ACALOR

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Hi-Chem Plus Render

Introduction

Hi-Chem Plus Render offers outstanding resistance to sulphuric acid at all concentrations up to 98%, has excellent resistance to many other chemicals, especially solvents, and is capable of resisting wear and abrasion from mechanical traffic.

Hi-Chem Plus Render is a 3 component system comprising resin, hardener and specially graded fillers and is trowel applied at approx. 5mm thick as a lining for vertical surfaces in areas subject to spillage of aggresive chemicals e.g bunds. For convienience, bund floors may also be coated with this render grade rather than the floor screed version.

Hi-Chem Plus Render is specially formulated to give an impervious render that does not rely on surface sealers to prevent porosity.

Hi-Chem Plus Render is a specialised resin system and requires special application techniques and must be applied by experienced applicators only.

Hi-Chem Plus Render should not be exposed to chemical spillage within 7 days of application.

It is essential that good house-keeping practices are maintained at all times to maximise the performance of **Hi-Chem Plus Render.**

Typical Applications

Typical applications include bund lining and flooring in water treatment areas, electrolytic refining and electroplating plants and the petrochemical and pharmaceutical industries.

Whilst resistance to many other chemicals is also excellent, other APML products may be more appropriate and cost effective - consult APML Technical Sales Depatrment.

Method of Use

Storage

All materials must be stored prior to use under cover in a dry heated store. Do not store below 10ºC, as the base resin is prone to crystallisation below this temperature.

If any crystallisation has occured consult APML Technical Sales Department before use.

New Concrete

New concrete should be thoroughly dry (moisture content not higher than 5% measured at a depth of 20mm with a Protimeter 'Concretemaster') and fully aged before any work is commenced. The surface must be free from laitance and non-polished. A wood float finish is ideal.

If it is necessary to remove laitance this should preferably be done by grit-blasting or grinding. It is essential that any dust created during preparation is completely removed with an industrial vacuum cleaner.

Old Concrete

All traces of oil, grease or other contaminants must be removed.
The following alternative methods may be used, in order of preference:-

a) Grit-blasting, mechanical grinding or planing (floors).
b) High pressure hot water cleaning using heavy duty detergent followed by **thorough** rinsing with clean water.
c) Mechanical scrubbing with a heavy duty detergent or proprietary floor cleaner followed by **thorough** rinsing with clean water.

After finally washing down, the area must be allowed to dry **thoroughly** before applying **Hi-Chem Plus Render.** The use of hot air blowers will be beneficial.

Caution: Where silicate or silicofluoride sealers or any type of surface coating have been used it is essential that these are first removed by method (a) above before applying **Hi-Chem Plus Render.**

Certain types of coating may be difficult to remove by grinding and in such cases the **APML Technical Sales Department** should be consulted.

Surface Preparation

Where rising damp is likely to be a problem, an efficient damp proof membrane should be installed beneath the concrete screed.

Ambient Temperature

The ambient temperature should be a minimum of 10ºC and preferably 15ºC during application due to the higher viscosity of the base component. If necessary, heating should be applied sufficiently in advance of the time of application to ensure that the temperature of the substrate and surrounding air is at least this level before commencing work.

Priming

Use **Hi-Chem Plus Primer** which is supplied in a 1.7kg pack containing separate base and hardener components. Additionally, for priming vertical surfaces, 0.5 Kg of talc filler is added. **Thoroughly** mix the base and hardener components together with a palette knife, flat piece of wood or preferably a slow speed drill fitted with a mixing paddle. If applicable slowly add the talc filler whilst stiring. Apply the mixed material with a lambswool or long pile synthetic fibre roller. Cut in any edges etc by brush. Spread uniformly over the prepared surface ensuring the substrate is well 'wetted'. Do not apply excess primer or allow the primer to sag as this will cause difficulties during application of the Render. The primer must be allowed to develop a 'tack' before application of **Hi-Chem Plus Render.**

A pack of **Hi-Chem Primer** will cover approx 7m² depending on porosity and/or profile of the surface. The **Hi-Chem Plus Render** must be applied while the primer is tacky.

In no circumstance should the primer be allowed to cure to touch dry before the Render is applied.

Application of Render

Hi-Chem Plus Render is supplied as a three component pack, and should be mixed by means of a forced circulation mixer e.g 'Cretangle' or similar. Free fall mixers of the type used to mix concrete are not recommended nor is mixing by hand.
Mix together the entire contents of the resin base and hardener containers. When thoroughly mixed add the contents of the bag of filler slowly, stirring continuously. Mix for approximately 4 minutes.

Note: Do not overmix as this will lead to excessive air entrapment and formation of heat which will cause application difficulties and a reduction in pot life of the mix.

Apply the mixed **Hi-Chem Plus Render** to the primed surface and spread out with a trowel to produce an even coverage. Finish with a steel trowel to a smooth, even textured and closed surface.

Technical Specification

General data for guidance purposes only
(Approximate figures)

Packing	20 kg pre-weighed packs
Density of mixed material	2.16 kg/litre
Volume of pack	9.2 litres
Coverage per pack (20 kg)	1.8m² at 5mm thickness
Pot life	30 minutes at 15ºC
Cure time at 15ºC	Approximately 24 hours to accept foot traffic. 7 days for full chemical resistance
Shelf life	12 months minimum

Physical Properties
(Approximate figures)

Compressive strength	93 N/mm²
Flexural strength	31 N/mm²
Adhesion	Stronger than concrete provided surface adequately prepared.

Chemical Resistance

Hi-Chem Plus Render shows excellent resistance to concentrated sulphuric acid (97-98 %). Samples totally immersed for 5 months had less than 0.4% weight change. **Hi-Chem Plus Render** also shows excellent retention of physical properties after 7 days immersion - compressive strength no change, flexural strength 28 N/mm²

Hi-Chem Plus Render is also resistant to the effects of a wide range of other chemicals. However it is important that advice is sought from **APML Technical Sales Department** before the product is specified.

Special note: Under no circumstances must any other materials (including epoxy) be used with the Hi-Chem Plus system unless specifically approved by APML. Failure to observe this may cause total failure if subjected to concentrated sulphuric acid.

Health and Safety

This product contains substances that are classified as hazardous according to the Chemical (Hazard Information and Packaging for Supply) Regulations 1994 (as ammended). The product is labelled in accordance with these regulations and further information regarding health hazards, handling, storage etc is detailed in the Material Safety Data Sheet(s). In addition to considering the advice given by APML, all users must conform to the Control of Substances Hazardous to Health Regulations 1994 (as ammended).

All coverages and thicknesses quoted are nominal and will be affected by substrate profile and porosity.

The information in this Data Sheet, given in good faith, is based on results gained from experience and tests. Since application and use are beyound our control, no condition or warranty is given covering the results from the use of our products in any particular case, whether the purpose is disclosed or not, and we cannot accept any responsibility for any loss or damage, howsoever caused arising from the said use.