



Hycrete PU-SL

Polyurethane concrete flooring system

Hycrete PU-SL is a unique polyurethane concrete product which is applied as a topping over concrete floors where difficult service conditions are the norm. Hycrete PU-SL is recommended for use where exposure to temperatures up to 120°C is expected. For these conditions a minimum 9mm is required. Hycrete PU-SL is also the product of choice where maximum resistance to acetic, lactic and other organic acids is required. Resistance to food acid (eg phosphoric) and sanitizing chemicals such as peroxyacetic acid solutions is also excellent.

The system is based on a solventless polyurethane and a cementitious quartz filler blend. The product is usually applied as a 6mm broadcast topping complete with a range of anti-slip finishes. This broadcast system should be sealed with Hycrete PU-TC or PU-TC Solar.

Hycrete PU-SL can also be applied as a single layer, smooth seamless 3-4mm self-levelling topping.

FEATURES AND BENEFITS

- Heavy duty, durable, abrasion and impact resistant
- Chemically resistant to acids, caustics, fats and cleaning solutions
- Fast installation with no odour issues
- Can be applied to 7 day old concrete
- Moisture tolerant and can be applied to a slightly damp surface
- Available with a chemical accelerator for fast cure speed even at low temperatures
- Available in a variety of non-slip textures to meet and exceed Australian Standards for safety
- Supplied as a pre-packaged kit for uniform consistency
- Available in a range of colours

INDUSTRY APPLICATIONS

- Abattoirs and meat processing facilities
- Bakeries and snack food manufacturers
- The seafood processing industry
- Breweries, wineries, fruit juice and soft drink manufacturers
- Cold storage warehouses, cool rooms and freezers
- The dairy industry including milk, butter, cheese and yoghurt products
- The edible oil and margarine industry
- The sugar industry including refineries and confectionery producer. The chemical and mining industry, containment bunds in mineral processing and treatment plants
- Ammonium Nitrate storage
- Areas subject to constant heavy traffic and chemicals such as tanker bays, waste transfer stations, fertilizer plants, large machinery workshops, bulk liquids transfer etc.
- Commercial and industrial kitchens in restaurants, hospitals, catering facilities, etc.
- Bars, food retailers, supermarket food preparation areas

TECHNICAL CHARACTERISTICS (WITHOUT AC25)

Mixing ratio by weight.	
A : B	3 : 3
A : B : C	3 : 3 : 14
Part D - Pigment	175g
Pot life @ 25 °C	approx. 20 minutes
Application temperature (min. 3 °C above dew point)	10 to +30 °C
Material consumption	1.9 kg/m ² per mm
Overcoating @ 25 °C	12 -24 hours
Cure time @ 25 °C:	
foot traffic	12 - 20 hours
heavy traffic	2 days
chemical exposure	7 days
Coefficient of expansion - Hycrete PU-SL	14 x 10 ⁻⁶ °C ⁻¹
Coefficient of expansion - Concrete	12 x 10 ⁻⁶ °C ⁻¹
Adhesive strength	> 1.5 MPa
Tensile strength	7 MPa
Elastic Modulus	2 GPa
Flexural strength	15 - 20 MPa
Compressive strength	45 - 55 MPa
Temperature resistance	-20 °C to 120 °C
Hardness (Shore D)	80 (7 days)

CHEMICAL RESISTANCE

CHEMICAL	Hycrete PU-SL
Organic acids	
Acetic acid 5%	Excellent
Acetic acid 10%	Excellent
Acetic acid 20%	Good
Butyric acid 10%	Excellent
Citric acid 50%	Excellent
Lactic acid 15%	Excellent
Oleic acid	Excellent
Mineral acids	
Concentrated Hydrochloric	Good
Nitric acid 5%	Excellent
Nitric acid 20%	Good
Nitric acid 35%	Spillage and 8 hour cleanup
Phosphoric acid 15%	Excellent
Phosphoric acid 35%	Excellent
Phosphoric acid conc.	Spillage and 8 hour cleanup
Fats, oils & solvents	
Animal fats	Excellent
Ethyl alcohol	Good
Kerosine	Excellent
Lubricating oils	Excellent
Aromatic and Ketone Solvents	Poor to fair
Petrol unleaded	Excellent
Skydrol	Good
Vegetable oils	Excellent
Water-based chemicals	
Ammonium hydroxide 20%	Excellent
Ferric chloride 10%	Excellent
Salt solutions 10%	Excellent
Sodium hyperchloride 16%	Good
Sodium hydroxide 20%	Excellent

SUBSTRATE PREPARATION

The concrete substrate should be firm, clean and dry. The compressive strength of the surface must be a minimum of 25 MPa and the surface tensile strength a minimum of 1.5 MPa.

New concrete is to be a minimum of 7 days old. The surface of the concrete will need to be mechanically prepared by either diamond grinding, shot blasting or scarifying. All weak and loose material, surface laitance, contaminants and coatings or curing compounds must be completely removed. It is preferred that the prepared surface has a profile to ensure both excellent chemical and mechanical adhesion.

Anchoring grooves minimum 10 mm wide and 10 mm deep will need to be cut just inside the perimeter of the area to be topped as well as around drains. Double diamond blade saw cuts 6 x 6 mm must be placed over the entire floor at maximum distance of 4 m intervals.

Porous concrete will require priming, if unsure then onsite tests must be carried out.

PRIMING

Apply a 1mm scratch coat of Hycrete PU-SL to the prepared surface. Or apply a heavy coat of Hychem GP epoxy and broadcast with quartz to refusal (100%).

APPLICATION GUIDELINES

SAFETY PRECAUTIONS

Wear gloves, eye protection masks and overalls during mixing and application. Refer to msds for further information.

MIXING INSTRUCTIONS

Mix Part A and pigment (and AC25 if required) together using a low speed (approx. 350rpm) mechanical mixer until uniform - do not mix at high speed or in excess of 500rpm. Add Part B and mix for a further 30 seconds. Then add Part C Aggregate and mix for approximately 90 seconds scraping down sides of mixing container and ensuring all the ingredients have been incorporated and are thoroughly mixed, with the final mix being totally homogenous. It is important to maintain continuity of mixed material on site to maintain the wet edge of the applied topping.

* AC25 Accelerator - When using AC25, it must be added and pre-mixed into the Part A before the addition of Part B. Use 15-30ml per kit to approximately halve the curing time.

SELF LEVELLING 3-4MM TOPPING

Apply the mixed product over the prepared surface using either pin rake or notched trowel set at the correct thickness (3-4mm). The topping is then rolled with a spiked roller to remove entrained and entrapped air.

ANTI-SLIP 6MM TOPPING

Where a 6 mm anti-slip topping is required it is necessary to broadcast the applied 4 mm Self levelling topping with the chosen aggregate to a beach finish and allowed to cure. Once cured the excess aggregate is swept and vacuumed away. The surface is now ready for sealing with Hycrete PU-TC. The non-slip texture of the system will be determined by the size of the aggregate used.

ANIT-SLIP 9MM TOPPING

To the Hycrete PU-SL add 3.4 litres of coarse quartz or bauxite and trowel down at the required thickness broadcasting into the wet surface using the Hycrete PU-TC as a final seal coat.



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Aggregates

The hardness of the broadcasting aggregate will impact on the durability and lifespan of the applied flooring system. The harder the aggregate, the better the long term performance. The following list shows a comparative hardness of some commonly available aggregates.

Quartz Sand	Hard
Bauxite	Harder
Aluminium Oxide	Hardest

For heavy duty environments where exposure to regular hard wheeled traffic or constant mechanical abrasion is common, Hychem strongly recommend consideration be given to choosing either Bauxite or Aluminium Oxide as the broadcasting aggregate.

COVERAGE

1 litre Hycrete PU-SL/m²/mm thickness.

PACKAGING

Hycrete PU-SL is a 3 component product consisting of a resin, hardener and blended fillers. This is usually sold as a neutral kit requiring a 175g pigment pack.

Component breakdown:

Part A	3 kg
Part B	3 kg
Part C Aggregate	14 kg

This mix yields 10.50 Litres

LIMITATIONS

Hycrete PU-SL is an industrial flooring finish which may discolour on exposure to UV light from the sun or an artificial source. The severity of discolouration is dependant on colour choice. Any such discolouration has no effect on the performance of the product.

SHELF LIFE

This product has a shelf life of 9 months from date of manufacture, stored away from sunlight 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.

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. 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.

NOTE: Customer responsibility

The technical information and application advice here given is based on the best information available to Hychem 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.

Hychem reserve the right to modify the content of any technical data sheet at any time, without prior notice. It is the users responsibility to obtain the most recent and up to date issue.

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.

Due to the many different substrates and working conditions that can be experienced either during application or following installation, Hychem can provide no guarantee of an application result.

Hychem recommend the application of test samples on site for evaluation prior to any final installation.