

CHEMICAL RESISTANT FLOOR TOP - NAR epigen 4055

epigen

Performance Resins &
Composite Systems

TECHNICAL BULLETIN

Developed as a multipurpose binder system for use as a hard wearing lining that possesses resistance to the effects of corrosive chemicals. Primarily designed for use in Nitric Acid proofing of concrete and bunds, the performance of Epigen 4055 is equally satisfactory for use in the protection of structural steel work, pump bases and various other static fixtures in contact with corrosive chemicals.

Epigen 4055 compliments the existing Chemproof Series for flooring applications by providing unparalleled adhesion to a substrate by greater wetting power, with effortless application by trowel, or as a self leveller, enabling large areas to be coated extremely quickly.

FEATURES

Nitric Acid Resistance - One simple choice.

Free of all solvents - zero VOC

Application Enhanced - Application and finish with relative ease.

Versatility in application - can be used with GF

Suitable in patching or repair of mortar



PROFILE

Ratio by weight	15 parts "A" to 9 part "B"
Pot Life minutes @ 24°C	40
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.1
Mortar Tack free time @ 24°C	8 hours
Primer Tack free time @ 24°C	12 hours

TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>70
Tensile strength ASTM D638, Mpa	>20
Flexural strength ASTM D790, Mpa	16
Hardness, Shore D	84
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	105
Heat deflection temperature ASTM D648, °C	70
Thin Film Gel, (min recoat time) Minutes	120
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.

CNA - Concentrated Nitric Acid

Epigen 4055 was the result of extended trials with explosives industry who have demand for improved protection and life of civil assets due to the use of Nitric Acid on site. Together with professional contractors, work to maximise the ease and speed with which a protective coating may be applied was carried out.

Substantial and ongoing assessment to a wide range of chemicals ensures extended knowledge of the products performance continues. Epigen 4055 has been found to be suitable in splash and spill applications of all concentrations of Hydroxide Salts, Acids, including Sulfuric and Hydrochloric, as well as most petroleum and organic solvents.

The emphasis is however on suitable protection of substrates against Nitric Acid, specifically up to 98% concentration with considerable contact time.

Although Epigen 4055 is not recommended for immersion service, it will maintain protection of underlying surfaces for several days in 56 – 98 % Nitric Acid.

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.

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 before use.

MORTAR PREPARATION

Epigen 4055 can be used as a binder to which aggregate is to be added. Excellent results are achieved when 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 changing grades of aggregate.

TROWEL

In using Silica Sand 16/30 mesh, a mix ration of 1 part Epigen 4055 to 8 parts sand provides an ideal trowel on mortar.

SELF LEVELLING

Mix 1 part Epigen 4055 to 1.5 parts 30/50 sand and spread out with a squeegee or trowel, then over roll using a spiked roller to release air entrainment. Blind out by broadcasting 16/30 sand over top. Sweep off excess and top coat as required.

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	3
Acetic Acid, Glacial	3	Ammonium Chloride	1
Hydrochloric Acid, 5 %	2	Beer	1
Hydrochloric Acid, 10 %	2	Dichloromethane	4
Hydrochloric Acid, conc	3	Diesel Fuel	2
Nitric Acid, 20 %	2	Isopropyl Alcohol	2
Nitric Acid, 98 %	2	Kerosene	2
Phosphoric Acid, 10 %	2	Petrol	2
Phosphoric Acid, 35 %	3	Salt Water	1
Sulfuric Acid, 30 %	3	Sewage	2
Sulfuric Acid, 70 %	3	Skydrol	3
Sulfuric Acid, 98 %	3	Sodium Cyanide	1
Ammonium Hydroxide, 5 %	2	Sodium Hypochlorite	3
Ammonium Hydroxide, 20 %	2	Toluene	4
Potassium Hydroxide, 5 %	2	Trichloroethane	3
Potassium Hydroxide, 20 %	2	Wine	2
Sodium Hydroxide, 20 %	2	Xylene	3
Sodium Hydroxide, 50 %	2		

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COVERAGE GUIDE

Trowel (final DFT 6mm)

1.2 kg of *Epigen 4055* / m².

9.6 kg of 16/30 Silica Sand / m².

Self Levelling (nominally 3mm)

1.4 kg of *Epigen 4055* / m².

2.1 kg of 30/50 Silica Sand / m².

Apply this mortar to nominally 2mm followed by broadcasting:

16/30 Silica Sand @ 1.4 kg / m².

After set, a seal coat is recommended.

Primer Applications

1.1 kg of *Epigen 4055* yields 1000micron/ m².

Nominally 100 micron on steel or 300 micron on concrete.

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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