

Technical Data Sheet

Epox-1392

(Ceramic - HT2)

Product Description

A two component high temperature coating system resistant to water, aqueous solution and hydrocarbons up to temperature of 248 F (120 C) designed specifically to provide erosion corrosion protection in acid contaminated water/hydrocarbon system. For use original equipment manufacture or repair situation.

Application areas

When mixed and applied as detailed in the instruction for use, the system is ideally suited for application to the following

| Condensate extraction pumps | condensate return tanks | evaporators |
|-----------------------------|----------------------------------|-------------------|
| Heat exchanger barrels | oil/gas and oil/water separators | autoclaves |
| Scrubber units | calorifiers | distillation unit |

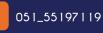
Typical Properties

| Property | part A | part B | mixed system |
|------------------------------|-----------|--------|--------------|
| Appearance | paste | liquid | liquid |
| Colour | dark gray | green | gray |
| Density (g/cm3) | 2.3 | 0.95 | 2.1 |
| Pot life at 25°C, 100 g, min | | | 30 min |

Processing

| Mix ratio Product | by weight |
|-------------------|-----------|
| Part A resin | 100 |
| Part B hardener | 8 |

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Pretreatment

The strength and durability of a bonded joint are dependent on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone, isopropanol (for plastics) or other proprietary degreasing agents in order to remove all traces of oil, grease and dirt. Low-grade alcohol, gasoline, or paint thinners should never be used. The strongest and most durable joints are obtained by either mechanically abrading or chemically etching the degreased surfaces. Abrading should be followed by a second degreasing treatment.

Instructions for use

1. to ensure an effective molecular weld

metallic surfaces – apply only to blast cleaned surfaces

- a. brush away loose contamination and degrease with a rag soaked in(cleaner/degreaser)or any other effective cleaner which does not leave a residue e.g. methyl ethyl ketone (MEK).
- b. Select an abrasive to give the necessary standard of cleanliness and minimum depth of profile of 3 mils. use only an angular abrasive.
- Blast clean the metal surface to achieve the following standard of cleanliness Iso 8501-1 sa 2 ¹/₂ very thorough blast cleaning
- d. After blasting, metal surfaces should be coated before any oxidation of the surface takes place

Salt contaminated surfaces

The should salt contamination of the prepared substrate immediately prior to application, shall be less than 20 mg/m2.

Metal surfaces that have been immersed for any period in salt solution e.g. sea water, should be blasted the required standard, left for 24 hours to allow the ingrained salt sweat to the surface, then washed prior to a further brush blast to remove these. This process may need to be repeated several times to commercially available that will assist and speed salt removal.







2. Applying

For the best results

Do not apply when

- a. The temperature is below 59 F(15 C) or the relative humidity is above 90%
- b. The substrate temperature is less than 5 F(3 C) above dew point.
- c. rain, snow, fog or mist is present
- d. there is moisture on the metal surface or is likely to be deposited by subsequent condensation.
- e. The working environment is likely to be contaminated by oil/grease from adjacent equipment or smoke from kerosene heaters or tobacco smoking.
 - 2-1 Apply the Epox-1392 directly on to the prepared surface with applicator our spatula provided
 - 2-2 Before carrying out repair of applying a second coat, wash the surface of the Epox-1392 with warm detergent solution to remove any amine bloom that has formed. Rains with clean water and allow to dry
 - 2-3 Grit blast to create a frosted surface free from any gloss with a target profile of 1.5 mils. Remove debris cleaner which does not leave a residue e.g. MEK.
 - 2-4 Apply a second coat Epox-1392 observing the recommended film thickness and coverage rate stated above.

Coverage rates

| Recommended number of coat | 2 |
|----------------------------------|--------------------------------|
| Target thickness 1 st coat | 18 mils (450 microns) |
| Target thickness 2 nd coat | 18 mils (450 microns) |
| Minimum total DFT | 24 mil (600 microns) |
| Maximum total DFT | Only limited by sag resistance |
| Theoretical coverage rate 1 coat | 10.4 sq.ft (0.97 m2)/kg |
| Theoretical coverage rate 2 coat | 10.4 sq.ft (0.97 m2)/kg |
| Theoretical coverage rate to | 7.9 sq.ft (0.73 m2)/kg |
| achieve minimum | |
| recommended system thickness | |









Practical coverage rate

Appropriate loss factors must be applied to the above coverage rates. In practice, many factors influence the actual coverage rate achieved. On rough surfaces such as pitted steel the practical coverage rate will be reduced. Application at low temperature will also reduce practical coverage rates further.

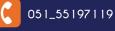
3. Completion of the molecular reaction

Allow Epox-1392 to solidify as below subjecting it to the condition indicated.

| Ambient temperature | Time until inspection | Time until full service | Time until post-cure (if required) | |
|------------------------|-----------------------|-------------------------|---------------------------------------|----------|
| | | | dry | wet |
| 68 F/ 20 C | 12 hours | 96 hours | 12 hours | 12 hours |
| 86 F/ 30 C | 5 hours | 18 hours | 12 hours | 12 hours |
| 104 F/ 40 C | 3 hours | 10 hours | 12 hours | 12 hours |

Equipment maintenance

All tools should be cleaned with hot soapy water before the adhesive residue dries. Removing cooked debris is a difficult and time consuming operation. If solvents such as acetone are used for cleaning, staff should take appropriate precautions and, in addition, avoid skin and eye contact.



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Typical Physical Properties

| Property | value | test method |
|-----------------------|--------------------|-------------|
| Tensile shear | | |
| Mild steel | 2320 psi (16 mpa) | ASTM D1002 |
| Pull of adhesion | 2465 psi (17 mpa) | ASTM D4541 |
| Abrasion cs-17 wheels | 32.5 (mg/cycle) | ASTM D4060 |
| Compressive strength | 14793 psi (102 mpa | ASTM D695 |
| Tensile strength | 4790 psi (33 mpa) | ASTM D638 |
| Flexural strength | 6960 psi (48 mpa) | ASTM D790 |
| Hardness | | |
| Shore D | 84 | ASTM D2240 |
| Barcol hardness | 40 | ASTM D2583 |
| Heat resistanc | -40C-230C | ASTM D648 |
| Impact resist | 25 j/m | ASTM D256 |

chemical properties

| Type of chemical | Product resistance | Type of chemical | Product resistance |
|-----------------------|---------------------------|------------------------|--------------------|
| engine oil | Excellent | 30% sodium hydroxide | Excellent |
| 50% sulfuric acid | Excellent | 50%Calcium hydroxide | Excellent |
| 30% sulfuric acid | Excellent | 20%Potassium hydroxide | Excellent |
| 37% hydrochloric acid | Excellent | 20% sodium hydroxide | Excellent |
| 20% citric acid | Excellent | 30% sodium hydroxide | Excellent |
| Lactic acid 10% | Excellent | Petrol | Excellent |
| Sodium hydroxide 10% | Excellent | Toluene | Excellent |
| Calcium hydroxide 50% | Excellent | Crude oil | Excellent |

Test conditions: temperature 25 $^{\circ}$ C and humidity 50% immersion in chemical solutions according to standard D 896-04

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health and safety

The adhesive should be stored in closed containers at a temperature of 25 degrees.

After using the material, close the lid of the remaining material tightly.

Before using the material on the surface, make sure that there is no dust, damp or moisture on the surface.

Before using the material, clean the surface from any grease and dirt.

Wear industrial gloves and a mask when using materials.





