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 soventless and low viscosity. It offers fast hardening to provide good adhesion to dry and wet surfaces.

Proven uses include as a primer for concrete, as a high strength resin for epoxy mortar screeds, as an epoxy render for tank lining, as a protective repair for concrete, as a structural non-shrink grout, as a high strength repair for marine piles and in new-to-old concrete bonding applications.

EpiMax 225 is ideal for various applications in the water industry and has been tested and approved to AS4020:2018.

Typical Applications

- Epoxy render
- Structural bonding
- Marine structure repairs
- Epoxy mortar screeds
- Structural concrete repair
- Grouting dowel bars
- Primer for concrete
- Structural grouting
- Binder for epoxy coving mixes

Typical properties - Standard version

- Solids content: 100%
- Set to touch: 4 Hours at 25ºC
- Compressive strength: 95 MPa
- Tensile strength: 50 MPa
- Work time: 25 Minutes at 25ºC
- Cure time: 24 Hours at 25ºC
- Compressive modulus: 3.2 GPa
- Meets BCA CRF Fire standard
- Concrete bond strength: 2.7 MPa (Failure)
- Meets GBCA Low VOC standard
- Compressive Strength 24 hrs 55 MPa
- Convenient mix ratio (3:1 by volume)

Typical properties - FAST version

- Solids content: 100%
- Set to touch: 2 Hours at 25ºC
- Compressive strength: 95 MPa
- Tensile strength: 50 MPa
- Work time: 15 Minutes at 25ºC
- Cure time: 12 Hours at 25ºC
- Compressive modulus: 3.2 GPa
- Meets BCA CRF Fire standard
- Concrete bond strength: 2.7 MPa (Failure)
- Meets GBCA Low VOC standard
- Compressive Strength 24 hrs 55 MPa
- Convenient mix ratio (3:1 by volume)

Performance data @ 25ºC

EpiMax 225 : Selected Aggregate Volume Ratio	Compressive Strength MPa	EpiMax 225 : Selected Aggregate Volume Ratio	Compressive Strength MPa
Binder only	95	Flowable Mortar 1:3	60
Fluid Grout 1:1.5	80	Mortar 1:4	50
Medium Flow Grout 1:2	75	Dry Mortar 1:5	45

Estimating data

Select appropriate aggregate mix ratios from the following table:

Flow Characteristics	EpiMax 225/Selected Aggregate Volume Ratio	EpiMax 225 litres/m^3	Selected Aggregate litres/m^3
Very fluid	1:2	500	1000
Flowable mortar	1:3	333	1000
Workable mortar	1:4	250	1000
Dry mortar	1:5	200	1000

Note: EpiMax 225/Selected Aggregate Volume Ratio should not exceed 1:5 parts by volume without reference to EpiMax.

Surface preparation

Concrete should be sufficiently cured. Ensure it is free of all contaminants, additives, curing agents, oils, pre-existing coatings etc and is also alkaline in nature. Prepare as necessary by industry approved methods like abrasive blasting etc, as applicable, to expose firmly held aggregate to minimum CSP 2 Standard. Vacuum all dust and debris. Allow to dry if wet.

Prepare steel surfaces in accordance with AS 1627-2002.

Always confirm preparation adequacy.

Priming

Prime prepared surfaces at an application rate of 4 - 6m^2/litre.

Mixing

Using a slow speed (400 - 600 rpm) mechanical mixer, mix Part A (Compound) and Part B (Hardener) at the correct ratio 3:1 by volume for a minimum of 3 minutes.

Temperature and re-coat window considerations

	Minimum	Maximum	Notes
Pre-conditioning temperature	20ºC	25ºC	Pre-conditioning times will vary depending on the product starting temperature
Substrate temperature	15ºC	27.5ºC	Substrate temperature should be at least 3 Celsius degrees above the prevailing Dew Point
Application ambient temperature	15ºC	30ºC	Ambient temperature should be at least 3 Celsius degrees above the prevailing Dew Point
Re-coat window at 23ºC	6 hours	24 hours	Re-coat windows are dependent on environmental conditions and should be adjusted accordingly - refer to EpiMax

Epoxy mortar screed

EpiMax 225 is ideally suitable for use in conjunction with quartz for epoxy mortar screeds.

These mortar screeds can be used to create falls in a floor to facilitate waste to outlets and drains, also to re-profile negative fall areas.

This system provides fast installation and eliminates the requirement for the placement of concrete slabs, that require 28 day curing.

Structural epoxy render and 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 by mixing EpiMax 225 with a suitable aggregate. Place this epoxy 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.

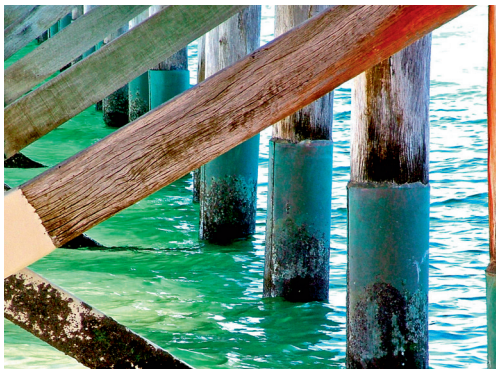
Structural grouting of load bearing inserts in concrete

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.

Professionally prepared and installed, the structural epoxy grout repair will provide excellent chloride ion resistance.

Flash rush prevention of prepared steel surfaces

Flash rusting is corrosion of the recently prepared steel surface caused when water molecules contact the surface. This rust can appear quickly and can interfere with the adhesion of subsequent coatings.

Prepare steel surfaces to AS1627.4 - Abrasive Blast Cleaning, which specifies abrasive blast cleaning to achieve a Class 2.5 "Near White Metal" blast cleanliness, and replicate visual standard Sa 2.5 in AS1627.9. Generate an angular surface profile of 30 to 60 micron.

Prime with freshly mixed EpiMax 225 immediately after abrasive blasting.

- Prepared steel lap shear bond strength: 10 MPa

Packaging

EpiMax 225 is available in 4, 20 and 800 litre packs (including Part A (Compound), Part B (Hardener) - Aggregate is additional). It is pre-packaged in correct proportions for use.

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

Aggregates

The EpiMax Inorganic Aggregate Range includes selected grades and combinations of quartz, alumino silicate, white fused alumina (aluminium oxide) and bauxite. These grades have been processed and selected to best suit various epoxy-based systems, polyurethane cements and polyaspartics.

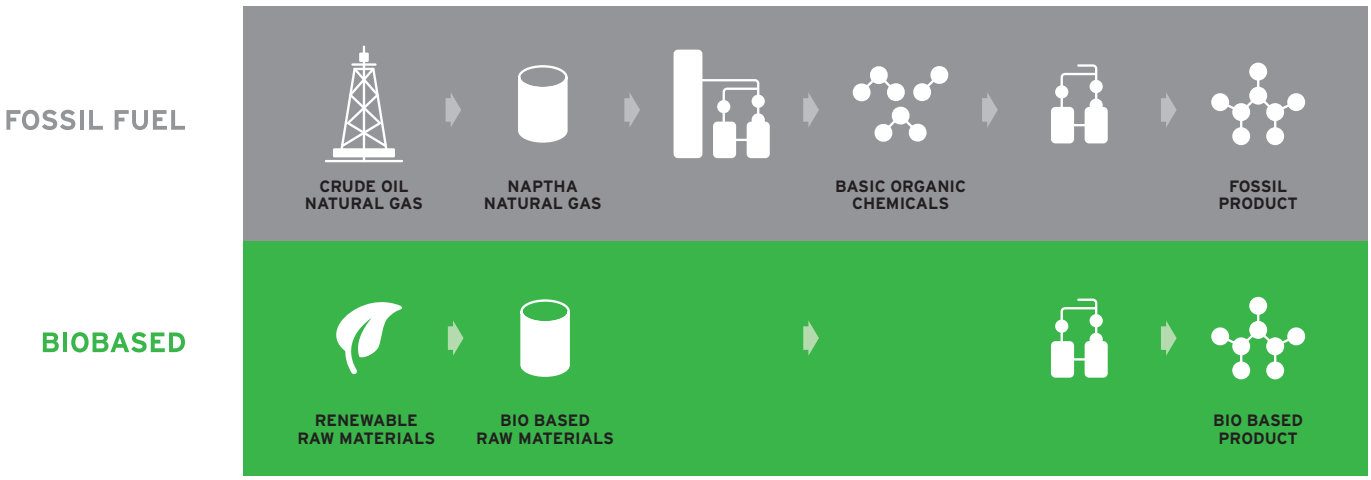
The quartz grades are often used to prepare epoxy renders and mortars.

The alumina and the bauxite grades are used for traction control in seamless flooring systems.

New generation bio-based formulation

Climate change is the biggest challenge of our time, and we want to contribute to a world that provides a viable future with enhanced quality of life. EpiMax can do so by utilising new chemistry and by making the best use of available resources.

EpiMax 225 is now formulated with the newest generation of bio-based epoxy resins to reduce the environmental impact by replacing a portion of the petrochemical derived chemistry with renewable, bio-based chemistry. This change reduces the carbon footprint associated with the use of the product.



EpiMax and our role in sustainability of the built environment

EpiMax 225 is often used to provide life extension to a great variety of concrete structures. In many cases, a thin section of EpiMax 225 epoxy render is protecting up to 200 mm depth of underlying concrete.

Given that the production of 1 MT of portland cement will release up to 1 MT of carbon dioxide into the atmosphere, extending the life of existing concrete structures will greatly reduce future carbon footprints in the built environment.

Safety precautions

Read **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 and 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: Part A (Compound) - Not Classified. Part B (Hardener) - UN 2735. Aggregate - Not Classified.

EpiMax

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