



HYCHEM DATA SHEET

HYCHEM SF 12 and SF 12FG

Fast cure epoxy coatings

Description

HYCHEM SF 12 and HYCHEM SF 12 FG are epoxy coatings with exceptional chemical resistance and fast cure speed. The products differ in their film build, abrasion resistance, surface finish and solvent content.

HYCHEM SF 12 is almost solventless and is designed for the surface coating of trowelled and broadcast epoxy toppings which already have an antislip profile. It is also used as a general epoxy floor coating in the food and chemical industries where exposure to organic acids, fats and solvents is commonplace. Its fast cure speed makes it ideal as a coating for weekend repairs. The solventless nature allows it to be used as a high build coating suited to application rates of 3 -4 sqm/litre and film builds of + 500 microns in 2 applications.

Antislip additive is added to the surface as required.

HYCHEM SF 12FG, a high solids variant of SF12 is formulated to contain a natural FINE GRIT antislip additive which produces a surface capable of an R11 finish when applied at 7-8 sqm/litre. This makes the product ideal for walkways and production areas in a wide variety of industries. Applied at 8 sqm/ litre, 2 coats of HYCHEM SF 12FG will produce a 200 micron dry film. The chemical resistance of the 2 products is identical when compared at the same film thickness.

Area of Use

HYCHEM SF 12 products can be used as a protective, abrasion resistant floor coating for concrete surfaces wherever such a coating is required. Such coatings are ideal for foot and light vehicular traffic. For heavy traffic a screed coat of HYCHEM GP, E 300 SL or E 300 SLF should be applied prior to coating.

The application of a HYCHEM SF 12 epoxy coating system provides protection against abrasion and damage to the concrete whilst significantly improving the aesthetics of the floor, contributing to a better and healthier working environment.

Typical industries for use would be,

- Dairies and dairy products food manufacturers
- Margarine & oil products processors.
- Beverage manufacturers, beer, wine, juices and soft drinks
- Butchers and Bakeries
- Snack food manufacturers and cereal processors
- Abattoirs, poultry and smallgoods industry
- Kitchens & bars in hotels and restaurants
- Food service counters in supermarkets and fast food outlets.
- Production floor areas in all types of component assembly.
- Antislip walkways and safety markings in public transport and shopping centres
- Antislip walkways and safety markings in heavy industry and the resources sector.

Chemical Properties

Due to the relatively low coating depths of paint on products, they are often used in conjunction with quartz mortars. Many situations dictate that the floor needs to be repaired before it can be coated. Often a complete topping of a trowelled or SL epoxy is desirable to meet the demands of heavy forklift traffic.

HYCHEM E 300 or E 300 SL are ideal epoxy binders that can easily be used to produce hard wearing, impact resistant epoxy toppings by blending with appropriate quantities of quartz filler.

HYFLEX NS Epoxy Jointing Sealant produces flush finish floor joints, reducing both noise and impact.

HYCHEM Epoxy Glaze 2 may be used as a final surface sealer in cold and humid climates where water condensation and surface whitening becomes apparent.

Chemical Resistance

HYCHEM SF 12 products are superior in chemical resistance to commercially available generic epoxy paints. This applies to both resistance to mineral acids solvents, oils and fats.

HYCHEM has developed a system that enables comparisons between products. Five solutions are used, a solvent blend, a dilute caustic solution, an organic acid, a mineral acid and a chlorine solution. Absorbion parameters with these solutions enable accurate predictions to be made as to on site performance with a large variety of chemical compounds. Eg. Good solvent resistance means good hot fat resistance.

Chemical	HYCHEM SF 12	HYCHEM SF 12 SF
Xylene/Butanol	Good 60	Good 60
20% Caustic soda	Unaffected 0	Unaffected 0
10% Acetic acid	Very good 35	Very good 35
20% Phosphoric acid	Very good 35	Very good 35
16% Sodium hypochlorite	Unaffected 0	Unaffected 0

Surface Preparation:

The existing surface needs to be free of fats, oils, curing agents, surface laitance and other recognizable contaminants. Shot blasting or diamond grinding are the preferred techniques. The finished, prepared surface must have a tensile shear strength capable of absorbing the shear stresses applied by the epoxy coating as a result of thermal movement. The German Standard DIN 1048 measures this property and a result of 1.5 MPa minimum is expected of a properly prepared surface.

Application:

Resin and hardener need to be mixed according to the ratios stated on the container labels. Mix only the quantity of product that can be applied within the work life of the product. The work life is temperature dependant and will halve with an increase of 10 deg and double with a decrease of 10 deg. The mixed product is applied by roller, selection of roller is dependant on the type of finish required.

HYCHEM SF 12 is available in neutral or ready pigmented. If neutral, a 750 ml pigment pack needs to be added to the 5.4 litre resin pack prior to blending with the hardener. HYCHEM SF 12FG is already pigmented when supplied.

HYCHEM SF 12FG is then applied with a short nap, quality roller at a coverage rate of 7-8 sqm/litre.

A second coat is applied after the first has cured sufficiently to walk on. (6-8) hours after application.

Alternatively the second coat may be applied any time within 48 hours.

HYCHEM SF 12 is applied by roller at a coverage rate of 3-5 sqm/litre depending on whether the surface has been, trowelled, broadcast or is smooth. Antislip additive may be cast into the smooth coat as required. For broadcast methods, please refer to the technical data sheet for HYCHEM E 300 SL or E 300

Environmental Hazards & Conditions

Low surface temperatures and high humidity can result in water condensation on the uncured surface. This results in a white film and is known as carbonation. Whilst this film is very thin and causes no chemical damage it can be unsightly on dark surfaces. Normal surface traffic will remove this film over time. Alternatively a clear coat of HYCHEM Epoxy Glaze 2 can be applied over any surface showing this surface effect. Applying Epoxy Glaze 2 will also produce a higher gloss finish and protect the surface against colour damage due to chemical effects of spillages and cleaning chemicals.

Standards Compliance – AS/NZ 4586

HYCHEM SF 12 has been tested for its antislip properties against AS/NZ 4586. The classification for compliance depends on the level of antislip additive used on the surface. When tested using the ramp method, available only in the laboratory HYCHEM SF 12 with no antislip on a smooth surface yields a classification of R 10

With 80 mesh alumina added, yields a classification of R11
 With 36 mesh alumina added, yields a classification of R12
 With 24 mesh alumina added, yields a classification of R13

Comparative values using the “on site” wet pendulum methods are given in the Handbook associated with the standard. HYCHEM SF 12FG which contains alumina 100, yields a classification of “V” which is rated to be similar to R11 using the ramp method.

Typical Physical Properties

	HYCHEM SF 12	HYCHEM SF 12FG
Viscosity Resin	11,000 mPas	8,000 mPas
Viscosity Hardener	285 mPas	1,000 mPas
Specific Gravity Resin	1.40	1.48
Specific Gravity Hardener	1.04	1.36
Work time@20 deg	20 minutes	30 minutes
Recoat time@20 deg	5 hours	6 hours
Return to service	24 hours	24 hours
Full chemical exposure	3 days	3 days
Mix Ratio	2:1	1:1
Volume solids	97%	85%
Film thickness per coat	200 – 300 microns	100 – 125 microns
Colour stability	Yellows on exposure	Yellows on exposure
Slip Resistance ANZ4586:2004	R10-R13 dependant on antislip	Class V

Colour

HYCHEM epoxy products are designed for maximum chemical resistance, all colour pigments are epoxy based. Whilst every effort is made to meet a customers colour requirement, the colour supplied does not purport to meet any recognized colour standard and it is the customers responsibility to ensure that the colour is suitable for the intended use. Within chemical environments, some colours may be adversely affected by chemical exposure, eg. Phosphoric acid and oxide based colours. Exposure to UV light will yellow high chemical resistant products. No guarantees as to colour stability can be given

Packaging

HYCHEM SF 12 is available in a 9 litre kit pigmented to colour, containing 6 litres of resin and 3 litres of hardener. It is also available as 5.4 litres of neutral resin and 750 ml colour packs. HYCHEM SF 12 FG is available as an 8 litre and an 18 litre kit, prepigmented.

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 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. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

Safety Precautions

Epoxy products may cause allergic reactions through skin contact,

goggles, protective gloves and overalls must be worn. Ensure that there is adequate ventilation and avoid breathing the vapour.

Exclusion Clause

- The information contained in this data sheet is based on many years experience and is correct to the best of our knowledge. HYCHEM will be under no liability whatsoever whether in:
 - Contract or tort (including, without limitation, negligence)
 - Breach of statute
 - Any other legal or equitable obligation other than the quality of the product at the time of despatch.
- Any queries about specification use or application should be directed to our technical service department immediately.
- This exclusion clause does not operate to exclude any warranty that by law may not be excluded.

