

HYCHEM GP

General Purpose Epoxy Binder

Product Description

HYCHEM GP is a 100% solids epoxy binding resin typically used for priming and creating epoxy mortars. HYCHEM GP is designed to be used wherever high-performance structural properties are required. HYCHEM GP is a sub-fill resin and in most instances requires a topcoat or an overlay to form a complete system. HYCHEM products should only be used by experienced professionals.

Typical Applications

- Aviation hangars and maintenance facilities
- Motor workshops
- Public buildings e.g. schools and hospitals
- Prisons
- Plant rooms
- Factories
- Warehouses
- Garages
- Food and beverage processing areas
- Retail areas
- Pharmaceutical and laboratories

Features & Benefits

- Can be used as a binder e.g. epoxy mortar screed, coving, sub-fill etc.
- Can be used as a primer
- High compressive strength
- Jet fuel resistant
- High resistance to aviation hydraulic fluids e.g. Skydrol, HyJet etc.
- High resistance to battery acid and caustic compounds
- High resistance to cleaners, detergents, degreasers, organic solvents, lubricating and de-icing fluids etc.

Approvals / Certifications

- APAS-S0209/1L V3 (Class I)
- Green Star Interiors V1.3-12.1.B — Green Star & As Built
- Green Star Interiors V1.3-13.1.B — Green Building Council of Australia
- HACCP Certified
- CRF Compliant

Technical Data

Composition	Epoxy (2-part solvent-free)
Colour	Clear
Solids Content	100 %
Gloss Level	Gloss
VOC Content	14 g/L
Service Temperature	Up to 65 °C
Chemical Resistance	Wide ranging including chemical resistance to jet fuels, aviation hydraulic fluids, solvents, acids, caustics, fats and oils. Consult HYCHEM for resistance to specific chemical concentrations.

Physical Properties

Hardness Shore D – 7 Days	80
Compressive Strength	70 MPa (2:1) quartz mortar
Scratch Resistance	Excellent

APPLICATION GUIDELINES

Surface Preparation

Prior to the application of HYCHEM GP, the substrate must be thoroughly prepared.

- The substrate must be clean and firm with a minimum compressive strength of 25MPa and a minimum surface tensile strength of 1.5MPa.
- Moisture content of the substrate must be below 5%.
- New concrete must be allowed to cure for minimum 28 days.

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- In most instances, mechanical preparation is required to profile the surface e.g. CSP2.
- All dust, loose and friable material must be completely removed from all surfaces before application, preferably by vacuum.

Pre-conditioning product

It is important to note that even when the application environment is warm, products which have been stored in cold or cooler conditions should be pre-conditioned, ideally to 20-25°C, to ease mixing and application and help avoid other potential issues such as amine bloom or blushing. Applying a cold product in a warm environment is not recommended.

Mixing (priming)

Mix HYCHEM GP resin & hardener at 3:1 by volume together using a helical mixer at a speed of 500 rpm for 3 minutes. As a primer HYCHEM GP can be diluted up to 15% with methylated spirits, xylene or MEK. Required dilution will depend on substrate porosity and environmental conditions. Only mix as much HYCHEM GP as can be applied within approx. 15 minutes (temperature dependant) to avoid exothermic reaction in the pot.

Application (priming)

Pour mixed resin and hardener onto the floor and apply by roller at 4-7m²/L. If an overlay or product containing water is to be applied over HYCHEM GP, ensure sufficient film build (re-apply if the substrate is particularly porous) and broadcast to refusal with quartz or silica sand (beach finish).

Mixing (self-smoothing)

Mix HYCHEM GP resin & hardener at 3:1 by volume using a helical mixer at 500 rpm for 3 minutes. Add silica flour e.g. Silica 60G, Silica 200G as required for good flow and ease of application e.g. 1kg silica flour to 1L HYCHEM GP. Only mix as much as can be applied within approx. 15 minutes.

Application (self-smoothing)

Pour mixed resin and hardener onto the floor and apply by notched trowel or pin-rake. NB. porous substrates should be sufficiently primed first to avoid outgassing from the substrate.

Mixing (mortar)

Mix HYCHEM GP resin & hardener at 3:1 by volume using a helical mixer at 500 rpm for 3 minutes. As a mortar HYCHEM GP can be blended with aggregate. Aggregate size and ratio depend on the installation requirement e.g. scratch coat, screed, coving, grout, sub-fill.

Application (mortar)

Install according to the requirement e.g. trowel, coving trowel, hand trowel, pour etc. NB. a prime coat of HYCHEM GP should be applied first. Wet on wet application is best.

Application Information

Mix Ratio (Part A to Part B)	3 : 1 by volume
Application Temperature	8 °C to 35 °C
Relative Air Humidity	< 75 % RH
Pot Life / Working Time @ 23°C	Approx. 15 minutes (less in large volume)
Tack Free Time @ 23°C	4 – 5 hours
Recoat Window (minimum - maximum)	5 - 24 hours
Packaging — 4L kit	3L A + 1L B
Packaging — 16L kit	12L A + 4L B
Packaging — 80L kit	60L A + 20L B
Packaging — 800L kit	600L A + 200L B
Consumption (roller) — low porosity	5 – 7 sqm/L
Consumption (roller) — porous	2 – 3 sqm/L
Consumption (trowel)	1L per mm (allow volume adjustment for filler/aggregate)
Cure Time @ 23°C – Pedestrian	24 hours
Cure Time @ 23°C – Mechanical	48 hours
Cure Time @ 23°C – Full Chemical	7 days

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Environmental Conditions

Temperature and the surrounding atmospheric conditions will play a part in the curing process of all resin products. Under conditions of low temperatures and high humidity the final cured surface finish can be adversely affected, potentially resulting in poor gloss retention, discoloration over time, poor overcoat ability and inter-coat adhesion. Quite often these conditions will result in the formation of a white film over the surface, often evident after contact with water. If this occurs, 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. 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 and air temperatures, humidity levels and dew point readings during both the application and curing processes. Full material warranties cannot be provided unless all the relevant data has been recorded accurately. If in doubt consult the HYCHEM technical department for advice.

Safety Precautions

Wear appropriate personal protection equipment. Gloves, eye protection, mask and overalls should be used during mixing and application.

Shelf Life

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

Storage Conditions

The packaging must be stored properly in original, unopened and undamaged sealed packaging, in dry conditions at temperatures between 5°C and 30°C.

Chemical Resistance

HYCHEM GP is resistant to jet fuel, aviation hydraulic system fluids, battery acids and caustic compounds, cleaners, detergents, degreasers, organic solvents, and lubricating and de-icing fluids. Different epoxy products vary in their resistance to chemicals. Always ensure that the correct product is chosen for the service environment. If in doubt contact your HYCHEM representative or the HYCHEM technical department for advice.

Colour

HYCHEM GP is supplied clear. As with most epoxy finishes, surface yellowing may occur on exposure to UV light from the sun or an artificial source. Any such discolouration has no effect on the performance of the product.

Important Considerations

- This product may only be used by experienced professionals.
- Freshly applied product must be protected from damp, condensation and water during the curing process.
- Ensure adequate ventilation during application and drying to avoid impaired reaction.
- Beware of condensation — the substrate and uncured floor must be at least 3°C above the dew point. If exposure to moisture occurs, the surface must be fully abraded to ensure no risk of amine bloom and subsequent delamination of topcoats.
- Coatings and overlays containing water must not be applied directly to the resin unless a sufficiently porous mortar has been installed or the surface has been fully broadcast with dry aggregate e.g. quartz or silica sand.
- Ensure consumption of material is uniform to achieve proper appearance, texture and consistent performance.
- Ensure the material is mixed and stirred properly. Incorrect mixing can lead to performance issues.
- If heating is required do not use gas, oil, paraffin or other fossil-fuel heaters. Use only electric-powered warm-air blower systems.
- The incorrect assessment and treatment of cracks may lead to reduced service life and reflective cracking.
- For consistent colour, ensure material and pigments from the same batch are used for the entire floor/space.
- It is recommended to complete job sheets recording batch numbers, application method, dilution, material used, and environmental conditions during application and curing.
- At low temperatures and low humidities (< 40% relative humidity), curing and recoat times will be affected.

Warranties and Disclaimers

HYCHEM warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper use and application of the product by the applicator. HYCHEM has no role in the application of the finished polymer other than to manufacture and supply its components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of the application tools, including trowelling, spray equipment etc. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by HYCHEM.

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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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.

Legal Notes

The information, and in particular the recommendations relating to the application and end-use of HYCHEM products, are given in good faith based on HYCHEM's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with HYCHEM's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. HYCHEM reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.