HYCHEM GPT

General purpose epoxy binder for concrete repairs & floor resurfacing

DATA SHEET

HYCHEM EPOXY SYSTEMS

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

HYCHEM GPT 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

- Grouting holding down bolts into concrete
- Resurfacing worn and damaged concrete slabs
- Re-levelling 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
- As an underlay for heavy duty epoxy coatings
- Priming concrete surfaces
- As an expansion joint repair mortar

PHYSICAL PROPERTIES @ 23 °C

Mix Ratio- volume	2:1 (resin to hardener)
Specific gravity	1.13 kg per litre
Pot life	20 minutes
Tack free time	8 hours
Recoat	8 - 24 hours
Application temperature	+5° C to +30° C
Viscosity	400–500 cps
Service temperature	Up to 60° C
Compressive strength	70 MPa (2:1) quartz mortar
Applied thickness	0.1mm min with no max thickness

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 GPT relative to other available epoxy binders. A value of 100 is equivalent to an absorption of 3%.

CHEMICAL	GPT	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

SURFACE PREPARATION

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

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

Prior washing with a caustic soda solution may be required for surfaces contaminated with animal or vegetable fats. Solvent washes (degreasers) may need to be used to remove petroleum oils and stains.

MIXING

- In a clean container, mix the HYCHEM GPT 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 1:1 (Filler : GPT) to 3:1 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

The correct application technique is dependent on the intended use of the product.

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

CONCRETE RESURFACING: Damaged concrete with or without exposed aggregate can be resurfaced by mixing 1-2 Kg of SL aggregate with 1 litre of GPT binder and applying it across the surface with a flat trowel. This application is often referred to as an epoxy "scratch coat" and is a common technique used prior to the application of an epoxy paint coat.

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. Once cured, a heavy seal coat of HYCHEM GPT needs to be applied prior to again topping this time with a chemically resistant system such as the 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 GPT containing a suitable pigment additive. When the topping has cured, locate all expansion joints, saw cut as necessary and fill with a suitable 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.

NOTE: CUSTOMER RESPONSIBILITY

The technical information and application advice here given 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 products 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.

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.

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 after contact with water. This chemical reaction with the atmosphere is commonly referred to as "amine bloom" or "amine blush".

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.

Chemical spillage of acids and sanitizing agents may attack the pigments used in the coating and result in discolouration.

Different epoxy products vary in their resistance to chemicals. Always ensure that the correct product is chosen for the service environment to be encountered. If in doubt contact your Hychem representative or the Hychem technical department for advice.

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