



# EpiMax 225

## Construction Grade Epoxy Binder

### Description

EpiMax 225 Construction Grade Epoxy Binder is a low viscosity, high strength epoxy system which adheres tenaciously to all forms of prepared concrete surfaces. It can be easily extended on site with suitable aggregates to provide different application characteristics and greater economy.

EpiMax 225 can be used for a great variety of building and construction applications requiring a high performance, easy to use epoxy binder. Mortars and concretes prepared using EpiMax 225 and suitable aggregates will demonstrate significantly greater tensile and compressive strengths than portland cement concrete and also show much higher chemical resistance.

The system as supplied is solventless and low viscosity. It offers fast hardening to provide good adhesion to dry and wet surfaces. EpiMax 225 utilises the latest advances in epoxy formulating chemistry.

EpiMax 225 has many uses including protective repair for concrete, structural non shrink grouting, marine pile repair and new to old concrete bonding.

EpiMax 225 FAST is available for fast cure and application at low temperatures.



### Typical properties - Standard version

- Solids content: 100%
- Set to touch: 4 Hours at 25°C
- Compressive strength: 95 MPa
- Tensile strength: 50 MPa
- Work time: 30 Minutes at 25°C
- Cure time: 24 Hours at 25°C
- Compressive modulus: 3.2 GPa
- Meets BCA CRF Fire standard
- Meets AS 4586 Slip Resistance standard
- Meets GBCA Low VOC standard
- Self-priming
- Convenient mix ratio (3:1 pbv)

### Typical properties - FAST version

- Solids content: 100%
- Set to touch: 2 Hours at 25°C
- Compressive strength: 95 MPa
- Tensile strength: 50 MPa
- Work time: 15 Minutes at 25°C
- Cure time: 12 Hours at 25°C
- Compressive modulus: 3.2 GPa
- Meets BCA CRF Fire standard
- Meets AS 4586 Slip Resistance standard
- Meets GBCA Low VOC standard
- Self-priming
- Convenient mix ratio (3:1 pbv)

### Typical properties - TROPICAL version

- Solids content: 100%
- Set to touch: 6 Hours at 25°C
- Compressive strength: 95 MPa
- Tensile strength: 50 MPa
- Work time: 45 Minutes at 25°C
- Cure time: 36 Hours at 25°C
- Compressive modulus: 3.2 GPa
- Meets BCA CRF Fire standard
- Meets AS 4586 Slip Resistance standard
- Meets GBCA Low VOC standard
- Self-priming
- Convenient mix ratio (3:1 pbv)

### Estimating data

Select appropriate aggregate mix ratios from the following table:

Flow Characteristics	EpiMax 225/Selected Aggregate Volume Ratio	EpiMax 225 litres/m <sup>3</sup>	Selected Aggregate litres/m <sup>3</sup>
Very fluid	1:2	500	1000
Flowable mortar	1:3	333	1000
Workable mortar	1:4	250	1000

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## Surface preparation

Concrete should be at least 28 days old and free of additives, curing agents, oils etc. Remove all loose, crumbly and drummy areas to obtain a sound surface. Ensure that surfaces are free of dust, oil and grease.

Prepare concrete by acid etching/neutralizing/washing, professional grinding or captive blast cleaning as applicable to expose firmly held aggregate and allow to dry. Surface profile should exceed CSP 3. Prepare steel surfaces in accordance with AS 1627-2002. Always confirm preparation adequacy.

## Priming

Prime prepared surfaces at an application rate of 6m<sup>2</sup>/litre using a short nap roller. Protect all newly primed surfaces and allow to harden fully, but the next stage should be applied within 24 hours of priming. If this time is exceeded, the critical foundation substrates must be re-primed.

## Structural bonding of new to old concrete

EpiMax 225 is ideally suitable for structurally bonding new to old concrete. These applications result in strengths significantly greater than the concrete mixes involved, and in tensile, shear or flexural tests separation at the bond line will not occur.

Apply mixed EpiMax 225 by roller to the cleaned old concrete surface at a rate of 5m<sup>2</sup>/litre. Immediately place the new concrete mix and finish normally. If the new concrete mix is not placed within 45 minutes, re apply. Composite concrete cylinder compression testing using EpiMax 225 will demonstrate strengths greater than 100% of the control cylinder.



## Structural concrete repair

EpiMax 225 can be used to repair many forms of structural concrete. Correctly applied, the completed repair will demonstrate higher strengths than the original structure.

Prime the prepared cleaned surfaces with freshly mixed EpiMax 225 by brush, roller or airless spray.

Prepare a trowellable mortar by mixing 1 volume freshly mixed EpiMax 225 and 3 volumes of suitable aggregate. Place this mortar over the freshly primed areas and trowel to a smooth finish. Minimise air entrapment. Since this mortar will exhibit excellent adhesion, always remove splash and spatter from adjacent surfaces before hardening occurs.

## Typical properties

EpiMax 225: Selected aggregate (1:3 pbv); 7 days at 25°C

- Tensile strength: 40 MPa
- Compressive strength: 70 MPa
- Flexural strength: >20 MPa
- Concrete bond strength: 2.7 MPa (Concrete fails)

## Typical properties

EpiMax 225: Selected aggregate (1:5 pbv); 7 days at 25°C

- Tensile strength: 40 MPa
- Compressive strength: 70 MPa
- Flexural strength: >20 MPa
- Concrete bond strength: 2.7 MPa (Concrete fails)

## Structural grouting of load bearing inserts in concrete

EpiMax 225 grouts offer significant advantages over cement-based products. Fast curing and excellent chemical resistance are important features in many applications. As well as these, high dynamic load performance and the option of setting grouted elements close together and close to edges are other benefits.

Grout inserts with a mix of 1 volume of mixed EpiMax 225 and 1.5 - 2 volumes of suitable aggregate. Generally it is recommended to select hole diameters 1.5 times insert diameter. Smaller inserts (10mm diameter and less) are best grouted with mixed EpiMax 225 unextended.



Ensure inserts are clean and free of oil, grease and dust etc and if necessary, lightly grit blasted. Holes should be clean of dust and debris. Wet holes should be free of standing water.

Pour mixed EpiMax 225, either extended or unextended into the holes and insert bolts or bars. Then allow to harden for at least 24 hours.

### **Splash zone repairs to concrete, timber and steel structures**

EpiMax 225 has excellent underwater adhesion to most structural members and extended grouts can displace water in formed up voids.

Surfaces should be ground to expose firmly held aggregate. Prepare an underwater grout mix by mixing 1 volume mixed EpiMax 225 and 1.5 volumes of suitable aggregate. Then pour into the formed up void to displace water.

Underwater repairs may show higher strengths due to better compaction if the grout mix is poured vertically through a 50 - 75mm diameter PVC conduit or hose.



### **Typical properties**

EpiMax 225: Selected aggregate (1:1.5pbv); 7 days at 25°C

- Compressive strength: 53 MPa
- Concrete bond strength
- Repaired pile, timber: >100% of new pile
- Flexural strength: >20 MPa
- 2.7 MPa (Concrete fails)
- Repaired pile, concrete: >100 % of new pile

### **Skid proofing concrete and timber decks**

EpiMax 225 will provide skid proof concrete and timber surfaces by using the "aggregate scatter" technique. Apply mixed EpiMax 225 to the prepared surfaces at a rate of 6m<sup>2</sup>/litre using a short nap roller.

Broadcast the area with an excess of suitable aggregate, protect and allow to harden overnight. Sweep off excess and apply a second coat of EpiMax 225 to seal the surface.

- Slip resistance: R10 - R13 (depending on application technique)



### **Packaging**

EpiMax 225 is available in 8, 20 and 800 litre packs (including Hardener, Compound - Aggregate is additional). It is pre-packaged in correct proportions for use.

EpiMax 225 FAST is available in 20 litre packs (including Hardener, Compound - Aggregate is additional). It is pre-packaged in correct proportions for use.

EpiMax 225 TROPICAL is available in 20 litre packs (including Hardener, Compound - Aggregate is additional). It is pre-packaged in correct proportions for use.

### **Safety precautions**

Read **Material Safety Data Sheet** before commencing any application.

Keep away from children. Avoid contact with skin and avoid breathing vapour.

Always provide adequate personal protection (gloves & goggles etc) during use.

Always provide adequate ventilation, especially In confined spaces. If poisoning occurs, call Doctor or Poisons Information Centre.

Phone 13 11 26. If swallowed, DO NOT induce vomiting. Give plenty of water or milk.

If skin contact occurs, quickly remove contaminated clothing and wash affected areas thoroughly with soap and water.

TDG Code, EpiMax 225: Hardener - UN 1760. Compound - Not Classified. Aggregate - Not Classified.



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