

Cemprotec 851F

Waterproofing and Protection of Concrete

Product Overview

Two component, polymer modified, cementitious waterproof coating with enhanced flexibility.

Description

CEMPROTEC 851F is a flexible, thixotropic, polymer modified, cementitious waterproofing coating for internal and external waterproofing of concrete and other mineral substrates. It cures to form a durable, highly alkaline coating with a good degree of flexibility to protect from the effects of water ingress, chlorides, and carbonation.

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, metakaolin, fibre and styrene acrylic copolymer technology.
- Pre-packaged material only requiring mixing on-site.
- Brush, trowel or spray applied normally in two coats.
- Roofs and decks only require a single coat application.
- 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.
- Protects concrete in sulphate contaminated ground conditions.
- Easily overcoated with specialist membranes to provide further protection and aesthetic properties.

Compliance

- UKCA & CE marked in accordance with EN 1504-2.
- Listed under Regulation 31 - England and Wales: Regulation 33 - Scotland: Regulation 30 - NI: for use with potable water.

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

CEMPROTEC 851F 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

CEMPROTEC 851F 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

CEMPROTEC 851F 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 **CEMPROTEC 851F** 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 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

- **CEMPROTEC 851F** is supplied in a 30kg composite pack.

Yield and Coverage

- 15 litres per 30kg.
- 30kg covers approximately 7.5m² 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 as cracking may occur.
3. **CEMPROTEC 851F** 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. In cold, humid conditions condensation may form on surfaces treated with **CEMPROTEC 851F**, resulting in darkening of the finish and retardation of set.
7. 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.**
8. 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	BS EN 1504-2 Requirement	Typical Result
Compressive Strength Development @20°C	EN 12190	-	1 day 1.5 MPa 7 days 12.5 MPa 28 days 17.5 MPa
Adhesive Bond	EN 1542	≥ 1.5 MPa	1.6 MPa
Chloride Ion Diffusion Resistance	ASTM C-1202	-	485 Coulombs - Very Low
Permeability to Water Vapour	EN ISO 7783-2	Class 1: $S_D \leq 5m$	$S_D = 1.44m$
Water Permeability Coefficient Equivalent Concrete Thickness	DIN 1048	-	$3.45 \times 10^{-18} m/sec$ 2mm = 16m of typical concrete @ 10 bar
Resistance to Water Pressure	DIN 1048-1	-	10 bar (100m hydrostatic head)
Tensile Strength	BS 6319: 7	-	2.3 MPa
Static Crack Bridging	EN 1062-7	Declared Class	A3 > 500µm (20°C) Air cure 680 µm
Liquid Water Transmission Rate (Capillary Absorption and Permeability to Liquid water)	EN 1062-3	Class III (low) $w < 0.1 kg/(m^2.h^{0.5})$	$w = 0.018 kg/(m^2.h^{0.5})$
Mixed Density		-	2000 kg/m³
Mixed Colour		-	Off-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

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

