

# HYCHEM GPZ

General purpose epoxy binder for concrete repairs & floor resurfacing

DATA SHEET



**HYCHEM**  
EPOXY SYSTEMS

HYCHEM GPZ Epoxy is a cost effective, low viscosity epoxy binder designed to be blended with quartz fillers

HYCHEM GPZ is designed to be used wherever high performance structural properties are required and exposure to strong acids and solvents is not a prime service requirement. The product is generally used in conjunction with selected quartz aggregates to form either a trowelled mortar or slurry type topping. It is the ideal binder for the quick repair of damaged concrete surfaces.

#### FEATURES and BENEFITS

- Excellent value for money
- High compressive strength
- Good pot life offers practical work time
- Versatile mix ratio with quartz fillers
- Low odour, will not taint food
- Can be used as a primer, binder & sealer
- Compatible with all other Hychem coatings and toppings

#### TYPICAL APPLICATIONS

- Resurfacing worn and damaged concrete slabs
- Re-levelling concrete floors to obtain falls to drains
- Coving
- Patching holes and cavities in walls, drains & floors
- Bonding new to old concrete toppings
- Laying anti-slip toppings in factories, warehouses & service areas
- As an underlay for heavy duty epoxy coatings
- Priming concrete surfaces
- As an expansion joint repair mortar

#### CHEMICAL RESISTANCE

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 below gives the relative resistance of HYCHEM GPZ relative to other available epoxy binders. A value of 100 is equivalent to an absorption of 3%.

CHEMICAL	GPZ	E300	E300 SL	E300SLF	TL2 Flash
15% Acetic acid	60	60	60	25	25
20% Caustic soda	15	0	0	0	0
20% Phosphoric acid	40	40	40	60	60
12% Hypochlorite	10	15	15	15	15
Xylene/butanol blend	300	200	125	20	20

#### PHYSICAL PROPERTIES @ 23 °C

Mix Ratio- volume	2:1 (resin to hardener)
Pot life	20 minutes
Tack free time	8 hours
Recoat	8 - 24 hours
Application temperature	+5° C to +30° C
Viscosity	600-1000 cps
Service temperature	Up to 60° C
Compressive strength	70 MPa (2:1) quartz mortar
Applied thickness	0.1mm min with no max thickness

## SURFACE PREPARATION

- The concrete substrate must be firm, clean and dry with a compressive strength of 25 MPa and a minimum surface tensile strength of 1.5 MPa.
- New concrete must be allowed to cure for a minimum of 28 days.
- Remove all surface laitance, contaminants, existing coatings, curing compounds and any weak and loose materials.
- Prepare the concrete surface by Abrasive Grit Blasting, Shot Blasting, Scarifying, Ultra High Pressure Water Jetting or Scabbling to provide the appropriate surface profile for optimum mechanical keying.

The extent of surface preparation required is dependant upon but not limited to the thickness of the coating system to be applied. It is highly recommended surface preparation is carried out in accordance with industry standards and publications such as NACE 02203 item No. 22420 or ICRI Technical Guideline No. 03732.

## MIXING

- In a clean container, mix the HYCHEM GPZ liquid components (Resin & Hardener @ 2:1) together 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 3:1 (Filler : GPZ) to 4:1 by volume to the mix gradually whilst continuing to mix.
- 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

**CONCRETE RE-LEVELLING:** When floors need to be re-levelled to provide adequate fluid flow to drains a considerable depth of epoxy mortar needs to be used. For this purpose a dry mix of aggregate at a ratio of approximately 8-10 parts quartz to 1 part resin/hardener combination containing a coarse 2-3mm pebble is recommended. Prime the surface first before installation of the sub-fill mix and allow to cure.

If necessary falls to drains must first be prepared using GPZ and a coarse quartz sand mixture.

The epoxy sand mortar is poured onto the floor and spread out at approximately 5–6mm thickness, using a spreader gauge or gauged application box. The surface is then consolidated by hand trowelling and is allowed to cure. A coarser antislip may be incorporated by casting on to the wet trowelled surface. The cured topping is then surface sealed using a suitable epoxy coating of choice.

## JOINTING

Construction joints in the substrate must be reflected through the epoxy topping. Once the topping has cured, identify and saw cut the joints before filling with an epoxy joint sealant such as Hyflex NS.

In reference to anti-slip aggregates, be aware that quartz will crush under heavy traffic and consideration should always be given to using either bauxite or aluminium oxide aggregates as substitutes. Both these products will increase the life span, durability and performance of your ant-slip surface finish.

**CLEAN UP:** Xylene can be used for cleaning tools and equipment before the mixed compound begins to hardened.

## COVERAGE:

- 1 litre of binder with 1 litre of quartz makes a total of 1.6 litres of mortar
- 1 litre of binder with 3 litres of quartz makes a total of 3 litres of mortar
- 1 litre of binder with 5 litres of quartz makes a total of 4 litres of mortar

**PACKAGING:** Available in 60 litre & 600 litre kits.

**SHELF LIFE:** 12 months from date of manufacture, stored under shelter in a cool dry place at 25° C in original un-opened container.

## WARNING - ENVIRONMENTAL CONDITIONS

Temperature and the surrounding atmospheric conditions will play a part in the curing process of all epoxy products. Under conditions of low temperatures and high humidity the final cured surface finish can be adversely affected potentially resulting in poor gloss retention, discolouration over time, poor overcoatability and intercoat adhesion. Quite often these conditions will result in the formation of a white film over the surface often evident after contact with water. This chemical reaction with the atmosphere is commonly referred to as "amine bloom" or "amine blush".

If this occurs then the existing coating will need to be abraded to completely remove the affected surface to ensure the adhesion of subsequent applications. In some cases partial or complete re-priming may be necessary.

To minimise an unsatisfactory cure the following indicative application conditions should be observed with respect to temperature and humidity levels.

21° C and less than 85% humidity

10° C and less than 75% humidity

Attention also needs to be paid to the substrate temperature which should be at least 3-5° C above the dew point during the curing phase.

Industry standards recommend the accurate recording of environmental conditions such as substrate & air temperatures, humidity levels and dew point readings during both the application & curing processes.

If in doubt consult the Hychem technical department for advice.

### 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.

### Customer Responsibility

The technical information and application advice given in this publication is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the product suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.