Technical Data Sheet

CEMENTITIOUS COATING 851

Surface Protection System - Protection against Ingress

USES

CEMENTITIOUS COATING 851 is designed for internal and external structural waterproofing of concrete and other mineral substrates. Resists positive and negative pressure under 100m head in water retaining and below ground structures as well as roofs and decks. Provides chloride protection on highway and coastal structures and enhances the durability of reinforced concrete by reinstating effective cover to achieve the specified design life.

ADVANTAGES

- Incorporates the latest proven cement chemistry, microsilica, fibre and styrene acrylic copolymer technology.
- Brush, trowel or spray applied normally in two coats. Floors and decks are a one coat application.
- Pre-packaged material only require mixing on site.
- Excellent adhesion to sound prepared concrete substrates and steel.
- Dense matrix offers low permeability to water, even at 10 bar positive and negative pressure, and very high diffusion resistance to carbon dioxide gas and chloride ions.
- Provides the equivalent to 100mm of good quality concrete cover.
- Non-toxic when cured and is listed as authorised under Regulation 31 for use in the supply of drinking water.
- Easily overcoated with Flexcrete's specialist membranes to provide further protection and aesthetic quality.

COMPLIANCE

CE marked in accordance with BS EN 1504 Part 2. Approved by the BBA, Certificate No. 05/4276. Listed under DWI Regulation 31 for drinking water applications. Compliant with LU Standard 1-085 'Fire Safety Performance of Materials'.

PRODUCT DESCRIPTION

CEMENTITIOUS COATING 851 is a two component, thixotropic, cementitious modified polymer coating with high adhesion to both concrete and steel. **CEMENTITIOUS COATING 851** forms a hard, highly alkaline coating with a degree of elasticity which not only protects the concrete, or other substrates, from the effects of aggressive acid gases, moisture and chlorides, but also has greatly enhanced chemical resistance. It is particularly suited for the protection of concrete in sulphate contaminated ground conditions. Can be reinforced with **CEMPROTEC 2000-S** tape to accommodate movement around details and over cracks and joints.

CE 0086

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EN1504-2: Surface Protection Systems - Coating
Protection against Ingress (PIC) Rigid trafficked system

Compressive Strength:	Class I ≥35 MPa
Permeability to CO_2:	Equivalent to 100mm of concrete
Permeability to Water Vapour:	Class I <5m
Capillary Absorption:	Class III < 0.1kg/(m²h$^{0.5}$)
Coefficient of Thermal Expansion:	≤30 x 10^{-6} K^{-1}
Thermal Compatibility EN 13687-1:	> 2.0 Mpa
Adhesive Bond:	≥ 2.0 MPa
Dangerous Substances:	Complies with 5.4
Reaction to Fire:	Euroclass A2-s1, d0

Chloride Ion Diffusion (UK Method):
Steady state not reached after 27 years on test

TECHNICAL DATA

Basis:	Cementitious modified styrene acrylic copolymer
Mixed Colour:	Concrete Grey and White
Mixed Density:	1800 kg/m³
Min Application Temperature:	5°C
Max Application Temperature:	35°C
Working Life (Approx):	30 minutes at 20°C
Drying Time:	2-3 hours (typical)
Thickness:	2mm in one or two coats

MECHANICAL CHARACTERISTICS (TYPICAL)

Compressive Strength: BS 4551 Tested at 20°C	
1 day	10.5MPa
7 days	30.5MPa
28 days	40.0MPa
Water Permeability Coefficient:	Taywood Test
	6.00 x 10^{-16}m/sec

i.e. 2mm 851 = 1000mm of typical concrete

CO_2 Gas Diffusion Resistance Coefficient: Taywood
μ_{CO2} = 2,600,000

Equivalent air thickness value R at 2mm thickness
μ_{CO2} x S = 5200m

An effective barrier to CO_2 is R ≥50m (Engelfried)

APPLICATION DATA

Application Guide available on request.

PREPARATION

The areas to be treated must be free from all unsound material, i.e. dust, oil, grease, corrosion by-products and organic growth. Smooth surfaces should be cleaned to remove release agents, curing compounds and surface laitance, preferably using wet grit or water blasting techniques or equivalent approved methods, and any steel cleaned to bright metal. The concrete sub-base should be a minimum of 20 MPa. The prepared substrate should be free of water back pressure and thoroughly soaked with clean water until uniformly saturated without any standing water.

PRIMING

Highly porous substrates may require sealing with **CEMPROTEC EF PRIMER**. All floor and deck applications must be primed with **CEMPROTEC EF PRIMER**. In drinking water applications use **POLYMER ADMIXTURE 850**. For further information, please refer to relevant data sheets.

MIXING

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 homogeneous. The modules must be mechanically mixed using a drill and paddle specially designed to entrap as little air as possible. Bottles of liquid and bags of powder are **not** to be split.

DETAIL WORK

Where movement is anticipated around details and over joints, large cracks, etc, apply a 1mm stripe coat of **CEMENTITIOUS COATING 851** by brush and immediately embed **CEMPROTEC 2000-S**. Allow to stabilise before proceeding. Please consult separate Data Sheet for further information.

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. On horizontal applications, apply as a single 2mm layer, spreading with a skid leveller or notched trowel, and immediately use a spiked roller to release entrapped air. 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 30-60 minutes depending on temperature).

CURING AND OVERCOATING

Normal concreting procedures should be strictly adhered to. It is important that the surface of the coating is protected from strong sunlight and drying winds with **FLEXCRETE CURING MEMBRANE WB**, polythene sheeting or similar. In floor and deck applications, **CEMPROTEC EF GRIT** can be cast liberally onto the surface to provide effective curing, whilst also creating an abrasion and slip resistant finish. Curing must commence within 10-15 minutes of the completed application of the coating.

CLEANING

All tools should be cleaned with water immediately after use.

SHELF LIFE

12 months in dry, frost free conditions with unopened bags at 20°C.

IMPORTANT NOTES

1. **CEMENTITIOUS COATING 851** is not a decorative finish and may temporarily discolour until uniformly weathered. Can be overcoated with Flexcrete membranes to give a coloured finish.
2. When treating structures in a tidal zone, the **CEMENTITIOUS COATING 851** must be allowed to cure for a minimum of 2 hours before being immersed. Protect from abrasion or aggressive tidal flow if necessary.

PACKAGING AND COVERAGE

Pack Size:	30kg composite pack
Yield:	16.67 litres per 30kg
Coverage:	1.8kg/mm/m²
	On repaired and normal concrete surfaces, a 30kg pack at 2mm thickness will cover 8.33m²

SAFETY DATA

Safety Data Sheet available on request.

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