HIGH TEMPERATURE BINDER, PRIMER & LAMINATING RESIN

epigen XD004

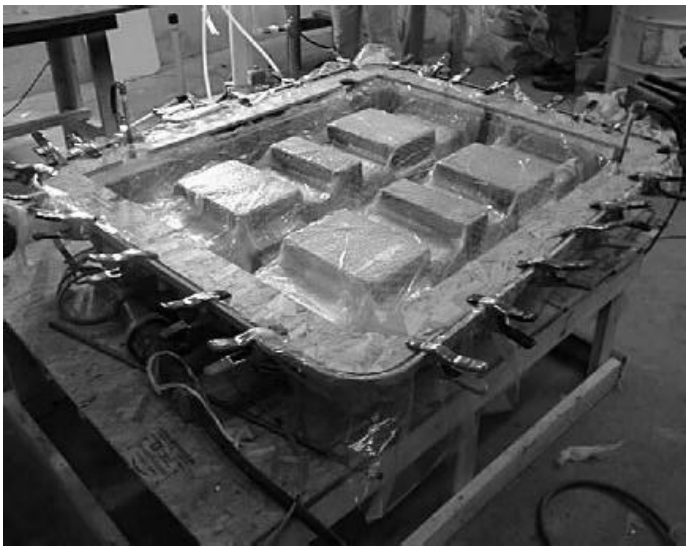
epigen
Performance Resins & Composite Systems

TECHNICAL BULLETIN

XD004 is a two component, epoxy resin binder system that exhibits extremely high strength when post cured, and is suitable in providing service well over 150 Celsius maintaining stability and mechanical properties. It is suitable for service as a metal or concrete primer, a fibreglass laminating resin, or filled with a variety of aggregates to produce a high strength epoxy mortar with extremely good chemical resistance.

XD004 is also suitable for use in combination with other Epigen products such as rebuilding floors or tank linings.

Extremely high cross linking density affords XD004 the ability to resist a range of organic solvents including ketones and chlorinated aromatics . Also highly favoured where the resin is required to address hot highly corrosive acids.



TYPICAL APPLICATIONS

Fibreglass Laminating	Component moulding
Sump Lining	Electrical Potting
Concrete & Steel Primer	GRP Fabrication
Exhaust Stacks	High Temperature Ducting
Sulfur Pits	Filament Winding

FEATURES

HDT 150 Celsius - Practical service beyond 200 Celsius

Outstanding resistance to chemicals & acids

Free of all solvents - zero VOC

Versatility in application - can be used with GF

Suitable in patching or repair of mortar in hot service

Engineered for high strength.

Resistant to organic solvents

Very low shrinkage during cure

PROFILE

Ratio by weight	3.3 parts “A” to 1 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	>30
Flexural strength ASTM D790, Mpa	26
Hardness, Shore D	89
Maximum exposure temperature, ° C	240*
Heat deflection temperature ASTM D648, ° C	150
Thin Film Gel , (min recoat time) Minutes	120
Maximum recoat time, Hours	**
Ultimate cure time to Service , Hours	***

* Thermal degradation temperature. This does not necessarily represent the ultimate maximum permissable temperature.

** Multiple coats should be avoided to protect against carbamate induced delamination

*** Ultimate properties and cure depend on post cure

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

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SURFACE PREPARATION
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 homogenus and free from lumps.

MORTAR PREPARATION
XD004 can be used as a binder to which aggregate is to be added. Excellent results are acheived 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 XD004 to 8 parts sand provides an ideal trowel on mortar.

SELF LEVELLING
Mix 1 part XD004 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.

FIBREGLASS FABRICATION
The consumption of resin to fibreglass depends on the type of many factors including the glass filament size, density and weave. Consult the fibreglass suppliers publish data on resin uptake and content for consumption rates.

POSTCURE
To acheive full cross linking density and maximum performance, applied product should be allowed to become “tack free” before applying heat cure. This will take several hours at at 25°C.

Heat curing can be carried out by:
(a) Post gel at 50°C for 6 - 8 hours using heat lamps, etc.
(b) Followed by post cure for 6 - 8 hours at 120°C.
Step (b) can be carried out by insitu curing. Excessive heat should be avoided during the gel stage to protect against sag and curtaining.

EVERY EFFORT SHOULD BE TAKEN TO PROTECT AGAINST AIR ENCAPSULATION DURING MIXING & CARBAMATE FORMATION DURING APPLICATION. CONSULT WITH THE MANUFACTURER FOR MORE DETAILS WITH RESPECT TO THE SPECIFIC APPLICATION.

XD004:2010/Feb
rev02,2011/Sept

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	1
Acetic Acid, Glacial	2	Ammonium Chloride	1
Hydrochloric Acid, 5 %	1	Beer	1
Hydrochloric Acid, 10 %	1	Dichloromethane	2
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, 5 %	1	Sewage	1
Sulfuric Acid, 20 %	1	Skydrol	1
Ammonium Hydroxide, 5 %	1	Sodium Cyanide	1
Ammonium Hydroxide, 20 %	1	Sodium Hypochlorite	1
Potassium Hydroxide, 5 %	1	Toluene	2
Potassium Hydroxide, 20 %	1	Trichloroethane	1
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**
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