Hychem TL5 EPL

EXTENDED POT LIFE HIGH-BUILD COATING

HYCHEM
Infrastructure

Product Description

HYCHEM TL5 EPL is a chemically resistant high-build epoxy coating designed for use in environments where exposure to water, salt solutions, alkali and dilute mineral acids is required. The product is designed for applications of up to 6mm+ using wet on wet spray technique, but can also be troweled in small areas where spray application is unsuitable.

Typical Applications

HYCHEM TL5 EPL is designed for use in:

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

Features

- Designed as a high build coating via a plural spray system
- Can be applied by brush, roller or trowel to small areas
- Long pot life, good application times
- High acid resistance
- High caustic resistance
- High fat resistance
- Good hydrocarbon resistance
- Good intercoat adhesion
- Bonds to damp concrete
- High impact strength

Technical Properties

Appearance	Resin: White paste Hardener: black paste Mixed: grey paste	**Cure Schedule @ 20ºC**		
Mix ratio	2 parts Resin to 1 part Hardener by volume	6 hour cure	30	Shore D
Specific gravity	Resin: 1.25 Hardener: 1.05 Mixed: 1.2	8 hour cure	60	Shore D
Working time @ 20ºC	40 minutes	24 hour cure	75	Shore D
Gel time @ 20ºC	60 minutes	7 day cure	80	Shore D
Tack free time	8 hours	**Cured Performance**		
		Compressive strength	70MPa	
		Tensile Strength	20 MPa	
		Bond strength	3.8 Mpa (Concrete failure)	
		Intercoat adhesion @24 hours	8 MPa (Substrate failure)	

Limitations: HYCHEM TL5 EPL is not suitable for use with concentrated sulphuric (98%), 30% plus nitric acid, 10% plus acetic acid and 20% plus phosphoric acid. For exposure to these materials, contact the HYCHEM technical department.

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Application Guidelines

Surface Preparation

Prior to the application of TL5 EPL, the substrate must be thoroughly prepared.

- The concrete substrate must be firm, clean and dry with a minimum 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 or loose materials.

All organic matter, weak surfaces and poorly consolidated material must be removed. This is ideally carried out by water blasting with equipment delivering a minimum of 4,000 psi for new concrete.

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, concrete porosity needs to be sealed with a coat of HYCHEM E500P primer or Hychem E300.

Thirdly, visible blowholes can be sealed with a thixotropic paste such as HYCHEM E500T. This can be applied as a surface screed or merely used to plug individual blow holes.

Application of the subsequent HYCHEM TL5 EPL should be after the screed has surface hardened and within a total period of 24 hours. In most existing concrete structures after adequate preparation, TL5 EPL does not always require the use of a primer.

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 always be pre-conditioned ideally to 20–25°C to ease mixing, application and help avoid other potential issues such as amine bloom or blushing. Applying a cold product in a warm environment is not recommended.

Coating Application

Due to the rapid cure and resultant short pot life, 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 EPL to small surfaces areas, this can be carried out by a trowel.

Coverage

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.

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Chemical Resistance

HYCHEM TL5 EPL is formulated to have good resistance to dilute sulphuric acid. Immersion in the chemical results in a minimal absorption of 0.5% after 6 months exposure.

Organic acids		**Hydrocarbons**	
Acetic acid 10%	Good	Unleaded petrol	Good
Lactic acid 10%	Good	Kerosine Good	Good
Citric acid 15%	Very good	Turpentine Good	Good
Mineral acids		Toluene Fair	Fair
Hydrochloric acid 20%	Excellent	Xylene Good	Good
Sulphuric acid 20%	Excellent	**Oxygenated & chlorinated solvents**	
Nitric acid 20%	Good	Acetone	Limited to spillage
Phosphoric acid 20%	Good	Methyl ethyl ketone	Limited to spillage
Caustic materials		Methylene chloride	Poor
Sodium hydroxide 20%	Excellent	Carbon tetrachloride	Limited to spillage
Ammonium hydroxide 20%	Very good	**Salts**	
Oxidizing materials		Ammonium nitrate	Excellent
Sodium hypochlorite 12%	Good	Ammonium sulphate	Excellent
Hydrogen peroxide 10%	Good	Ammonium phosphate	Excellent
		Sodium chloride	Excellent
		Ferric chloride	Excellent

Inspection

A detailed inspection test plan will be agreed upon depending on the application type. Testing for example of adhesion and shore hardness might be carried out.

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 EPL is available in 60 litre kits, 2 x 20 litre resin and 1 x 20 litre hardener.

Health and Safety

Epoxy resin products are skin sensitizing and can have a caustic reaction. Read MSDS Data Sheet prior to use. Wear protective gloves, clothing and protective eye-wear when using. Wash hands before eating and avoid breathing vapours. Please observe the actual valid material safety data sheet and follow the described safety measures for handling of the product.

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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 spray equipment and application of sol-gel materials. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Hychem and executed under seal by a company officer.

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.

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