

FAST CURE ABRASION RESISTANT COMPOSITE

epigen FC2

epigen
Performance Resins &
Composite Systems

TECHNICAL BULLETIN

A rapid set, two component polymer composite based on epoxy resin and abrasion resistant ceramic which when mixed according to directions, cures at room temperature to form a tough, inert material possessing excellent wear resistance properties and adhering strongly to suitably treated metal, concrete and other substances.

The polymer composite comprises graded sintered ceramic of extreme hardness and abrasion resistance. The polymer binder cures extremely quickly to form an infusible material possessing excellent wear resistance.

The surface finish may be laid as a thin film with 6mm recommended to be the minimum. It is acceptable to apply high builds in most situations since this results in greater abrasion resistance and impact tolerance. Application to inverted surfaces can be easily carried out with minimal sag.

TYPICAL APPLICATIONS

Pump Bowls	Chutes & Bins
Slurry Lines	Pipe Elbows
Screens	Valves

INDUSTRY TYPES IN USE

Dredging,	Iron Ore,	Quarrying,
Coal Mining,	Marine,	Diamond,
Copper,	Nickel,	Power Generation,
Gold,	Manganese,	WWTP,

FEATURES

- Excellent resistance to sliding abrasion
- Tough polymer with high adhesive strength
- Fast cure for rapid turn around
- Free of all solvents - zero VOC
- Engineered for high mechanical strength
- Versatility in application
- Cures under cold adverse conditions
- Very easy application in any orientation
- Recoatible with minimal preparation



PROFILE

Colour	Dark Grey
Ratio by weight	2 "A" to 1 "B"
	2 kg Component "A"
	1 kg Component "B"
Pot Life minutes @ 20°C	20
Mixed consistency @ 20°C	Trowellable Putty
Specific gravity when mixed	2.0
Coverage, /m ² @ 10mm	20.0kg

TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>65
Tensile strength ASTM D638, Mpa	28
Flexural strength ASTM D790, Mpa	27
Hardness, Shore D	>90
Elongation ASTM D638, %	0.3
Thermal conductivity ASTM C177, Kcal/m.hroC	0.6
Maximum exposure temperature, °C	125
Heat deflection temperature ASTM D648, °C	80
Thin Film Gel @ 10mm, Minutes	60
Thin Film Set @ 10mm, Minutes	180
Ultimate cure time to Service @ 10mm, Hours	24
Thin Film Gel @ 20mm, Minutes	40
Thin Film Set @ 20mm, Minutes	70
Ultimate cure time to Service @ 20mm, Hours	18

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

FAST CURE ABRASION RESISTANT COATING epigen FC2



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 are varied and include abrasive blasting, etching, grinding or scarifying. The technique may vary depending on the substrate, service conditions, and other practical considerations.

Specialist advice is available to assist in ensuring 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.

Application can be carried out by applying mixed compound directly to the desired area or component with gloved hands or by tools such as paint scrapers, putty knives or flat steel trowels, the latter mainly for large horizontal areas.

Application can be carried out with relative ease whether in either vertical or horizontal configurations.

FC2 may be finished smooth and flat with the aid of water.



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	2
Hydrochloric Acid, conc	2	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, 5 %	2	Sewage	1
Sulfuric Acid, 20 %	2	Skydrol	1
Ammonium Hydroxide, 5 %	1	Sodium Cyanide	1
Ammonium Hydroxide, 20 %	1	Sodium Hypochlorite	2
Potassium Hydroxide, 5 %	1	Toluene	2
Potassium Hydroxide, 20 %	1	Trichloroethane	2
Sodium Hydroxide, 5 %	1	Wine	1
Sodium Hydroxide, 20 %	1	Xylene	1

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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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