

# CHEMPROOF FLOOR TOP

## epigen 4040

**epigen**

Performance Resins &  
Composite Systems

### TECHNICAL BULLETIN

Epigen 4040 is a multipurpose binder providing the excellent chemical resistance to a wide range of acids and alkali, in many different applications. Epigen 4040 is based on a high performance Novolac resin technology with cycloaliphatic amine and solventless character for increased OH&S, to meet the highest standards of user safety and corrosion protection.

Primarily a binder to be used with aggregate or glass fibre in the treatment of steel, concrete and brick where acids, alkalis, organic solvents, singularly or in combination rise to waste away valuable assets or introduce environmental dangers. Novolac functionality and high cross linking density is the key to the Chemproof technology which allows addition of a wide variety of aggregates for laminate thickness and abrasion resistance without compromising chemical resistance.

#### TYPICAL APPLICATIONS

Acid Bunds	Chemical Containment
Pipelines & Valves	Acid Sumps & Drains
Concrete Repair	Laminating

The surface finish may be laid as a thin film however it is recommended 6mm be a minimum in unison with a low porosity aggregate like silica sand. It is acceptable to apply high builds in most situations to increase strength. Application to inverted surfaces can be easily carried out without sag or fall when using fine grade aggregate. Large areas may be quickly treated preparing the product in self levelling mode.

#### FEATURES

- Superior Novolac polymer system
- Free of all solvents - zero VOC
- Outstanding resistance to chemicals
- Versatility in application - can be used with GF
- Suitable in patching or repair of mortar
- Can be mixed with a variety of aggregates
- Application DFT from 1mm to over 40mm
- Engineered for high mechanical strength
- Versatility in application, in any orientation



#### PROFILE

Ratio by weight	2 parts "A" to 1 part "B"
Pot Life minutes @ 24°C	30
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.1
Tack free time @ 24°C	180 minutes

#### TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>110
Tensile strength ASTM D638, Mpa	>25
Flexural strength ASTM D790, Mpa	>45
Hardness, Shore D	84
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	120
Heat deflection temperature ASTM D648, °C	75
Thin Film Gel, (min recoat time) Minutes	180
Maximum recoat time, Hours	48
Ultimate cure time to Service, Hours	96

This information is supplied as an indicative reference only. Caution should be used where direct comparisons are to be made.

### SURFACE PREPARATION

In line with all cases where good adhesion is expected, the substrate should be reasonably clean and free from loose particles. Methods for substrate preparation include abrasive blasting, etching, grinding or scarifying. The technique best suited depends on the substrate, the service conditions, and practical considerations. Advice is available from Peerless Industrial Systems to ensure the correct preparation procedure is employed for specific applications.

### APPLICATION

Mixing of product should be carried out using slow speed mixers or spatulas, and completed by adding to the component "A", the component "B". Ensure the mix is homogenous and free from lumps.

### MORTAR PREPARATION

Epigen 4040 is designed to be used as a binder to which aggregate is to be added. Extensive work has resulted in the recommendation of dried silica sand in the range 0.6mm - 1.2mm. This is often referred to as 16/30 mesh size. Variations in porosity and strength may occur when over adding aggregate or in using too fine a grade.

#### TROWEL

In using Silica Sand 16/30 mesh, a mix ratio of 1 part Epigen 4040 to 5 parts sand provides an ideal mortar to trowel.

Sand can be broadcast after application, then swept off when cured and overcoated to a raised nonslip if desired.

#### SELF LEVELLING

Mix 1 part Epigen 4040 to 1.5 parts 30/50 sand and after applying and using a spiked roller to address air entrapment, blind out by broadcasting 16/30 sand over top.

Sweep off excess and top coat as required.

#### VERTICAL SURFACES

Prime the surface with a very thin coat of Epigen 4040 binder and then proceed to apply a mortar based on 1 part 4040 with up to 5 parts 100 mesh silica sand.

### COVERAGE GUIDE

Trowel (final DFT 6mm)

1.8 kg of *Epigen 4040* / m<sup>2</sup>.

9 kg of 16/30 Silica Sand / m<sup>2</sup>.

For Overlay: 1 kg of 16/30 Silica Sand / m<sup>2</sup> followed by *Epigen 4040* or *Epigen 4028* @ 0.7 kg/ m<sup>2</sup>.

For vertical applications, replace 16/30 sand with 100 mesh.

Self Levelling (nominally 3mm)

1.4 kg of *Epigen 4040* / m<sup>2</sup>.

2.1 kg of 30/50 Silica Sand / m<sup>2</sup>.

Apply this mortar to nominally 2mm followed by broadcasting: 16/30 Silica Sand @ 1.4 kg/ m<sup>2</sup>.

After set, a seal coat is recommended using:

*Epigen 4040* or *Epigen 4028* @ 0.7 kg/ m<sup>2</sup>.

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### CHEMICAL RESISTANCE

Tested at 21°C. Samples cured for 10 days at 25°C. Curing at elevated temperatures will improve chemical resistance.

1 = Continuous or long term immersion

2 = Short term immersion

3 = Splash and spills

4 = Avoid contact

Acetic Acid, 10 %	2	Acetone	2
Acetic Acid, Glacial	2	Ammonium Chloride	1
Hydrochloric Acid, 5 %	1	Beer	1
Hydrochloric Acid, 10 %	1	Dichloromethane	3
Hydrochloric Acid, conc	1	Diesel Fuel	1
Nitric Acid, 5 %	2	Isopropyl Alcohol	1
Nitric Acid, 10 %	2	Kerosene	1
Phosphoric Acid, 5 %	1	Petrol	1
Phosphoric Acid, 20 %	1	Salt Water	1
Sulfuric Acid, 20 %	1	Sewage	1
Sulfuric Acid, 75 %	1	Skydrol	1
Sulfuric Acid, 98 %	2	Sodium Cyanide	1
Ammonium Hydroxide, 20 %	1	Sodium Hypochlorite	1
Ammonium Hydroxide, 50 %	1	Toluene	2
Potassium Hydroxide, 5 %	1	Trichloroethane	2
Potassium Hydroxide, 20 %	1	Vinegar	1
Sodium Hydroxide, 20 %	1	Wine	1
Sodium Hydroxide, 50 %	1	Xylene	2

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Note : Under acidic conditions, Epigen 4040 has been designed to change colour allowing OH&S steps to be taken in cleaning up spills or as a warning to beware.

### CURE

Variations in cure may arise due to the amount of material being applied, the thickness of material being applied, the surface temperature, and the product temperature. The cure may be increased by heating product or by leaving mixed material stand for 15 minutes before use. The cure may be decreased by cooling the product before mixing.

## EPIGEN PRODUCTS

### MANUFACTURED BY

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