

Cemprotec E-Floor HB

Epoxy and Polymer Modified Cementitious Flooring System: 3-6mm

Product Overview

Two component, epoxy and polymer modified cementitious coating for waterproofing and protection of concrete floors. CE-marked in accordance with BS EN 1504-2 and BS EN 13813.

Uses

Protection of concrete floors and decks subject to trafficking in demanding internal and external environments. Suitable for surface protection systems principles 2.2, 5.1, 6.1,8.2 as defined in BS EN 1504-2.

Advantages

- Pre-packaged material only requiring mixing on site.
- A unique blend of surfactants gives high flow to enable fast and easy application.
- Excellent abrasion and impact resistance. Very high resistance to a wide range of aggressive chemicals.
- Can be applied without risk of osmotic blistering to 'green' concrete, wet substrates or floors with no effective waterproofing membrane.
- Excellent adhesion to dry or damp cementitious substrates.
- Hydrates to give high early strength, enabling rapid reinstatement of traffic.
- Water-based product, curing without the release of hazardous solvents. Equipment easily cleaned with water.
- Dense matrix offers low permeability to water, even at 10 bar positive and negative pressure, and very high diffusion resistance to chlorides and oxygen.
- Enhances effective cover to steel reinforcement.
- Easily treated with resin coatings or used as a waterproof base for wood flooring, carpets or tiles.

Description

CEMPROTEC E-FLOOR HB is a two component, water-based, epoxy and polymer modified cementitious coating for the waterproofing and protection of concrete floors. It exhibits a high degree of flow for easy application by pouring or pumping techniques to give a smooth finish.

CEMPROTEC E-FLOOR HB cures to form a dense, hard-wearing durable coating offering low permeability to water and providing very high chemical and abrasion resistance to ensure long-term protection. It can be used in conjunction with **CEMPROTEC 2000-S** tape where further movement is anticipated over cracks and joints.

Compliance

- CE-marked in accordance with BS EN 1504 Part 2. Suitable for surface protection systems principles 2.2, 5.1, 6.1,8.2 as defined in BS EN 1504-2.
- CE- Marked in accordance with EN 13813 Class CT-C40-F10-AR1.
- Compliant with LU Standard 1-085 'Fire Safety Performance of Materials'.

Specification Clause

The structural waterproofing coating shall be a two component, thixotropic, polymer modified cementitious coating applied typically at 3-6mm. It shall be CE-Marked in accordance with BS EN 1504-2, and shall be suitable for application onto 'green' or saturated concrete. It shall meet Reaction to Fire Euroclass A_{2FL-s1} and shall be categorised as having the highest classification of wear resistance to EN13813.

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EN1504-2: Surface Protection Systems - Coating
Moisture Control (MCC) Rigid Trafficked System

Compressive Strength	: Class I $\geq 35\text{MPa}$
Adhesive Bond	: $\geq 2.0\text{MPa}$
Water Vapour Permeability	: Class I $< 5\text{m}$
Coefficient of Thermal Exp.	: $\leq 30 \times 10^{-6} \text{K}^{-1}$
Therm. Comp. EN 13687-1	: $> 2.0\text{MPa}$
Capillary Absorption	: Class III $< 0.1 \text{kg.m}^{-2}.\text{h}^{0.5}$
Dangerous Substances	: Complies with 5.4
Reaction to Fire	: Euroclass A _{2FL-s1}



Technical Data

Property	Standard	BS EN 1504-2 Requirement	Typical Result
Compressive Strength	EN 12190	≥ 35MPa (Class I)	28 days: 41MPa
Compressive Strength Development @ 20°C	BS4551		4 hours 5.0MPa 1 days 15.0 MPa 7 days 30.0MPa 28 days 50.0MPa
Flexural Strength	EN196-1		13.4MPa
Adhesive Bond	EN 1542	≥ 2.00MPa	3.36MPa
Thermal Compatibility	EN13687-1	≥ 2.00 MPa	3.10Mpa
Water Vapour Permeability (Equivalent Air Layer Thickness)	BS EN ISO 7783-2	Class I $S_D \leq 5m$	$S_D = 0.86m$
Water Permeability Coefficient Equivalent Concrete Thickness	DIN1048		$5.78 \times 10^{-15}m/sec$ 6mm = 963mm of concrete
Resistance to Water Pressure	DIN 1048		10 bar (100m hydrostatic head) positive and negative)
Wear Resistance	EN13813		Exceeds AR1: Meets the highest classification of wear resistance
Liquid Water Transmission Rate (Capillary Absorption and Permeability to Liquid water)	EN1062-3	Class III (low) $w < 0.1kg.m^{-2}.h^{-0.5}$	$w=0.056 kg.m^{-2}.h^{-0.5}$
Coefficient of Thermal Expansion	EN 1770	$\leq 30 \times 10^{-6} K^{-1}$	$20.5 \times 10^{-6} K^{-1}$
Reaction to Fire	EN 13501-1	Euroclass	Euroclass A2 _{FL} – s1
Mixed Colour			Grey
Mixed Density			1950kgs/m ³
Application Thickness			Minimum 3-6mm in 1 coat Maximum typically 10mm
Minimum Application Temp			≥3°C on a rising thermometer ≥5°C on a falling thermometer
Working Life (approx.)			30 minutes at 20°C
Finishing Time			Within 10 minutes of placing
Time Before Foot Traffic			4-24 hours depending on temperature

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

Application Instructions

Preparation

The areas to be treated must be free from all unsound material, i.e. surface laitance, dust, oil, grease, organic growth or previous surface treatments, and smooth surfaces should be roughened. This is best achieved using totally enclosed shot blasting equipment, scarification, grinding or scabbling.

Oil or grease must be removed by proprietary degreasant, hot compressed air equipment, flame spalling or steam cleaning techniques.

All debris should be removed to leave a thoroughly clean, dust free, open textured surface. Concrete should have a minimum strength of 20MPa.

Priming of Concrete

The prepared substrate should be thoroughly soaked with clean water until uniformly saturated without any standing

water. Seal the substrate with **CEMPROTEC EF PRIMER** at a typical coverage rate of 5m²/litre to prevent out-gassing. Allow to become transparent before proceeding, typically 1-3 hours depending on climatic conditions.

Mixing

CEMPROTEC E-FLOOR HB is supplied as a two pack, Part A liquid and Part B powder. **The two components MUST NOT be split. All of Part A and all of Part B MUST be mixed.**

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. Mixing should be carried out using a slow-speed drill and paddle designed to entrap as little air as possible.

Please Note: It is vital that these instructions are strictly followed. Flexcrete cannot be held responsible for product failures due to incorrect mixing.



Joins

All formed joints in the existing floor or deck **MUST** be continued through into the new coating. Before the application of **CEMPROTEC E-FLOOR**, construction joints and 'live' cracks should be reinforced with **CEMPROTEC 2000-S** using **CEMPROTEC E942** as the embedment material. Please consult separate Technical Data Sheet for further information.

Placing

CEMPROTEC E-FLOOR HB should be poured or pumped onto the prepared surface and spread to a minimum thickness of 3mm with a squeegee or pin leveller.

Roll the surface with a spiked roller to remove entrapped air and to ensure a dense finish. Care must be taken to ensure a minimum 3mm thickness is achieved.

To enhance the skid and abrasion resistance of the finished **CEMPROTEC E-FLOOR HB**, immediately broadcast **CEMPROTEC EF GRIT** into the surface, ensuring that the particles are distributed evenly without disrupting the smooth surface of the coating.

Allow to cure for a minimum of 4 hours before removing any excess sand, which may be sieved and re-used.

Apply **CEMPROTEC SANDSEAL WB** by roller at 5m²/litre. Finishing must be completed within the working life of the material and no later than 10 minutes after placing. Allow to cure for a minimum of 4 hours before subjecting the application to light foot traffic.

Curing

Normal procedures relating to curing of cementitious products should be strictly adhered to. The surface must be protected from strong sunlight, drying winds and high air movements, to prevent skinning during placing and rapid drying out in the plastic state. On unsanded finishes, use **FLEXCRETE CURING MEMBRANE WB**, taking care to avoid overspray onto surfaces yet to be treated.

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 packaging at 20°C.

Packaging

CEMPROTEC E-FLOOR HB is supplied in 30kg composite packs.

Yield and Coverage

15 litres per 30kg pack.

A 30kg composite pack covers 5m² at 3mm thickness (1.95kg/mm/m²).

Health and Safety

Safety Data Sheets are available on request.

Application Top Tips

1. Keep the wet edge live with a steady supply of mixed material and regular spike rolling.
2. Regularly clean and dry spiked rollers to avoid material build-up.
3. Use spiked shoes during application to avoid disturbing the coating.
4. Regularly check the coating thickness during application using a wet film thickness gauge.
5. Care should be taken during application to ensure that air is not entrapped into the surface.
6. Apply **CURING MEMBRANE WB** as an even, fine mist spray. Do not over apply or allow to pond on the surface or cracking may occur.
7. Join fresh product to existing hardened material with a simple butt joint. Use adhesive tape for a neat joint and remove whilst the newly applied material is wet.
8. In cold, humid conditions condensation may form on surfaces treated with **CEMPROTEC E-FLOOR**, resulting in darkening of finish and retardation of set.
9. Enhance the adhesion of high build decorative or tile finishes by broadcasting **CEMPROTEC EF GRIT FINE** into the freshly laid material.
10. 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.
11. Cold Weather Working (See separate Guide)
 - ≥3°C. on a rising thermometer.
 - ≥5°C. on a falling thermometer.
12. 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 **CURING MEMBRANE 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.

