

Expancote* EP415

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

Uses

To provide protection to concrete and all types of **steel inclusive of CS, AS, TS & SS structures in aggressive chemical immersion conditions, tough coating provides excellent abrasion resistant surface, The material is particularly suitable for applications in tunnel, tanks, sewerage pipes, power plants, processing units, sewerage treatment plants, steel structures etc.

- Highly chemical and abrasion resistant.
- Provide excellent protection against corrosion to steel structures or steel pipes.
- Excellent bond with mortar, shotcrete, concrete, and all types of steel surface.
- Internal & external coating 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.
- Long working life
- Easy application by brush, roller & spry.
- Good resistant to water, carbon di-oxide, sulphates, chlorides, acid and alkalis, organic solvents, oil and hydro carbon products.

Description

Expancote* EP415 is two component solvent base epoxy resin protective coating, and suitable for concrete and all types of **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 or by hand, and then applied to the well prepared substrate using brush, roller or airless spray.

Design criteria

Expancote* EP415 is designed to be applied in two coats, to achieve 200 to 300 microns dry film thickness.

Specification

A chemical and abrasion resistant coating for cementitious and steel surface **Expancote* EP415** 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
Volume solid	: 57 – 60 %
Pot life @ 25 °C	: 3 hours
Pot life @ 35 °C	: 1.50 hours
Time between coating:	
@ 25 °C	: 12 – 24 hours.
@ 35 °C	: 6 – 12 hours.
Initial hardness	
@ 25 °C	: 30 hours.
@ 35 °C	: 16 hours.
Full cure	
@ 25 °C	: 10 days
@ 35 °C	: 7 days.

Chemical properties:

Expancote* EP415 is resistant to a wide range of chemicals. Few of them are listed below. Specific data will be available upon request.

Sodium hydroxide 25%	:Resistant
Citric Acid 10%	:Resistant
Hydrochloric Acid (10%)	:Resistant
Lactic Acid (10%)	:Resistant
Phosphoric acid 10%	:Resistant
Petrol	:Resistant
Engine Oil	:Resistant
Sulphuric Acid (10%)	:Resistant

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 not necessary for both **steel and cementitious surface, but surface must be properly clean before application of **Expancote* EP415**

Mixing

Expancote* EP415 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, or mix by hand properly.

Expancote* EP415 should be immediately used after mixing. Do not mix excess material then the required quantity, Keep mixing **Expancote* EP415** during the application, while mixing do not disturb base and hardener ratio, it is highly recommended to mix complete pack, avoid mixing of part pack.

Application

The thoroughly mixed material should be applied with a suitable brush, roller or airless spray equipment to achieve a uniform coating by using brush or roller or airless spray, allow to cure first coat for 6 – 24 hours depend on ambient temperature, 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* EP415 can be wash from tools and equipment with **Fospak solvent 102***, if the material is fully set mechanical removal will be necessary.

Precautions

Health and safety

Expancote* EP415 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 peoples are sensitive to resins, hardeners and solvents. Wear suitable protection clothing, gloves and eye protection.

Fire

Expancote* EP415 and **Fospak Solvent 102** are 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* EP415 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* EP415 should not be applied if the temperature of the substrate is below 5°C.

Expancote* EP415 should not be applied where there is a likelihood of exposure to frost within 12 hours of the application.

Expancote* EP415 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* EP415	: 2.50 & 5.00 Kg Pack (Base & Hardener)
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Coverage

Expancote* EP415	: 3 – 5 m ² / Kg. / Coat
Wet film thickness	: 200 – 300 microns / Coat

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* EP415** (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
** Carbon Steel, Alloy Steel, Tool Steel
& Stainless Steel

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