



GP Epoxy DATA SHEET

EPOXY MORTAR FOR GROUTS, CONCRETE REPAIRS & FLOOR RESURFACING

DESCRIPTION

HYCHEM GP is a cost effective, 100% solids, low viscosity epoxy binder, designed to be blended with quartz aggregate to produce a resin mortar. Hychem GP is ideal for most applications requiring a fast curing, grouting, patching and filling mortar for concrete surfaces.

USE

HYCHEM GP is designed to be used wherever high performance structural properties are required and exposure to strong acids and solvents is not a critical factor. The product is generally used in conjunction with selected quartz aggregates to form either a trowelled or slurry type topping.

TYPICAL APPLICATIONS

- › Resurfacing of worn and damaged concrete slabs
- › Grouting holding down bolts into concrete
- › Re-leveling concrete floors to obtain falls to drains.
- › Patching holes and cavities in walls, drains & floors
- › Bonding new to old concrete toppings
- › Laying anti-slip toppings in factories, warehouses & service areas.
- › Underlay for heavy duty epoxy coatings

FEATURES & BENEFITS

- › Highly economical
- › High compressive strength
- › Good pot life
- › Versatile mix ratio with quartz fillers
- › Abrasion and impact resistant – hard wearing and durable.
- › Low odour
- › Solventless

PHYSICAL PROPERTIES

- › **Mix Ratio - volume:**
3:1 resin to hardener
- › **Specific gravity:**
1.13:1
- › **Pot life:**
30 mins
- › **Tack free time:**
6 - 8 hrs
- › **Cure Time:**
24 hrs
- › **Application temperature:**
5 to 30°C
- › **Service temperature:**
Up to 80°C
- › **Compressive strength By wt:**
80 MPa (2:1) quartz mortar
70 MPa (4:1) quartz mortar
60 MPa (6:1) quartz mortar
30 MPa (10:1) quartz mortar

CHEMICAL RESISTANCE

Chemical	GP	E300	E300 SLF	E300SLF-TL2
15% Acetic Acid	60	60	60	25
20% Caustic soda	15	15	15	15
20% Phosphoric acid	40	40	80	60
12% Hypochlorite	10	10	10	10
Solvent blend	300	100	55	20

The chemical resistance of a material can be determined by the weight gain of a sample immersed in the chemical. The greater the weight gain, the poorer the resistance of the material. The table above gives the relative resistance of HYCHEM GP Epoxy relative to other available HYCHEM epoxy binders. The table shows that HYCHEM GP has lower resistance to solvents but is similar in acids and alkalis.

APPLICATION GUIDELINES

Surface Preparation

Epoxy toppings can exert considerable shear forces on the underlying concrete substrate due to differential thermal movements. It is highly important that the concrete surface is adequately prepared. The cement paste layer and any surface coatings already in existence need to be removed. This is best carried out using captive shot blasting, grinding or scarifying.

The resultant surface should have a minimum tensile strength of 1.5 MPa and a minimum compressive strength of 25 MPa.

Mixing

- › In a clean container, mix HYCHEM GP liquid components (Resin & Hardener @ 3:1) using a helical mixer at a speed of 500 rpm until the mix becomes homogenous (1 – 2 minutes).
- › Add HYCHEM aggregates at a ratio of 1:1 to 3:1 by volume, gradually to the mix whilst still mixing.
- › Move the mixer around from side to side and top to bottom and scrape the sides of the mixing vessel to ensure thorough mixing.

APPLICATION

The correct application technique is dependent on the desired effect.

Grouting

HYCHEM SL quartz aggregate is added to the mixed binder at a mix ratio of 1:1 to 3:1 by volume dependant on the size of the aperture. Additional coarse quartz sand may be added for large gaps capable of absorbing the higher viscosity mix.

Concrete Resurfacing

Damaged exposed aggregate concrete can be resurfaced by mixing 1-2 kg of SL aggregate with 1 litre of GP binder and applying it across the surface with a flat trowel. This is often referred to as an epoxy scratch coat and is a common technique prior to applying an epoxy paint coat.

Concrete Re-leveling

When floors need to be re-leveled to provide correct fluid flow to drains a considerable depth of epoxy mortar often needs to be used. For this purpose a dry mix of aggregate ratio around 10:1 by wt containing coarse 2-3 mm pebbles is recommended. After application and cure, a seal coat of HYCHEM GP Epoxy needs to be applied prior to topping with a chemically resistant topping such as HYCHEM E300 Epoxy Mortar.

Anti-slip Topping

A fluid mix of resin/aggregate is spread over the surface and then broadcast with an appropriate anti-slip aggregate to produce the desired surface profile. After cure, excess dry aggregate is removed and the surface is sealed with HYCHEM GP containing a suitable pigment additive. When the topping has cured, the surface needs to be saw-cut and an epoxy joint sealant such as HYFLEX NS applied.

Clean Up

Xylene can be used for cleaning tools and equipment before the mixed compound begins to harden.

PACKAGING

Available in 4, 16, 80 and 800L kits.

SHELF LIFE

12 months from date of manufacture, stored under shelter at 25°C in original un-opened container.

COVERAGE

- › 1L of binder with 1L of quartz filler makes a total of 1.6 litres of mortar
- › 1L of binder with 3L of quartz aggregate makes a total of 3 litres of mortar
- › 1L of binder with 5L of quartz aggregate makes a total of 4L of mortar

ENVIRONMENTAL CONDITIONS

Warning

Epoxy products are sensitive to the prevailing temperature and humidity at the time of application.

- › High temperatures will shorten the pot life and application may become difficult due to insufficient time being available to lay the product.
- › Low temperatures and high humidity will result in the epoxy reacting with surface moisture to produce a white powdery finish. To avoid this, epoxy coatings and toppings must not be applied if surface temperatures are below the dew point while the material has not yet cured.
- › The white surface finish is only an aesthetic consideration and does not affect the performance of the material. Chemical spillage of acids and sanitizing agents may attack the pigments used in the coating and result in discolouration
- › Differing epoxy products have differing resistance to chemicals, always ensure that the correct product is chosen for the service environment to be encountered.

SAFETY PRECAUTIONS

Epoxy polymer products may cause allergic reactions through skin contact. Goggles and protective gloves and clothing should be worn at all times. Ensure that there is adequate ventilation and air flow and avoid breathing the vapour.

DISCLAIMER

Field Support

Field support, where provided, does not constitute supervisory responsibility. Suggestions made by Hychem either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not Hychem are responsible for carrying out procedures appropriate to a specific application.

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