RESIDENTIAL & COMMERCIAL

INDUSTRIAL & MARINE

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SHIMICOAT
SURFACE SOLUTIONS

Surface Preparation is THE MOST important step when applying any coating materials.

Surface preparation is the most important stage prior to any protective coating application. An ideal coating is only as good as the surface preparation.

Surface Test for Physical Properties

1. Contamination

   Contaminations such as oil and grease stains must be removed prior to any coating application. Ideally, we recommend mechanical surface grinding, if unavailable, methods such as degreaser, alkaline/caustic cleaners, hot water pressure wash, stiff broom agitation, etc.

2. Porosity

   All protective coating materials best bond to porous substrate. The easiest way to test surface porosity is to run a quick Hydration Test by applying a few drops of water to dry concrete surface, if absorbed fine, if it stays on surface like water-beads, you need to roughen the surface by means of acid wash, physical agitation or ultimately sanding and grinding.

3. Moisture

   As summer approaches, the atmospheric temperature rises and any moisture imbedded into the concrete escapes. Moisture is probably one of the most common problem when applying any surface coating materials. It can cause bubbles, blisters, delamination, discoloration and peeling off the new coating. So, it is crucial to ensure the surface is dry and moisture free.

Ideally, we recommend using any moisture meter device to accurately measure moisture content in different spots of the floor. If unavailable, a simple plastic sheet test can help. Please see SHIMICOAT Moisture Test Method.

Place a piece of plastic sheet on the surface and tape down the perimeter with duct tape to the surface. Allow 24 hours for evaporation and peel off to see if any condensation on the underside of the plastic. Pay particular attention to darker spots on the surface as it may be an indication of excessive moisture. If positive, wait for a warm day then retest. Commence surface preparation and coating application once satisfied with moisture free surface.

Dry Test:
Place a piece of plastic over a small area, tape the edges and leave for 1 hour. Remove plastic, if there is no moisture on either surface, concrete is sufficiently dry.

Surface Preparation

Surface contamination of the concrete can cause delamination and other premature failure of the any coating system. Contamination such as fat, oil, dirt, building materials, chemical spillage, etc shall be removed from the surface prior to any surface treatment and coating application. Use any of the following methods to prepare the surface for epoxy application:

1. Degreaser wash, high pressure flush
2. Acid wash etching followed by Sugar Soap Flush
3. Grinding, shot blasting or scarifying

Ensure surface to be coated is free of all dirt, grease, oil, paint, chemicals, curing agents and other contaminants. If applying on a concrete surface, grinding is always advisable prior to application of all Shimicoat Epoxy products, to maximize adhesion. Allow to completely dry, run Dry Test[1] (in necessary).

Diamond Abrasive Grinding

Grinding machines with diamond impregnated metal segments on steel discs, are used to remove the top layer of concrete and profile the surface prior to coating application.
The operator should run the grinding machine in one direction then coming back perpendicular across the first series of cuts (Criss cross Motion).

There are a large number of diamond grits and metal bond segments and it is important to choose the right selection for your effective concrete preparation. These are as follow:

Hard Metal Bond: used on soft, chalky and porous concrete as well as broom finished and rough concrete surface.

Medium Metal bond: Used for general purpose concrete

Soft Metal Bond: Used for hard, Steel-Troweled and/or Burnished Slabs.

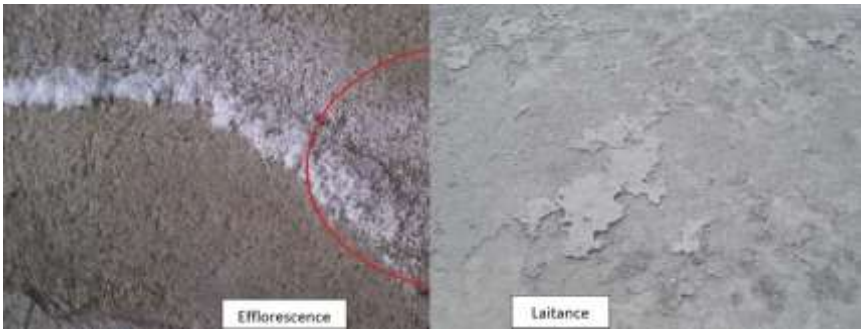
Super Soft Metal Bond: Used for extremely hard and/or sealed slabs. Ideal choice for removing acrylic sealers.

PCDs: Used for removal of coating materials, mastic, glue and epoxy.

Extra care shall be taken to ensure high points or edges are correctly removed.

Efflorescence and Laitance

The source of Efflorescence and Laitance should be identified, rectified and the white crystalline deposits shall be removed prior to any epoxy coating application, otherwise delamination and peeling may occur in future.



New Concretes:

New concretes are initially very alkaline (pH of 12-14), requiring a minimum period of 28 days to fully cure/harden, lose moisture and neutralize. Acid wash followed by diluted Sugar Soap flush may be advisable. Rinse and high pressure the surface thoroughly to ensure all used cleaning chemicals being flushed away.

If the substrate is excessively porous, a thin/diluted coat of Tinted High Build Epoxy should be applied to the substrate to arrest air rising through applied product.

QHSE Tips:

Care must be taken when using any of the chemicals for surface treatment. DO NOT allow any residues to contaminates adjacent areas or spill into drains. Disposal of any waste materials must be carried out in accordance to local regulatory and environmental legislations. Appropriate PPE (Personal Protective Equipment) must be used at all times. Please refer to the MSDS of each chemical used.
For specialist advice please contact Shimicoat technical representative to ensure the correct preparation procedure is employed for your specific applications.

Quality, Health, safety and Environment Management