

Epoxy Mortar / Adhesive / Protective Coating

for Civil Engineering and Building Industry Use

ACE Epoxy Mortar is a tough abrasion resistant two component gap filling epoxy resin system optimised for use in civil engineering, construction and building applications. It mixes & spreads easily below 10⁰C and work can continue on recently rained on surfaces. It is a Silica Filled Thixotropic Epoxy Paste which is sag resistant. **ACE Epoxy Mortar** adheres tenaciously to most construction materials. It has tensile and compressive strengths superior to concrete, is highly impermeable to water and extremely resistant to attack by most common chemicals.

It is specially formulated for ease of mixing. Equal parts by volume of Part A (a black paste) and Part B (a white paste) are mixed together, until a uniform grey colour is obtained. The mixed **ACE Epoxy Mortar** is then applied to the work piece.

Typical Applications

- Over coating steel tendon ends in precast concrete members to forestall corrosion
- Levelling pads for machinery
- Patching holes in concrete, floors and stairs
- Repair mortar for broken concrete
- Repair wide cracks, especially vertical where sag resistance is required.
- Bond steel and timber to concrete
- Repair broken brick work
- Setting Anchor Bolts in Concrete
- Bonding precast concrete materials
- Bonding bricks, natural stones & ceramics
- Rendering mortar which has great adhesion
- Filling voids in spalled concrete with enhanced strength
- Repair Pipes, Culverts, Drains, Tanks

Modern Technology

- New generation SAFER hardeners **ACE Epoxy Mortar** uses hardeners with low allergenic potential. Unlike many existing formulations, these are much less likely to lead to sensitization or allergic reactions.
- Clever filler blends A carefully selected blend of fillers which makes mixing (particularly in cold weather) a great deal easier.
- Damp Surfaces Modern ingredients provide superior ability to adhere to damp concrete surfaces.

Special features

Ideal for protecting steel prestressed tendon ends where compliance with the following specifications is required:-

- NSW RTA Specification B110 Edition 3 Revision 6
- Tas DIER B12
- WA Main Roads Specification 824
- SA DPTI 2013 Part 424
- VicRoads Section 622
- Qld Transport and Main Roads An application for registration will be lodged

Note: **ACE Epoxy Mortar** is not regulated for transport under the Australian Dangerous Goods Code 7.

www.ace-epoxy.com.au

**Australian Construction Epoxies,
46 Chetwynd St., Loganholme, Qld 4129**

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Application Instructions

Limitations

At an air temperature above 35 °C the pot life may be too short . At an air temperature below 10C it may take an extended time to cure.

Preparation

General

To stick really well, the surface upon which the **ACE Epoxy Mortar** is to be applied must be clean, grease and oil free, dry or slightly damp, mechanically sound and free from contaminants. Pooled water should be removed prior to application.

Concrete

The surface must be clean and mechanically sound, free from foreign material including form release agents, curing membranes, paint, oil, grease, or laitance.

Metals

The surface should be clean and bright. This can be done with grit blasting, grinding or mechanically abrading with sand papers etc. If necessary, degrease the surface before abrading. Bonding should be undertaken without delay to avoid the formation of a surface layer of corrosion. (Refer to the note below regarding sandpaper.)

Wood

Coarse sand to fresh, bare timber. (Refer to the note below regarding sandpaper.)

Painted Surfaces

All paint must be removed together with any residual material from paint strippers etc.

Anchored or Grouted bolts.

Holes should be dry, and have loose material blown out of them. Bolts or deformed bar should be free of oil, grease, loose rust or scale.

Note: Some sandpapers incorporate a stearates (wax) to reduce clogging. These leave a residue which inhibits adhesion where epoxies are to be used. They are often white or grey in colour. These sand papers should be avoided.

Mixing

By Hand

Place approximately equal volumes of Part A and Part B of **ACE Epoxy Mortar** onto a clean, flat board. Be reasonably careful about equal volumes, significant differences will weaken the end product. If measuring by weight use 2 units of **ACE Epoxy Mortar** Part A for 1 unit of Part B. Mix together using a hand trowel or spatula until the material is a uniform grey colour. In cold weather, mixing will be easier if the material has been stored in a warm area before to use.

Power Mixing

Place equal volumes of **ACE Epoxy Mortar** Part A and Part B into an open top mixing drum and mix with a low speed mixer drill fitted with a suitable stirrer. If measuring by weight use 2 units of **ACE Epoxy Mortar** Part A for 1 of Part B. It is important to periodically scrape unmixed material from the sides and bottom of the drum and to then further mix the material. Mix until the material is a uniform grey colour. Minimise aeration by mixing at slow speed. In cold weather, mixing will be easier if the material has been stored in a warm area prior to use.

Application

Apply the mixed **ACE Epoxy Mortar** using a trowel, putty knife, shovel or gloved hand. Work it into the substrate to ensure intimate contact between the **ACE Epoxy Mortar** and the substrate.

When using the **ACE Epoxy Mortar** as an adhesive, apply to both sides of the joint and rub it to ensure there is intimate contact. Then press the two sides together. The **ACE Epoxy Mortar** layer should not be less than 2mm, and preferably not more than 20mm. Support will be required for thick applications on a vertical or overhead situation.

Broken brickwork can have the material applied thinly to one side of the break. Then locate the loose piece into position and arrange for it to be held firmly until cured.

Note. For inconspicuous repairs to brickwork & stone, consider using Boatcraft Pacific's Epox-E-Glue tinted to precisely match colours.

Clean Up**Tools and equipment**

Uncured **ACE Epoxy Mortar** can be removed by scraping and wiping with the assistance of a solvent such as acetone.

Hands and skin

Do not use solvents to clean the material off skin. Use a citrus based hand cleaner with pumice followed by soap and water to remove uncured material. Vinegar is also effective followed by Solvol and water.

Cured material

Normal solvents will not remove cured material. It may be removed mechanically, or if it is heated to 100 °C it will soften and can then be scraped off. An organic vapours respirator should be worn if the material is heated.

Estimating Data

One litre of the **ACE Epoxy Mortar** will be needed for each square metre for each millimetre of thickness of application.

Properties

Ratio	1:1 by volume. 2:1 By weight	Part A Resin to Part B hardener
Composition	VOC Free; Carbonate Free, Phenol free, Asbestos free	
Cured Compressive Strength	>90	MPa
Cured Tensile Strength	>50	MPa
Tensile modulus	2.7	GPa
Adhesion – Dry Concrete	Fractures concrete. §1	MPa ASTM D4541 & ISO4624
Adhesion – Green Concrete	Fractures concrete. §1§2	MPa ASTM D4541 & ISO4624
Adhesion – Damp Concrete	Fractures concrete. §1§3	MPa ASTM D4541 & ISO4624
Adhesion – Dry Steel	10MPa	MPa ASTM D4541 & ISO4624
Hardness	80 Shore D	
S.G. Cured Product	1	Kg/litre
Minimum Application Temperature §5	10	°C
Maximum Service Temperature	55	°C §4.
Time until tack free @ 20 °C	180	Minutes
Time for cure @ 20 °C	24	Hours
Pot Life @ 20 °C	30	Minutes
Shelf Life	2+	Years

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Values above are typical values and were obtained by both test and calculation. The values do not represent guaranteed specification values. If your application requires guaranteed values, please contact your sales representative or the factory.

Notes:-

- §1 When the adhesion test was conducted, the failure was wholly in the concrete substrate, therefore any figure would be a measure of the concrete tensile properties only.
- §2. Green means demould 12 hours after casting and left until surface wetness disappeared.
- §3. Damp means visibly damp but no free or pooled surface water.
- §4. Considerably higher maximum service temperatures can be tolerated if an elevated temperature cure is employed.
- §5. See note regarding temperatures under limitations above. Curing has been tested to occur at -4C but it does take time. Application at low temperatures wont damage the product, normal cure will proceed when it warms up.

Availability/Packaging

- 4 litre kit as a 2 litre tub of part A and a 2 litre tub of part B.
- 40 litre kit as a 20 litre drum of Part A and a 20 Litre drum of Part B.

Precautions/First Aid**Precautions**

- Wear protective gloves
- Wear eye protection

First Aid

- Ingestion **IF SWALLOWED:** Drink large quantity of water. Seek medical assistance.
- Eye Contact **IF IN EYES:** Rinse opened eye for several minutes under running water. Remove contact lenses if present and easy to do so. Seek medical assistance.
- Skin Contact **IF ON SKIN:** Remove with Citrus based hand cleaner with pumice followed by plenty of soap and water. If skin irritation occurs: Seek medical advice/attention. Take off contaminated clothing and wash before reuse.

Note

This product contains crystalline silica. No exposure to silica dust is likely with normal use of this product. Silica dust may be released by grinding or machining of the cured product. Use an approved dust respirator when grinding or machining the cured product.