

# Expancote\* EP410

## Highly chemical resistant two pack epoxy system

### Uses

To provide protection to concrete and steel structures in aggressive chemical immersion conditions. The material is particularly suitable for applications in process plants and sewage works.

### Advantages

Excellent chemical resistance  
Excellent adhesion to concrete and steel  
Excellent abrasion resistance

### Description

Expancote\* EP410 is a high build, solvent free, two pack epoxy formulation. It is supplied in pre-measured quantities ready for site mixing and use. It is used in conjunction with solvent containing primers for concrete and steel.

### Design criteria

Expancote\* EP410 is designed to be applied in one coat to achieve a minimum total dry film thickness of 250 microns. When used in conjunction with glass fiber reinforcement to bridge fine cracks, it is applied in two coats to achieve a minimum total dry film thickness of 500 microns. Expancote\* EP410 is designed to be used with Expanprime 25 on concrete surfaces. It is green in colour.

### Properties

<b>Volume solids</b>	:	100%
<b>Pot life</b>		
<b>@ 20°C</b>	:	3½ hours
<b>@ 35°C</b>	:	1½ - 2 hours

### Chemical resistance:

#### Acids (m/v)

<b>Citric acid 60%</b>	:	Excellent
<b>Hydrochloric acid 50%</b>	:	Excellent
<b>Lactic acid 20%</b>	:	Excellent
<b>Acetic acid 25%</b>	:	Excellent
<b>Sulphuric acid 85%</b>	:	Excellent

#### Alkalis (m/v)

<b>Sodium hydroxide 65%</b>	:	Excellent
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The local Expanchem office should be consulted in respect of other chemicals.

### Technical support

Expanchem Fospak offers a comprehensive range of high performance, high quality flooring, jointing and repair products for both new and existing floor surfaces. In addition, the company offers a 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.

### Specification

Chemical and abrasion resistant lining

The chemical and abrasion resistant lining shall be Expancote\* EP410, a high build, two pack epoxy system specifically designed to provide a tough and impermeable film.

### Instructions for use

#### Preparation

#### Concrete surfaces

All surfaces must be dry, smooth, sound and free from debris and loose material. Surfaces must be free from contamination such as oil, grease, dust, loose particles and organic growth. Concrete surfaces must be fully cured, laitance-free and free from any traces of shuttering release oils and curing compounds. All surfaces should then be prepared to remove all foreign matter, open up blow holes and provide a suitable key for Expancote\* EP410.

All blow holes and imperfections should be filled with Expanmortar FC.

All surfaces should then be primed with Expanprime 25. It is mixed in the proportions supplied and applied in a thin, continuous film. The primer should be touch dry but allowed to cure for no more than 24 hours at 20°C or no more than 16 hours at 35°C before the application of Expancote\* EP410. The pot life of Expanprime 25 is 80 minutes at 20°C, 30 minutes at 35°C.

#### Steel surfaces

All surfaces should be grit blasted to meet the requirements of BS 7079, Sa3. The lining work should be programmed so that newly cleaned steel is primed before the formation of rust or scale.



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### Mixing

The contents of the base can should be stirred thoroughly to disperse any settlement. The entire contents of the hardener can should be added to the base container and mixed thoroughly until a uniform consistency is obtained, taking particular care to scrape the sides and bottom of the container. It is recommended that mechanical mixing be employed, using a Expanchem mixing paddle on a heavy duty, slow speed electric drill.

### Application

<b>Number of coats</b>	: 1
<b>Theoretical application rate per coat</b>	: 3.50 m <sup>2</sup> / Kg.
<b>Theoretical wet film thickness per coat</b>	: 250 microns
<b>Tack free time</b>	: 2-3 hrs @ 20°C
<b>ASTM D1640</b>	1-1½hrs @ 35°C
<b>Overcoating times, ASTM 1640</b>	
<b>@ 20°C</b>	: 16-36 hours
<b>@ 35°C</b>	: 6-18 hours
<b>Fully cured – ASTM D1640</b>	
<b>@ 20°C</b>	: 7 days
<b>@ 35°C</b>	: 6 days

The minimum application temperature is 5°C.

All primed surfaces should be treated with Expancote\* EP410.

The thoroughly mixed material should be applied with a suitable brush, roller or spray equipment to achieve a uniform coating with a wet film thickness not less than 250 microns. Any movement joint in the structure should be expressed through the coating and sealed with an appropriate sealant.

### Use of glass fiber reinforcement

Expancote\* EP410 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 no more than 24 hours at 20°C and no more than 18 hours at 35°C between coats, and again achieving a wet film thickness not less than 250 microns.

Suitable cloth is open weave 110 g/m<sup>2</sup> glass cloth.

### Cleaning

Expanprime 25 and Expancote\* EP410 should be removed from tools and equipment with Expanchem Solvent 102 immediately after use. Cured material can only be removed mechanically.

### Limitations

Expanprime 25 and Expancote\* EP410 are formulated for application to clean, sound concrete and steel. They should not be applied over existing coatings.

Application should not be undertaken if the temperature is below 5°C or is 5°C and falling.

In conditions of high relative humidity i.e. 85-90% good ventilation conditions are essential. Substrate temperature should be at least 3°C above dew point.

Expancote\* EP410 is not colour stable when exposed to direct sunlight, nor when in contact with some chemicals.

### Estimating

#### Supply

<b>Expanprime 25</b>	: 1 and 2.50 Kg. packs
<b>Expancote* EP410</b>	: 2.50 & 5.00 Kg. packs
<b>Expanchem Solvent 102</b>	: 5 liter cans

#### Coverage

<b>Expanprime 25</b>	: 6.0 - 8.0 m <sup>2</sup> / Kg.
<b>Expancote* EP410</b>	: 3.50 m <sup>2</sup> / Kg. @ 250 microns wft

The coverage figures are theoretical – due to wastage factors and the variety and nature of possible substrates, practical coverage figures may be substantially reduced.



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## Storage

### Shelf life

All products have a shelf life of 12 months if kept in a dry store between 5°C and 30°C in the original, unopened containers. If stored at high temperatures, the shelf life will be reduced.

### Precautions

#### Health and safety

Expancote EP410, Expanprime\* 25 and Expanchem Solvent 102 should not come in contact with skin or eyes, nor should they be swallowed. Avoid inhalation of vapours and ensure adequate ventilation.

Some people are sensitive to resins, hardeners and solvents. Wear suitable protective clothing, gloves and eye/face protection. Barrier creams such as Kerodex Antisolvent or Rozalex Antipaint provide additional skin protection.

Should accidental skin contact occur, remove immediately with a resin removing cream such as Kerocleanse Standard Grade Skin Cleanser or Rozaklens Industrial Skin Cleanser, followed by washing with soap and water - do not use solvent.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. If swallowed seek medical attention immediately - do not induce vomiting.

Expancote\* EP410 contains 4, 4' – Diaminodiphenylmethane. May cause cancer. Danger of serious damage to health by prolonged exposure in contact with skin. Avoid contact with skin and eyes, ingestion and inhalation of vapour. Ensure adequate ventilation. If working in confined areas, then suitable respiratory, protective equipment must be worn. Wear suitable protective clothing, gloves and eye/face protection.

#### Fire

Expancote\* EP410 is non-flammable.

Expanprime\* 25 and Expanchem Solvent 102 are flammable. Keep away from sources of ignition. No smoking. In the event of fire, extinguish with CO2 or foam. Do not use a water jet.

#### Flash points

Expanprime \* 25 : 55°C

Expanchem Solvent 102 : 33°C

\*Denotes the trademark registered.

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### Important note

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