

DEKRO PAINTS

CONCRETE FLOORS

GUIDELINES FOR LAITANCE

Laitance



WHAT IS LAITANCE?

Water is an essential part of the concrete mix; good curing of concrete depends on complete hydration of the cement portion of the concrete mix. Either adding excess water to the mix, or inadequate curing will cause laitance.

Laitance is the weak, milky or powdery layer of cement dust, lime and sand fines that appear on the surface of concrete. These fines rise to the surface of concrete that was over-watered, or allowed to dry prematurely in the absence of curing membranes or other good curing practices.



It may also form as a consequence of over-trowelling. Good concrete curing involves slowing down the evaporation of water from the fresh, wet concrete, to allow sufficient time for complete hydration to take place, and thus allow the concrete to achieve its maximum strength. Good concrete curing practice involves covering the newly trowelled or formed concrete with wet hessian, wet sand or a curing membrane (such as a liquid applied wax emulsion), or, at the very least, a plastic sheet weighed down at the edges to prevent displacement by gusts of wind.

WHY REMOVE LAITANCE?

The life of a coating is dependent on adhesion to sound concrete. If a coating is applied to the loose, friable laitance, then impact from trolleys, forklifts, etc. will cause the laitance layer to delaminate, along with the coating.



Can Laitance Be Painted Over?

The short answer is no! Any existing laitance will provide a poor, friable base for coatings, preventing effective adhesion from occurring. Laitance can be removed using diamond grinding, shot blasting or other mechanical methods, and the resultant sound concrete surface can be painted with confidence. For more information on removing laitance and preparing a floor surface for applying a coating, please refer to the following Dekro Technical Notes:



Diamond Grinding



WHAT IS DIAMOND GRINDING?

Diamond grinding is a thorough and efficient method of preparing your concrete floor and is preferred for Dekro Paints range of floor coatings. Diamond grinders use horizontally rotating discs to clean, level and abrade the concrete surface. Most diamond grinders have full vacuum extraction that will significantly reduce the level of dust produced by the grinding process. If you have little experience with diamond grinding, engage an experienced contractor to diamond grind your floor.



WHY DIAMOND GRIND?

Diamond grinding avoids the risk of leaving residues on the surface of the concrete. Acid etching, on the other hand, has a high potential for remaining on the concrete and pooling in areas. Acid residues can interfere with floor coating adhesion or curing in the short term, and promote concrete spalling (corrosion of concrete rebars) in the long term. Well-executed diamond grinding completely removes laitance and levels off imperfections on the concrete surface. This method produces a flat, smooth surface with a profile ideal for all coatings applied by roller or applicator.



FLOOR PREPARATION PROCEDURE USING DIAMOND GRINDING

The surface must be free from oil, grease, dirt and all other contaminants.

1. Check condition of floor joints. If joint sealant is significantly degraded, it should be removed.
2. Remove any oily deposits using high-pressure water wash at 2,000 – 3,000 p.s.i. using Wunda Clean. Mix and use strictly in accordance with the Manufacturer's written instructions and heed all safety warnings.
3. Fill cracks, blowholes or other defects in the concrete with Dekster / Dekro Filler epoxy filling mortars.
4. Diamond grind to remove laitance and create a surface profile to match to the visual standard required.
5. Use a hand-held sander to grind around the perimeter of the floor, to ensure that the profile and cleanliness of the entire floor is consistent



Shot Blasting



WHAT IS SHOT BLASTING?

Shot Blasting is a one-step preparation technique that removes laitance, paint, old coatings, dirt and other contaminants and profiles the concrete surface all at once. It will not remove oil-ingress and water. Most common shot blasters have full vacuum extraction that will significantly reduce the level of dust produced by the blasting process. Tiny steel shot is directed at high velocity to the concrete surface. This breaks up and removes the top layer, including loosely bound laitance. The shot bounces back into the system and is recycled while the dust is removed by vacuum. The use of fine shot will produce a concrete profile suitable for nearly all coating types.

If you have little experience with shot blasting, we suggest that experienced contractors shot blast your floor.



FLOOR PREPARATION PROCEDURE USING SHOT BLASTING

All surfaces must be free from oil, grease, dirt or any other existing contaminants.

1. Remove any oily deposits using high-pressure water wash at 2,000 - 3,000 p.s.i. using Wunda clean - mix and use the products to the Manufacturers written instructions.



2. Create a surface profile by using propriety shot blast equipment on all surfaces to remove laitance and create a sound, profiled substrate to match visual standard

3. Fill cracks, blowholes or other defects in the concrete with a Dekster / Dekro suitable epoxy filling mortar. All surfaces must be clean and dry before application of the specified floor coating system.





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