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Technical Data Sheet

# Epox-1811

# (Abrasion Resistance)

## Product Description

a tow component system for repairing and protecting surfaces against abrasive attack. the product is based on high molecular weight polymers and oligomers incorporating abrasion resistance ceramic aggregates. this material may be applied from 1/4 inch to unlimited thickness on to horizontal or vertical surface

## Application areas

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

| | | |
|---|---|---|
| Pipe bend | chutes and hopers | deflector screens |
| Wear plates | centrifuges | mixing bowls |

## Typical Properties

| **Property** | **part A** | **part B** | **mixed system** |
|---|---|---|---|
| Appearance | paste | paste | paste |
| Colour | dark gray | light gray | dark gray |
| Density (g/cm3) | 2.7 | 1.7 | 2.1 |
| Pot life at 25°C, 100 g, min | | | 15min |

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## 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. **ensure an effective molecular weld**
   apply only to to clean, firm, dry and well roughened 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).use a flame to sweat out oil from deeply impregnated surfaces
   b. roughen surfaces by blast cleaning, deeply scoring or grinding.
2. **Applying**
   **For the best results**
   **Do not apply when**
   a. The temperature is below 41 f(5 c) or the relative humidity is above 90%
   b. rain, snow, fog or mist is present
   c. there is moisture on the metal surface or is likely to be deposited by subsequent condensation.
   d. The working environment is likely to be contaminated by oil/grease from adjacent equipment or smoke from kerosene heaters or tobacco smoking.

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**3. . Completion of the molecular reaction**

Allow Epox-1811 to solidify as below subjecting it to the condition indicated.

| temperature | Movement or use involving no loading or immersion | Machining and/or light loading | Full mechanical or thermal loading | Immersion in chemical |
|---|---|---|---|---|
| 41 F/ 5 C | 4 hours | 6 hours | 4 day | 5 day |
| 50 F/ 10 C | 3 hours | 4 hours | 2 day | 4 day |
| 59 F/ 15 C | 135 min | 3 hours | 1.5 day | 3 day |
| 68 F/ 20 C | 105 min | 2 hours | 1 day | 2 day |
| 77 F/ 25 C | 60 min | 90 min | 20 hours | 1.5 day |
| 86 F/ 30 C | 45 min | 60 min | 16 hours | 1day |

**Effecting the secondary molecular reaction**

The mechanical properties, heat resistance and chemical resistance and chemical resistance of Epox-1811 will be improved by post curing.

After 2-4 hours of applying Epox-1811 ,post cure the material using forced air heaters, heat lamps , etc. for a minimum of 4 hours at 140-212 F (60-100 C)

## 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 | 2400 psi (16.5 mpa) | ASTM D1002 |
| Abrasion cs-17 wheels | 7 mm loss per 1000 cycles | ASTM D4060 |
| Compressive strength | 11300 psi(78 mpa) | ASTM D695 |
| Flexural strength | 5400 psi(38 mpa) | ASTM D790 |
| Hardness | | |
| Shore D | 85 | ASTM D2240 |

## 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 | Crude oil | Excellent |
| Sodium hydroxide 10% | Excellent | Petrol | Excellent |
| Calcium hydroxide 50% | Excellent | Toluene | 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.