

# PILE ENCAPSULATING RESIN

## epigen 0301MRD



### TECHNICAL BULLETIN

A solvent free advanced composite system developed to be used as an encapsulating resin around timber, steel and concrete piles to provide a barrier to continued borer and rot degradation, corrosion protection, and structural integrity.

The finish maybe supplied in grey or brown to blend in with existing structures. This product is designed to be used effectively in hot or cold climates, and in fresh and salt water environments.

In general purpose grouting applications where high flow is required, or in cold climate applications, the product may be employed in preference to the standard Epigen 301.

#### TYPICAL APPLICATIONS

Wharf and Pier Piles                      Slipway Foundations  
Road Bridges                                Building Foundations

#### FEATURES

- Broad spectrum chemical resistance
- Practical application thickness from 0.5mm
- Cures in 6 hours
- Free of all solvents - zero VOC
- Engineered for high mechanical strength
- High penetration properties
- Cures even when applied under cold adverse conditions

**Pile Encapsulating Resin 0301MRD** is supplied as a three part kit comprising component "A" resin, component "B" curative, and additive "C" which may contain pigment to achieve a colour match.

The entire kit is supplied in a pre weighed convenient size to make on site activities easier.



#### TYPICAL APPLICATIONS

Ratio by weight	9.1 kg Component "A"
	0.9 kg Component "B"
	0.5 kg Additive
Pot Life minutes @ 24°C	30
Mixed consistency @ 24°C	Flowable Liquid
Specific gravity when mixed	1.7

#### MECHANICAL CURED PROPERTIES

Compressive strength ASTM D695, Mpa	>100
Tensile strength ASTM D638, Mpa	>21
Flexural strength ASTM D638, Mpa	>21
Hardness, Shore D	90
Comp Modulus of Elasticity ASTM D695, Mpa	>1300
Elongation D638	3%
Coefficient of thermal expansion ASTM C531 (cm/cm/°C) x 10 <sup>-5</sup>	3.7
Dielectric constant ASTM D150 (150KHz)	3.0
Maximum exposure temperature, °C	130
Heat deflection temperature ASTM D648, °C	75
Cure time @ 6mm, Hours	6
Cure time to open service @ 6mm, Hours	12
Ultimate cure time @ 6mm, Hours	48

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

### SURFACE PREPARATION

Methods for substrate preparation preference using high pressure water blasting, or mechanical techniques such as grinding or scarifying.

Specialist advice is available from Peerless Industrial Systems to ensure a preparation procedure deemed suitable is employed for specific applications.

### INSTALLATION

Mixing of product should be carried out using slow speed mixers and completed by adding to the component "A", followed by component "B" and then the component "C". Once uniform in colour, mixed product should be poured directly into the pile area requiring treatment and allowed to flow to the lowest point. Any water within the void will be displaced upwards, possibly through the point of pouring. The poured product should be allowed to settle for 5 to 10 minutes before proceeding to pour more additional product to fill all voids.

When filling large cavities, **Epigen301MRD** may be bulk filled with equal parts by weight 16/30 mesh Silica Sand to reduce the amount of resin used. This is seen as an advantage particularly during high ambient temperature use, since the addition of aggregate reduces the exotherm and any resultant post cure contraction. The addition at the recommended rate will retain strength and pourability features. The kits have been designed for equal parts aggregate addition by simply topping up the mixed product container with silica sand.



### FORMWORK

Depending upon the situation, 0.5mm acrylic sheet may be used as formwork, wrapping it around the section to be corrected, strapping and using duct tape to secure any joins.

Mild steel and galvanised forms have also be used with equal success.

### CHEMICAL RESISTANCE

The following results represent relevance when in grouting applications of chemical facilities.

Tested at 21°C. Samples cured for 10 days at 25°C.

- 1 = Continuous or long term immersion
- 2 = Short term immersion
- 3 = Splash and spills
- 4 = Avoid contact

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

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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

**Peerless Industrial Systems Pty Ltd**

ABN 14 097 615 391

79 Robinson Ave, Belmont, WA 6104

PO Box 407, Cloverdale, WA 6985

Phone: (08) 9477 3788 Fax: (08) 9477 3766

Email: [service@peerlessindustrialsystems.com](mailto:service@peerlessindustrialsystems.com)

[www.peerlessindustrialsystems.com](http://www.peerlessindustrialsystems.com)

[www.epigen.com.au](http://www.epigen.com.au)