



CONCRETE PREPARATION GUIDE

Coating performance is directly affected by surface preparation. Integrity and service life will be reduced significantly if the surface is improperly prepared. Selection and implementation of the proper surface preparation ensures coating adhesion to the substrate and prolongs the life of the coating system. New concrete must be cured prior to coating. "Cured" is generally defined as, "concrete poured and aged at a suitable temperature for at least 28 days".

EXAMINE THE SURFACE

Prior to planning a job the contractor should survey of the concrete surface. If excessive laitance is present, this material must be removed down to solid concrete. The coating or overlay will not bond properly to the weak layer of concrete. The surface should be checked for barriers such as existing sealers, curing materials, grease, oil, efflorescence, and dirt that must be removed. In short, you want no surprises.

TEST THE CONCRETE

A "water drop" test can be used to determine if the surface is clean. Water beads on surfaces contaminated with sealers, curing compounds, oil, and grease. Water beads on surfaces that are too dense to accept a penetrating primer.

CLEAN UNCOATED CONCRETE

Remove any chemicals, oil, and grease from the concrete first. Contact your RIO representative for details.

REPAIR SURFACE DEFECTS

Grind or chip off from the concrete surface all projections greater than 1/16". Remove any loose concrete, then clean and fill holes, cracks and other surface defects with an approved method. Determine if the patch surface texture should be rough or smooth, and how long the patch needs to cure before being coated. In cases of severe profile where the surface needs to be restored, resurface with RIO-COAT Epoxy Mortar or other suitable RIO FLOORING System.

PREVIOUSLY PAINTED SURFACES

Examine the existing coating to ensure that it is well bonded to the concrete. Any loose coating must be completely removed. Edges should be sanded to a feathered edge. Clean the entire floor thoroughly with detergent cleaner. The surface must be free of all dirt, oils, or other contaminants. After the floor has completely dried, sand the existing coating until a powdery residue is evident and all gloss is removed. Sweep or vacuum clean, and wipe with xylene to ensure good adhesion of the new system. When coating over existing coatings, a test patch is always recommended to evaluate compatibility.

MOISTURE VAPOR TRANSMISSION (MVT)

Moisture Vapor Transmission (MVT), also referred to as “hydrostatic pressure”, “capillarity” or “vapor pressure”, is caused by moisture being present underneath the concrete slab. MVT can cause blisters, bubbles and other effects in a resinous coating. As moisture rises, it dissolves salts in the concrete and becomes alkaline. This alkaline water attacks the resin. Damage caused by MVT does not constitute product failure. We recommend that contractors include a written MVT disclaimer in all of their contracts before beginning a job. We also recommend that contractors always test for signs of MVT problems. This will not ensure that the problem may never occur. If a problem is suspected, contact your RIO Representative to discuss preventative measures. All slabs should be tested for MVT. In slabs that exceed the maximum test results contact your RIO Representative for options.

Acceptable Test Methods for MVT Calcium Chloride Test: Perform a quantitative anhydrous calcium chloride test in accordance with ASTM-F1869 Standard. The maximum acceptable result for this test method is 3 pounds per 1,000 sf per 24 hours. Relative Humidity Test: Perform a quantitative Relative Humidity test in accordance with ASTM F2170 Standard. The maximum acceptable result for this test method is 75%.

CONCRETE PREPARATION METHODS

Etching

Once a common practice, acid etching is no longer an approved method of concrete surface preparation.

Shot Blasting

Steel shot blasting involves steel shot being centrifugally propelled at high velocity onto the surface. This process is confined in an enclosed blast chamber that recovers and separates dust and reusable shot. Shot blasting is principally used to roughen horizontal surfaces in preparation for the application of sealers, coatings, or polymer overlays. This method is also used to remove polyurethane coatings up to 10 mils thick, tile mastics, and brittle coatings such as epoxy or methyl methacrylate systems up to 1/8 inch thick. Removal of thicker materials may require multiple passes. Shot blast systems produce very little airborne dust or contamination. Most models can be fitted with a filter to further lower the level of airborne dust produced.

Diamond Grinding

Diamond grinding is the rotation of one or more abrading stones or discs applied under pressure at right angles to the surface. This method may be used on horizontal surfaces to remove deposits or coatings, and to reduce or smooth surface profile. The grinding stone or disc is applied under pressure and moved across the surface until the desired effect is achieved. Diamond Grinders can utilize both metal or resin

bond diamonds that can be used either wet or dry for concrete grinding. Solid carbide scarifying cutters are used for thicker coatings. Grinders can also be used effectively to level uneven joints or high spots of 1/16 to 1/8 inch. Grinding provides contractors with a smoother finish than shot blasting, scarifiers or scabblers.

Scarification

Scarifying is the rotary action of the cutters (toothed washers) impacting the surface at a right angle to fracture or pulverized the top surface of the concrete to expose a clean, fresh surface. The cutters are assembled on tempered steel rods mounted at the perimeter of a drum that rotates at high speeds. Scarification is used for the removal of concrete or coatings up to 1/4 inch thick. It may also be used to profile concrete surfaces. Scarification can also cut deep grooves into the concrete to provide a nonslip surface.

Scabbling

Scabblers use compressed air to hammer piston-mounted bits into the concrete surface, roughening the concrete surface more than grinding or scarifying. Scabblers can remove up to 1/4 inch of concrete surface in a single pass. Scabblers are ideal for removing spalling concrete, removing epoxy, and removing loose or deteriorated concrete.

Once the surface is clean, prepared, passes the water drop test and surface defects have been repaired, the surface is ready for priming. Prime with the appropriate RIO FLOORING SYSTEMS Primer, based on the system to be installed. Consult your RIO Representative for information.

Please read all safety data before using product.

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SCAN ME



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