

PHOENIX REFRACTION EPOXY

epigen XR 367

TECHNICAL BULLETIN

Phoenix is a new generation composite compound that has been formulated to use all the advantages of epoxy polymer technology, with refractory properties. Phoenix exhibits none of the burning, smoking, fumes or other fire hazards associated with traditional materials.

It can be used to treat a variety of new or damaged surfaces and components to improve or prolong their life under high heat normally associated with spillages of molten metals. Phoenix is a two component polymer composite comprising graded inorganic fillers of extreme hardness and abrasion resistance. The polymer binder cures to form a tough, infusible material possessing excellent chemical resistance, and adheres strongly to suitably treated surfaces.

The surface finish may be laid as a thin film however it is recommended 10mm be a minimum in unison with a low porosity aggregate like silica sand. It is acceptable to apply high builds in most situations since the thicker the application the longer the life. Application to inverted surfaces can be easily carried out without sag or fall when using fine grade aggregate.

TYPICAL APPLICATIONS

Foundry Floors	Kerbing & Walls
Refractory Brick	Repair of Refractory Shells
Ship & Rig Decking	Fire or Heat Critical Flooring

INDUSTRY TYPES IN USE

Metal Refineries,	Smelters,
Foundries,	Heat Containment,
Power Generation,	Minerals Processing

FEATURES

- Transition from Epoxy to Refractory during service.
- Resists burning, smoking, fuming when subjected to spillages of molten metals.
- Excellent abrasion resistance.
- Application DFT from 6mm to over 40mm in 1 coat.
- Unrestricted service in less than 24 hours.
- Free of all solvents - zero VOC.
- Engineered for high mechanical strength.
- Versatility in application.
- Very easy application in any orientation.



PROFILE

Colour	Mid Grey
Ratio by weight	5.7 "A" to 1 "B"
	2.85 kg Component "A"
	0.50 kg Component "B"
Ratio by volume	4.4 "A" to 1 "B"
Pot Life minutes @ 20°C	45
Mixed consistency @ 20°C	Flowable Liquid
Specific gravity when mixed	1.3

TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>80
Tensile strength ASTM D638, Mpa	>10
Flexural strength ASTM D790, Mpa	>15
Hardness, Shore D	88
Thermal conductivity ASTM C177, Kcal/m.hr°C	
Initial HDT ASTM D648, °C	125
Thin Film Gel @ 10mm, Minutes	
Thin Film Set @ 10mm, Minutes	
Ultimate cure time to Service @ 10mm, Hours	24
Thin Film Gel @ 20mm, Minutes	
Thin Film Set @ 20mm, Minutes	
Ultimate cure time to Service @ 20mm, Hours	18

This information is supplied as an indicative reference only.

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. Specialist 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.

Retain some of the resin mix for priming or the substrate. Add select aggregate to the balance of the resin and further mix until homogenous.

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



WARNING: CAUTION SHOULD BE MAINTAINED WHEN APPLYING OVER POROUS OR VOID BACKED SUBSTRATE. HEAT TRANSFER CAN RESULT IN HIGH EXPANSION FORCES WITHIN THE SUBSTRATE THAT COULD RESULT IN DELAMINATION.

MORTAR PREPARATION

Phoenix XR 367 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. Sintered Aluminium Oxide has also been used with excellent results, especially in instances of heavy abrasive traffic. Aggregate must be stable to high temperature and have negligible porosity and maintain high mechanical stability.

In using Silica Sand 16/30 mesh, a mix ration of 1 part Phoenix to 3 parts sand provides for a self levelling consistency which can be blinded out with additional sand before cure takes place. Up to 4 parts sand may be added before the incidence of air entrainment during mixing may contribute to air blisters in service.

CHEMICAL RESISTANCE

Phoenix maintains excellent resistance to a range of chemicals including acids, alkali's, and solvents.

Because service conditions may vary quite significantly, no chemical resistance data will be published. Consult with the manufacturers technical department on your specific application.

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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