



SURFACE PREPARATION

Technical Data TD112



INTRODUCTION

The successful application and performance of Reepol industrial floor finishes depends totally upon the correct surface preparation being carried out.

Reepol resin compounds are applied as in situ finishes where the first coat or primer is absorbed into the substrate providing a chemical bond beneath the surface of the concrete.

Concrete and other cement-based toppings are the most common substrates encountered although Reepol finishes will bond effectively to wood, metals, composition flooring and asphalt.

CONCRETE AND OTHER CEMENT BASED SUBSTRATES

Concrete Laitance

When concrete is applied a compound of cement and finer aggregates float to the surface and produces concrete laitance. This compound is not only impervious but very weak.

It is essential that all concrete laitance is removed prior to the application of Reepol industrial flooring.

Surface Treatments

The use of surface hardening treatments such as silicofluoride and silicate are not recommended or needed.

Concrete Moisture Content

As is common practice prior to the application of any bonded product to concrete it is important that the hydration of the cement is sufficient to prevent pressure build up or osmosis.

Experience has shown that hydration of concrete to a moisture content of 75% R.H is ideal for Reepol flooring up to 6mm but that up to 95% R.H can be tolerated with water based epoxy polyurethane systems and heavy duty flooring over 6mm in thickness.

CONCRETE CURING TIMES

The following are guides to curing times at 20°C

Concrete Slabs	Polymer Modified Screeds
150mm thick - 6 weeks	12mm thick - 3 days
100mm thick - 4 weeks	25mm thick - 5 days

Testing with a moisture meter should always be carried out to ensure 5% (75% R.H) has been achieved.

MECHANICAL SURFACE PREPARATION

- a) **Blasting.** Several methods of surface preparation have been devised over the years but without doubt the most successful and economical method is dust free shot blasting for concrete or granolithic surfaces. The surface texture that can be achieved coupled with the ability to remove surface contamination can be adjusted to suit specific site conditions and requirements. Compact machines are now available to allow access to small and restricted areas at economical cost.

Other successful mechanical surface preparation techniques include:

- b) **Scarifying,** where the surface is broken away evenly by rotating flails or hard metal teeth. Equipment is available with efficient dust control mechanisms.
- c) **Scabbling,** where the surface is spalled off using pneumatic powered machines - dust generation is difficult to control.
- d) **Grinding with heavy-duty strokes.** This technique has inherent problems of dust generation and particular care is required to ensure total removal of any dust residues from the floor surface.
- e) **Hot compressed air treatment.** This technique is particularly useful in areas which have been badly contaminated with oil and grease. However, it can weaken low-grade concrete and immediate treatment with a low viscosity primer is essential to maintain satisfactory strength in the substrate coupled with the provision of an effective barrier to residual oil.

This method is often employed in combination with chemical degreasing and dust free shot blasting. Please refer to Reepol Technical Centre for advice.

SURFACE PREPARATION

Technical Data TD112

This method is often employed in combination with chemical degreasing and dust free shot blasting. Please refer to Reepol Technical Centre for advice.

CHEMICAL SURFACE PREPARATION ACID ETCHING

The principle behind acid etching is that the acid dissolves cement laitance which is then washed away in solution.

A 10% solution of hydrochloric acid is recommended as a suitable acid etching medium for concrete and granolithic substrates.

The concrete must then be neutralised (Ph7) by rinsing with copious amounts of water.

This method of surface preparation was popular prior to hygienic blast cleaning techniques being perfected. The results obtained, however, do vary according to compaction and quality of the concrete being treated. Also the introduction of additional moisture to the floor surface required careful drying out prior to application of resin based products.

CHEMICAL DEGREASING

Remove any oil, grease, chemical contaminants, paint etc by use of heavy degreasers and paint strippers. After treatment the surface must be thoroughly washed down to remove all chemical residues and to ensure that the surface is chemically neutral. The floor must then be dried to the maximum moisture content specified.

Once the surface is completely free of contamination the aggregate surface of the substrate must be exposed utilising mechanical preparation methods to allow penetration of resin into the substrate.

PRIMING

Once the cement laitance has been removed by the appropriate surface preparation it is important that the first coat of primer completely seals the surface.

Porous Concrete

If after application of the appropriate Reepol primer, the concrete is still unsealed and the primer has been totally absorbed, a further coat should be added.

Badly Pitted Concrete (flow applied flooring)

If after surface preparation the concrete surface is badly pitted it is essential that after priming a scratch coat of flow applied flooring is applied to fill in the voids prior to the application and final finish.

Failure to do so could result in bubbling occurring in the surface of the flow applied flooring.

PRIMERS

Please refer to the appropriate product technical data sheet to determine the type of primer required and the application method.

WOODEN FLOORS

All wooden floors must be securely fastened down and any nails punched below the surface. They must be protected from rising moisture by an effective damp proof membrane.

Old wooden surfaces should be sanded thoroughly to expose clean wood.

New wood, plywood, hardboard, wood blocks etc may have been chemically treated and if the surface appears at all greasy it is advisable to solvent wash the surface with Reepol solvent to thoroughly remove all residues to ensure maximum adhesion.

METAL FLOORS

Metal flooring and decking must be free from oil, grease etc. Any rust or millscale must be removed. The preferred method of preparation is by dust-free shot blasting to SA2.5 standards.

COMPOSITION FLOORS

The application to various types of composition flooring have been carried out successfully after assessment and testing of the substrate. Please refer to Reepol Technical Centre for advice.

ASPHALT

Asphalt should be thoroughly degreased and abraded. Only Reepol flexible flooring should be applied over asphalt.

SPECIFICATIONS

If in doubt as to the most effective method of surface preparation, please contact Reepol on 01952 588575.