

HYCHEM TL5

High Build Epoxy Coating

DATA SHEET



HYCHEM
EPOXY SYSTEMS

HYCHEM TL5 is a chemically resistant high build epoxy coating designed for use in environments where exposure to alkali and dilute mineral acids is required. HYCHEM TL5 is designed to protect water assets which are subject to sulphuric acid attack caused by microbial degradation of sulphur containing amino acids in sewage. The product is designed for application at a minimum of 1mm and a maximum of 7 mm using a wet on wet spray technique, but can also be trowelled where spray application is unsuitable.

USE

HYCHEM TL5 is specifically designed for use in:

1. The waste water industry: Pipes, manholes, pump stations, drop structures, detention tanks and treatment plants.
2. The mining industry: Lining of walls in ammonium nitrate storage warehouses.
3. The food industry: Lining of bunds, pits, drains and effluent channels.
4. The petroleum industry: Corrosion protection of both concrete and steel assets.

The product meets Australian Standard AS 4020:2005 TESTING OF PRODUCTS FOR USE IN CONTACT WITH DRINKING WATER and can thus be used in pipelines and storage vessels for potable water.

TL5 is also compliant with the requirements of Sydney Water Standard Specification 204.

FEATURES AND BENEFITS

- Can be applied by brush, roller, trowel and airless spray
- Fast cure, early return to service
- High acid resistance
- High caustic resistance
- High solvent resistance
- High fat resistance
- High hydrocarbon resistance
- Good intercoat adhesion
- Bonds to damp concrete
- High impact strength

CHEMICAL RESISTANCE

HYCHEM TL5 is formulated to have good resistance to dilute sulphuric acid. Immersion in the chemical results in a minimal absorption of 1% after 3 months exposure. (EX = Excellent, VG = Very good, G = Good, P = Poor)

ORGANIC ACIDS		MINERAL ACIDS		CAUSTIC MATERIALS		OXIDIZING MATERIALS	
Acetic acid 10%	G	Hydrochloric acid 20%	EX	Sodium hydroxide 20%	EX	Sodium hypochlorite 12%	G
Lactic acid 10%	G	Sulphuric acid 20%	EX	Ammonium hydroxide 20%	VG	Hydrogen peroxide 10%	G
Citric acid 15%	VG	Nitric acid 20%	G				
		Phosphoric acid 20%	G				

SALTS		HYDROCARBONS		OXYGENATED AND CHLORINATED SOLVENTS	
Ammonium nitrate	EX	Unleaded petrol	EX	Acetone	Limited to spillage
Ammonium sulphate	EX	Kerosine	EX	Methyl ethyl ketone	Limited to spillage
Ammonium phosphate	EX	Turpentine	EX	Methylene chloride	P
Sodium chloride	EX	White spirits	EX	Carbon tetrachloride	Limited to spillage
Ferric chloride	EX	Toluene	G		
		Xylene	EX		

LIMITATIONS

HYCHEM TL5 is not suitable for use with concentrated sulphuric (98%), 30% plus nitric acid, 20% plus acetic acid and 40% plus phosphoric acid. For exposure to these materials, contact the HYCHEM Technical Department.

TYPICAL PROPERTIES

Appearance	Resin: White paste, Hardener: Black Paste, Mixed: Grey Paste
Mix ratio	2 parts resin to 1 part hardener by volume
Specific gravity	Resin 1.25, Hardener 1.0, mixed 1.2
Working time @ 20°C	20 minutes
Gel time @ 20°C	30 mins
Tack free time	5 hours
Cure schedule @20°C	
4 hour cure	40 Shore D
8 hour cure	60 Shore D
24 hour cure	75 Shore D
7 day cure	75 Shore D
Cured performance	
Compressive strength	65 MPa
Tensile strength	25 MPa
Bond strength	3.8 MPa (concrete failure)
Impact strength	1.47 joules
Intercoat adhesion@24 hours	8 MPa substrate failure

APPLICATION GUIDELINES

Surface preparation

All organic matter, weak surfaces and poorly consolidated material must be removed. This is ideally carried out by water blasting with equipment delivering 4,000 PSI for new concrete and up to 10,000 PSI for badly deteriorated surfaces.

Cleaned, badly deteriorated surfaces are often ready for coating, providing a natural undulating profile. Cleaned, new concrete surfaces tend to produce a plethora of blow holes which when coated give rise to coating blisters.

Correct treatment of this problem involves a number of issues.

Firstly, coating application must take place when substrate temperatures are falling and must not occur under direct sunlight.

Secondly, visible blowholes can be sealed with a blend of HYCHEM TL5 and quartz aggregate. This can be applied as a surface screed or merely used to plug individual blow holes. Application of the subsequent HYCHEM TL5 should be after the screed has surface hardened and within a total period of 24 hours.

Thirdly, a coat of HYCHEM E500P primer can be used to seal the entire surface should the problem persist. Application in the late afternoon or at night can also be considered.

Coating application

HYCHEM TL5 must be applied at surface temperatures in excess of 5°C and below 30°C. Air humidity must be below 85% to prevent possible surface whitening due to water condensation which can affect intercoat adhesion when using multiple coats.

Due to the rapid cure and resultant short potlife, it is recommended that the material is applied using a plural component airless spray with static mixing head. Consult your spray unit supplier for detailed specifications.

Applying HYCHEM TL5 to small surfaces such as encountered in manholes is best carried out using a trowel. The application of a thin first coat, using a resin mortar mix is recommended. This reduces shear adhesive stresses and blow holes.

The surface finish can be improved by rolling with a slightly damp short nap mohair roller.

Coverage and spread rate

With correct choice of equipment, the coating can be applied at 65 sqm/hour at a coating depth of 3mm, using a volume output of 200 litres/hour.

Inspection

Coating deficiencies should be quality controlled with a Holiday Tester and deficient areas cut out and resealed with a trowelled application of HYCHEM TL5.

Adhesion to be tested periodically after cure, using a suitable tensiometer such as an Elcometer.

As it is possible for the mixer to lose the correct mixing ratio, the coating should be periodically tested for hardness using a Shore D Hardness meter as well as a visual colour inspection.

HEALTH AND SAFETY INFORMATION

Part A: Irritating to eyes and skin.

Part B: Harmful by inhalation in contact with skin and if swallowed. Causes severe burns. Risk of serious damage to eyes. May cause SENSITISATION by skin contact. Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment. Vapours may cause drowsiness and dizziness.

If this product comes in contact with the eyes, immediately hold eyelids apart and flush the eye continuously with running water. If skin or hair contact occurs immediately wash thoroughly with soap and water. In case of accident or if you feel unwell IMMEDIATELY contact doctor or Poisons Information Centre (show label if possible).

CLEAN UP

Clean equipment with epoxy diluting solvents such as Xylene. Hard, cured material will need to be mechanically removed. Use soap and water to wash hands.

PACKAGING

HYCHEM TL5 is available in 60 litre and 600 litre packs.

SAFETY INFORMATION

Epoxy resin products are skin sensitizing and can have a caustic reaction. Wear protective gloves, clothing and protective eyewear when using. Wash hands before eating and avoid breathing vapours.

Disclaimer

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.



HYCHEM
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Head Office
Unit 1, 30 Bluett Drive, Smeaton Grange, NSW 2567
T 02 4646 1660 F 02 4647 3700 E admin@hychem.com.au W www.hychem.com.au