

## CEMENTITIOUS COATING 851

### USES

Structural waterproofing of concrete and other mineral substrates, resisting positive and negative pressure under a 100 metre head. Designed for internal and external sealing of water retaining structures, including drinking water reservoirs. Waterproofing of road, ramp and bridge decks prior to the installation of traditional asphalt road surfacing.

Extensively used for the protection of reinforced concrete from chloride attack on highway and coastal structures even in areas subject to immersion. Ideal for substructure protection in chloride-laden ground conditions. Provides reinstatement of effective cover for precast and insitu reinforced concrete, enhancing durability to achieve specified design life.

### ADVANTAGES

<b>SIMPLE:</b>	Materials are pre-packaged in a convenient and easy to handle size. Requires only mixing on site.
<b>EASY TO USE:</b>	Brush, trowel or spray applied, normally in two coats.
<b>RESISTANT:</b>	Good abrasion and very high resistance to freeze/thaw cycles and de-icing salts.
<b>ADHESIVE:</b>	Excellent adhesion to steel and sound prepared concrete substrates.
<b>SAFE:</b>	Non-toxic when cured and is listed as authorised under Regulations 31 for use in the supply of water for drinking.
<b>IMPERMEABLE:</b>	Dense matrix offers low permeability to water, even at 10 bar pressure, and very high diffusion resistance to carbon dioxide gas and chlorides.
<b>COMPLIANT:</b>	Cements used are quality assured complying with BS 12. Approved by the BBA, Certificate No. 05/4276.
<b>COST EFFECTIVE:</b>	Economical.
<b>OVERCOATING:</b>	Easily overcoated with other specialist membranes in the Flexcrete range to provide further protection and aesthetic quality.

### PRODUCT DESCRIPTION

**CEMENTITIOUS COATING 851** is a two component, thixotropic, cementitious modified polymer coating with high adhesion to both steel and concrete. **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.

### TECHNICAL DATA

<b>Basis:</b>	Cementitious modified advanced styrene acrylic copolymer.
<b>Mixed Colour:</b>	Concrete Grey and White.
<b>Mixed Density:</b>	1800kg/m <sup>3</sup> .
<b>Minimum Application Temperature:</b>	5°C.
<b>Maximum Application Temperature:</b>	35°C.
<b>Working Life:</b>	30 minutes at 20°C.
<b>Drying Time:</b>	2-3 hours depending upon temperature and base concrete porosity.
<b>Number of Coats Required:</b>	Normally two at 1mm thickness.

### MECHANICAL CHARACTERISTICS (TYPICAL)

**Compressive Strength:** BS 4551 Tested at 20°C.

1 day 10.5N/mm<sup>2</sup>.

7 days 30.5N/mm<sup>2</sup>.

28 days 40.0N/mm<sup>2</sup>.

**Flexural Strength:** BS 4551 Tested at 20°C.

28 days 10.5N/mm<sup>2</sup>.

**Adhesive Strength:**

2N/mm<sup>2</sup> (Concrete).

**Water Permeability Coefficient:** Taywood Test By Penetration

6.00 x 10<sup>-16</sup>m/sec.

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

**Carbon Dioxide Gas Diffusion Resistance:**

Taywood Test.

Coefficient:  $\mu_{CO_2} = 2,600,000$ .

Therefore equivalent air thickness value R at 2mm thickness (S).

$\mu_{CO_2} \times S = 5200m$ .

Based on Engelfried Technique an effective barrier to Carbon Dioxide is R  $\geq$  50m.

**Oxygen Diffusion Coefficient:** Taywood Test.

$D_{O_2} = 5.24 \times 10^{-5}cm^2s^{-1}$ .

(Normal Concrete:  $D_{O_2} = 2.12 \times 10^{-3}cm^2s^{-1}$ .)

**Chloride Ion Diffusion:** Taywood Test

No steady state of flux of chloride ions after a test period of over 18 years.

### 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 roughened, all loose material and surface laitance removed and steel cleaned to bright metal preferably using wet grit or water blasting techniques or equivalent approved methods. The strength of the concrete sub-base should be a minimum of 20N/mm<sup>2</sup>.

## PRIMING

The prepared substrate concrete should be thoroughly soaked (preferably 24 hours before) with clean water until uniformly saturated without any standing water. Highly porous substrates may require sealing with either **POLYMER ADMIXTURE 850** or **BONDING BRIDGE 842**. All floor and deck applications must be primed with **CEMPROTEC EF PRIMER**.

## MIXING

Shake Part A and pour into a suitable mixing vessel. Slowly add the 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.

## 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

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**, polythene sheeting, damp hessian or similar. In flooring and deck applications, a suitable sand or other aggregate can be cast liberally onto the surface (approximately 2kg/m<sup>2</sup>), taking care to ensure that the full depth of the coating is not penetrated. This provides 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.

## STORAGE

Store in dry, frost free conditions at moderate temperatures not greater than 25°C.

## SHELF LIFE

12 months with unopened containers under the above storage conditions.

## IMPORTANT NOTES

1. Apply only to clean, sound substrates. Concrete should be saturated but surface-dry and free of water back pressure.
2. Care should be taken when curing in hot, sunny or windy conditions.
3. Discard **CEMENTITIOUS COATING 851** packages which have been subjected to freezing temperatures.
4. **CEMENTITIOUS COATING 851** is not a decorative finish and may temporarily discolour until uniformly weathered. It may, however, be overcoated with Flexcrete membranes to produce a coloured finish.
5. 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:	35kg.
Coverage:	On repaired and normal concrete surfaces, a 35kg pack at 1mm thickness will cover 19.6m <sup>2</sup> .

## SAFETY DATA

Safety Data Sheet available on request.

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