTITIOUS COATING 851** by brush and immediately embed **CEMPROTEC 2000-S** tape. Allow to stabilise before proceeding with the main application.

## Curing

Normal concreting procedures must be adhered to. Protect from strong sunlight and drying winds with **CURE-SEAL WB**.

On roofs or decks **CEMPROTEC EF GRIT** can be broadcast onto the surface of the wet coating to provide effective curing and leave an abrasion and slip-resistant finish. In exposed conditions, curing must commence immediately as work continues over adjacent areas.

## Important Notes

1. When applying in a tidal zone, allow to cure typically for a minimum of 2 hours before being immersed. Protect from abrasion or aggressive tidal flow if necessary.
2. When treating potable water structures please refer to the IFU Document.

## Cleaning and Storage

- All tools should be cleaned with water immediately after use.
- Materials can be stored for 12 months in dry, frost free conditions with unopened bags at 20°C.

## Packaging

- **CEMENTITIOUS COATING 851** is supplied in 30kg composite packs.

## Yield and Coverage

- 15.4 litres per 30kg.
- 30kg covers approximately 7.7m<sup>2</sup> at 2mm thickness.

## Health and Safety

- Safety Data Sheets are available on request.

## Application Top Tips

1. Regularly check the coating thickness during application using a wet film thickness gauge.
2. Apply **CURE-SEAL WB** as an even fine mist spray. Do not over apply or allow to pond on the surface or cracking may occur.
3. **CEMENTITIOUS COATING 851** is not a decorative coating. It can be overcoated with Flexcrete membranes to give a coloured finish.
4. When broadcasting **CEMPROTEC EF GRIT** use techniques so that the particles are projected upwards to fall evenly without disrupting the smooth surface of the coating. Use a grit blower on larger areas.
5. For light to moderate traffic, seal sanded surfaces with **CURE-SEAL WB**.
6. Please consult our Technical Department when waterproofing underneath road asphalt.
- 7 In cold, humid conditions, condensation may form on freshly coated surfaces resulting in darkening of the finish and retardation of set.
8. Cold Weather Working (See separate Guide): minimum application temperatures:
  - Do not use any Part A which has been frozen.
  - **When applying to potable water structures the minimum application temperature is 7°C. See IFU document for full information.**
9. Hot Weather Working (See separate Guide)
  - Store material in cool conditions to maximise working life.
  - Shade applied material from strong sunlight.
  - Spray apply a second mist coat of **CURE-SEAL WB**.
  - If possible, avoid extreme temperatures by working at night.

The information herein is correct to the best of our knowledge, but it does not necessarily refer to the particular requirements of the customer. If the customer has any particular requirements it should make them known in writing to Flexcrete Technologies Limited, and obtain further advice accordingly.

## Technical Data

Property	Standard	EN 1504-2 Requirement	Typical Results
Compressive Strength Development @20°C	EN 12190	≥ 35 MPa (Class 1) Traffic with Polyamide wheels	1 day 5-10 MPa 7 days 25-30 MPa 28 days 38-45 MPa
Adhesive Bond	EN 1542	≥ 2.0 MPa	4 MPa
Chloride Ion Diffusion Resistance	Vinci Technology		No steady state of flux of chloride after 33 years on test
Chloride Ion Penetration Resistance	ASTM C1202-M		<100 Coulombs - Negligible
Permeability to CO <sub>2</sub>	EN 1062-6	R <sub>z</sub> ≥ 50m	GREY - R 80m 2mm equivalent to 200mm of concrete WHITE - R 184m 2mm equivalent to 460mm of concrete
Permeability to Water Vapour	EN ISO 7783-2	Class 1: S <sub>D</sub> ≤ 5m	S <sub>D</sub> = 0.91m
Thermal Compatibility	EN13687-1	≥ 2 MPa	2.5 MPa
Water Permeability Coefficient Equivalent Concrete Thickness	DIN 1048	-	2.7 x 10 <sup>-16</sup> m/sec 2mm = 2260mm of typical concrete
Resistance to Water Pressure	DIN 1048-1		10 bar resistance (100m hydrostatic head) positive or negative
Static Crack Bridging	EN1062-7	Declared Class	Class A3 >500µm Result = 1000µm (Air cured)
Coefficient of Thermal Expansion	EN 1770	≤ 30 x 10 <sup>-6</sup> K <sup>-1</sup>	16.6 x 10 <sup>-6</sup> K <sup>-1</sup>
Tensile Strength	BS 6319: 7	-	2.7 MPa
Wear Resistance	EN 13813		Exceeds BCA AR0,5: Highest classification of wear resistance.
Liquid Water Transmission Rate (Capillary Absorption and Permeability to Liquid water)	EN 1062-3	Class III (low) w < 0.1 kg/(m <sup>2</sup> .h <sup>0.5</sup> )	w = 0.02 kg/(m <sup>2</sup> .h <sup>0.5</sup> )
Mixed Density		-	1950 kg/m <sup>3</sup>
Mixed Colour		-	Concrete grey or white
Application Thickness		-	2mm in 1 or 2 coats
Min Application Temperature		-	≥3°C on a rising thermometer ≥5°C on a falling thermometer
Working Life (approx.)		-	30 minutes at 20°C
Overcoat Time			30-90 minutes depending on temperature
Reaction to Fire	EN 13501-1	-	A2 – s1, d0

The properties given above are obtained from laboratory tests: results obtained from on-site testing may vary according to site conditions.

