

Expancote* Liner

Epoxy resin chemical and abrasion resistant lining for steel and concrete surface

Uses

To provide protection to concrete and steel structures in aggressive chemical immersion conditions, tough coating provides excellent abrasion resistant surface. The material is particularly suitable for applications in tunnel lining, tank lining, sewerage pipes & main holes lining:

- Highly chemical and abrasion resistant.
- Provide excellent protection against corrosion to imbedded steel bars/steel liner or steel pipes.
- Excellent bond with mortar, shotcrete, concrete, and steel surface.
- Suitable for use in water retaining and water excluding structures.
- Internal & external lining in RCC or steel pipes

Advantages

- Protect ferrous metals, Prevent rust creep
- Exhibits high mechanical bond strength, Positive adhesion - exceeds that of the tensile strength of the host concrete.
- Solvent-free - can be used in enclosed locations
- Contain corrosion inhibitor
- Long working life
- Easy application by brush, roller & spry.
- Bonds to green or damp concrete.
- Good resistant to water, carbon di-oxide, sulphates, chlorides, light acid and alkalis, organic solvents, oil and hydro carbon products.

Description

Expancote* Liner is two component epoxy resin protective coating for concrete and steel, it is supplied in pre-packaged form, liquid epoxy base and liquid hardener. The product is designed to be easily mixed on site using a slow speed drill fitted with a mixing paddle and then applied to the well prepared prime substrate using brush, roller or airless spray.

Design criteria

Expancote* Liner is designed to be applied in two to three coats to get 500 to 750 microns dry film thickness.

Specification

A chemical and abrasion resistant coating for cementitious and steel surface **Expancote* Liner** an epoxy resin base product, supplied in pre-weigh packing. The cured coating protects ferrous metals against corrosion, and cementitious surface against abrasion and chemical attack.

Properties

Base	: Epoxy resin
Color	: Concrete grey
Bond strength ASTM D4541	: 2.25 – 2.50 N/mm ² (Concrete failure)
Tensile strength ASTM D638	: 30 N/mm ²
Compressive strength ASTM D695	: 65 N/mm ²
Pot life @ 25 °C	: 35 – 40 Minutes
Pot life @ 35 °C	: 20 – 25 Minutes

Use of glass fiber reinforcement

Expancote* Liner may be used in conjunction with glass fiber cloth to increase thickness or, where necessary, bridge fine cracks in the substrate. The cloth should be laid directly on the first coat whilst wet and should be pressed in and smoothed out with a stiff nylon brush or split washer roller. A second coat should then be applied, allowing not more than 24 hours at 20°C and not more than 18 hours at 35°C between coats, and again achieving a wet film thickness not less than 250 - 350 microns.

Instructions for use

Preparation

Steel surface

All ferrous material must be clean and free from oil, grease mill scale, rust and existing coating. This is best achieved by grit/sand blasting, although thorough wire brush can be sufficient. Some rust removers based on phosphoric acid tend to leave an electrically insulation film on ferrous metals and must not be used, contact the local Fospak Expanchem office for advice.

Concrete/Mortar/Shotcrete surface

All cementitious surfaces which are to receive the epoxy coating must be free from oil, laitance, grease, wax, dirt or any other form of foreign matter which could affect adhesion. Typically, old concrete surfaces can be cleaned using high pressure water jet, grit/sand blasting or mechanical wire brushing, new cementitious surface required wire brushing and cleaning.

Priming

Priming is necessary for both steel and cementitious surface, use **Expanprime* Liner** on properly prepared surfaces - see Preparation section.

Expanprime* Liner is two component epoxy resin primer, supplied in pre-weight packing, and ready to mix and use, mix both components Base and Hardener properly and apply on prepared surface by brush, roller or airless spray, and allow to dry primer for at-least 6 – 8 hours, prior to top coat, pot life of mixed primer is 35 minutes @ 25 °C.

Mixing

Expancote* Liner Base and Hardener liquids should be poured from the tins container into the metal drum/bucket, and mix both components for 2 – 3 minutes until a uniform homogeneous mix is achieved. Mix the material by using slow speed drill (300 - 500 rpm) fitted with a suitable mixing paddle.

Expancote* Liner should be immediately used after mixing. Do not mix excess material then the required quantity, Keep mixing **Expancote* Liner** during the application.

Application

The thoroughly mixed material should be applied with a suitable brush, roller or airless spray equipment to achieve a uniform coating of 250 by brush or roller and 350 microns by airless spray per coat, allow to cure first coat for 4 – 6 hours, then apply second coat at the same thickness.

To obtain better results, apply material as per recommended rate of application.

Spray applications should use the correct mixing ratio to obtain satisfactory consistency, consult Fospak Expanchem for advice.

Cleaning

Expancote* Liner and **Expanprime* Liner** can be washed from tools and equipment with water before initial set. After initial set the use of **Fospak solvent 102*** is recommended or if the material is fully set mechanical removal will be necessary.

Precautions

Health and safety

Expancote* Liner, **Expanprime* Liner** and **Fospak Solvent 102** should not come in contact with the skin and eyes, or be swallowed. Ensure adequate ventilation and avoid inhalation of vapors. Some people are sensitive to resins, hardeners and solvents. Wear suitable protection clothing, gloves and eye protection.

Fire

Fospak Solvent 102 is flammable. Keep away from sources of ignition. No smoking near working area, in the event of fire, extinguish with CO² or foam. Do not use a water jet

Limitations

Expancote* Liner should not be applied if the air or substrate temperature is greater than 45°C. This may reduce the pot life of the material and increase the viscosity of mixed material.

Expancote* Liner should not be applied if the temperature of the substrate is below 5°C.

Expancote* Liner should not be applied where there is a likelihood of exposure to frost within 12 hours of the application.

Expancote* Liner should not be applied in windy conditions where early-age dust adhesion may occur, or where rain is likely within 4 - 6 hours of application

Technical support

Fospak Expanchem offers a comprehensive technical support service to specifiers, end users and contractors. It is also able to offer on-site technical assistance, an AutoCAD facility and dedicated specification assistance in locations all over the world.

Estimating

Supply

Expancote* Liner	: 10 Kg Pack. (Base & Hardener)
Expanprime* Liner	: 2.50 Kg. Pack. (Base & Hardener)

Coverage

Expancote* Liner	: 2.85 m ² / Kg. @ 250 Microns DFT
Expanprime* Liner	: 4 – 5 m ² / Kg.

Storage

Shelf life

Combined products have a shelf life of 12 months if kept in a dry store in the original, unopened packs.

Storage conditions

Store in cool, dry conditions, away from sources of heat and naked flames, in the original, unopened packs. If stored at high temperatures and/or high humidity conditions the shelf life will be reduced. **Expancote* Liner** and **Expanprime* Liner** (Base & Hardener) should be protected from direct sunlight & frost, store the material between 20 – 35 °C.

Additional Information

Fospak manufactures a wide range of products which include:

- waterproofing membranes & waterstop
- joint sealants & filler boards
- cementitious & epoxy grouts
- specialized flooring materials

Fospak additionally offers a comprehensive package of products specifically designed for the repair and refurbishment of damaged concrete. Systematic approach to concrete repair features the following:

- hand-placed repair mortars
- spray grade repair mortars
- fluid micro-concretes
- chemically resistant epoxy mortars
- anti-carbonation/anti-chloride protective coatings
- chemical and abrasion resistant coatings

For further information on any of the above, please consult your local Fospak Expanchem office - as below.

*Denotes the trademark registered

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