

## Technical Data Sheet

# Epox-1161

## ( Super UW-Metal)

### Product Description

A two component, surface tolerant, paste grade system for repairing and rebuilding machinery and equipment. Based on silicon steel alloy blended with high molecular weight reactive polymer and oligomers. Ideal for use as a high strength structural bonding adhesive or for the creation of irregular load bearing shims.

### Application areas

When mixed and applied as detailed in the instruction for use, the system is ideally suited for application to damp and oil contaminated surfaces. In addition, the material can be applied underwater.

### Typical Properties

Property	part A	part B	mixed system
Appearance	paste	paste	paste
Colour	dark gray	light pink	gray
Density (g/cm <sup>3</sup> )	2.7	1.4	2.1
Pot life at 25°C, 100 g, min			15min

### Processing

Mix ratio Product	by weight
Part A resin	100
Part B hardener	33



## 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

Epox-1161 is tolerant of surface contamination and can be applied directly to wet and oily surfaces, however it is recommended that the best possible surface preparation is carried out. As a minimum, the substrate must always be firm and free from loose corroded material, mill scale, dust, and any other loose debris.

#### Recommended procedure

- a. blast clean the metal surface achieve the following minimum standard of cleanliness:  
iso 8501-1 sa 2 thorough blast cleaning
- b. uhp hydro blasting (2000-2500 bar) to remove previous coating and expose original profile.  
It is important to remove contaminants such as salt from above water surfaces.

### 2. Applying

- 2-1 Apply the Epox-1161 directly on to the prepared surface with applicator or spatula provided
- 2-2 Press down firmly to fill all cracks, remove entrapped air, and ensure maximum contact with the surface.
- 2-3 Over cracks, gaps and holes, stipple in reinforcement tape
- 2-4 Epox -1161 should not be applied at temperature below 41 F(5 C)

### 3. Completion of the molecular reaction

Allow Epox- 1161 to solidify as below subjecting it to the condition indicated.

temperature	Machining and/or light loading	Full mechanical or thermal loading
41 F/ 5 C	6 hours	4 day
50 F/ 10 C	4 hours	2 day
68 F/ 20 C	2 hours	1 day
86 F/ 30 C	1 hours	16 hours
104 F/ 40 C	30 min	12 hours

### 4. Application of a further layer of Epox- 1161

Whenever possible the Eepox -1161 should be applied in a single layer to achieve the required thickness. Epox- 1161 can be overcoated as soon as it is firm enough to do so.

When overcoating with suitable Epox products, the maximum overcoat time is 6 hours. After this time, the surface must be roughened by abrading or grit blasting to achieve a frosted appearance with minimum surface profile of 40 microns before overcoating.

## 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.



## Typical Physical Properties

Property	value	test method
Tensile shear		
Mild steel (clean & dry)	2320 psi (16 mpa)	ASTM D1002
Mild steel (transformer oil)	2100 psi (14.5 mpa)	ASTM D1002
Mild steel (wet)	1880 psi (13 mpa)	ASTM D1002
Mild steel (underwater)	1595 psi (11 mpa)	ASTM D1002
Stainless steel	1880 psi (13 mpa)	ASTM D1002
Aluminums	1305 psi (9 mpa)	ASTM D1002
Pull of adhesion	2465 psi (17 mpa)	ASTM D4541
Clean & dry	3625 psi (25 mpa)	ASTM D4541
Transformer oil	2610 psi (18 mpa)	ASTM D4541
Wet	1740 psi (12 mpa)	ASTM D4541
Underwater	1450 psi(10 mpa)	ASTM D4541
Compressive strength	11600 psi(80 mpa)	ASTM D695
Tensile st	4350 psi(30 mpa)	ASTM D638
Flexural strength	8410 psi(58 mpa)	ASTM D790
Hardness		
Shore D	83	ASTM D2240
Heat resistance	-40C-200C	ISO11357

## 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 ° C and humidity 50% immersion in chemical solutions according to standard D 896 – 04

## **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.

