

# WET OR DRY UNDERWATER CURING PUTTY epigen 0503

**epigen**  
Performance Resins &  
Composite Systems

## TECHNICAL BULLETIN

Epigen 503 is a two component solventless epoxy which, when mixed, solidifies at ambient temperature to form a strong, tough material, possessing good mechanical properties and adhering strongly to suitably treated metal, timber and concrete surfaces.

It has been specifically designed to allow curing to take place unimpeded by the presence of water and Epigen 503 can therefore be used for underwater repairs and applications where dampness is present or the item being treated is subject to immersion prior to the Epigen 503 being cured.

Typical applications are the underwater patching of boat hulls, tanks, pipelines, and the repair or patching of tanks and concrete structures subject to immersion within a short time of application. Tidal zone repairs to steel and concrete wharf piles are also satisfactorily carried out using Epigen 503.

### TYPICAL APPLICATIONS

Repairs to swimming pools including rebonding tiles  
Fairing fibreglass and bonding fabrications  
Pile Repairs  
Corrosion resistant cladding on marine hulls  
Grouting slipway rails  
Concrete crack and void repair

### FEATURES

Resistant to a variety of chemicals  
Cures underwater - salt or fresh  
Non sag putty viscosity for versatility  
Free of all solvents - zero VOC  
Tough and durable  
Versatility in application allows concrete patching  
Suitable on steel surfaces  
Strongly adhesive for optimum adhesion



### PROFILE

Colour	Off White
Ratio by weight	1 kg Component "A" 0.5 kg Component "B"
Pot Life minutes @ 24°C	30
Mixed consistency @ 24°C	Paste
Specific gravity when mixed	1.4
Coverage /m <sup>2</sup> @ 10mm	14.0 kg

### TYPICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	82
Tensile strength ASTM D638, Mpa	22
Flexural strength ASTM D790, Mpa	32
Hardness, Shore D	>85
Elongation ASTM D638, %	1.3
Tensile Adhesion ASTM 4541, MPa	>12
Thermal conductivity ASTM C177, Kcal/m.hr° C	0.6
Coeff of Therm Exp ASTM C531, 10 <sup>-5</sup> /° C	1.9
Maximum exposure temperature, ° C	115
Heat deflection temperature ASTM D648, ° C	75
Thin Film Gel @ 12mm, Minutes	60
Thin Film Set @ 12mm, Minutes	120
Ultimate cure time, Hours	96

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

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### SURFACE PREPARATION

Methods for surface preparation prior to use include high pressure water blasting, or mechanical techniques such as abrasive blasting, grinding or scarifying.

Specialist advice is available from Peerless Industrial Systems to ensure the correct preparation procedure is employed for specific application.

### APPLICATION

Mixing of product should be carried out using spatula or by slow speed blender, and completed by adding to the component "A", component "B". Ensure the mixed 0503 is homogenous and the final colour shall be even without streaks.

When applying underwater, smear the 0503 across all surfaces to displace water.

### Clading:

Depending on the situation, the depth should nominally be 2mm as minimum to ensure sufficient coverage is in place and afford reasonable mechanical strength. There is no maximum thickness requirement. No primer is required to facilitate adhesion unless the surface is loose or friable. In cool environments, pre warm the product before use.

### Adhesive Applications:

Apply a thin coat of Epigen 0503 to both surfaces before bring the two together. Do not use where a flexible or resilient glue line is required. Recommended where a tough and strong, or heavy shock resistant material is required. Preheat the material before use to achieve best cure rate and strength when cold.

### Crack & Cervice Repairs:

Open up cracks using a grinder to allow proper identification of imperfection before applying directly into crevice or crack.



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### 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	2
Acetic Acid, Glacial	2	Ammonium Chloride	1
Hydrochloric Acid, 5 %	1	Beer	1
Hydrochloric Acid, 10 %	2	Dichloromethane	4
Hydrochloric Acid, conc	2	Diesel Fuel	1
Nitric Acid, 5 %	2	Isopropyl Alcohol	2
Nitric Acid, 10 %	2	Kerosene	1
Phosphoric Acid, 5 %	1	Petrol	2
Phosphoric Acid, 20 %	2	Salt Water	1
Sulfuric Acid, 5 %	3	Sewage	2
Sulfuric Acid, 20 %	3	Skydrol	2
Ammonium Hydroxide, 5 %	1	Sodium Cyanide	1
Ammonium Hydroxide, 20 %	1	Sodium Hypochlorite	2
Potassium Hydroxide, 5 %	1	Toluene	2
Potassium Hydroxide, 20 %	1	Trichloroethane	3
Sodium Hydroxide, 5 %	1	Wine	2
Sodium Hydroxide, 20 %	1	Xylene	2

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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

MANUFACTURED BY

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