



### DUSTING CONCRETE SURFACES

Dusting is chalking or powdering on the surface of a concrete slab. The condition is present when the surface powders under any kind of traffic, or when it can be easily scratched with a sharp object or even during sweeping.

#### Why Dusting Occurs

- When any finishing operation is performed while bleed water is still on the surface. Working this water back into the top quarter inch of the slab produces a very high water-to-cement ratio and weakens the surface strength.
- Placement over a non-absorptive sub-grade or polyethylene sheeting, which increases bleeding.
- Inadequate curing, which can result in a soft surface skin.
- Inadequate ventilation when using salamanders, gasoline engines or generators, power buggies or mixer engines in close quarters. A chemical reaction known as carbonation greatly reduces the strength and hardness of the concrete surface.

#### What to Do About It

- Never try to absorb surface bleed water by sprinkling or troweling dry cement into the surface of plastic concrete. Remove excess bleed water by dragging a garden hose across the concrete surface, or reduce it by using air entrained concrete, by modifying mix proportions or by reducing setting time.
- Don't start finishing operations with water present on the surface.
- Avoid direct placement on polyethylene or non-absorptive sub-grades. Layer one to two inches of moist sand over polyethylene before placing concrete.
- Use a liquid membrane curing compound, or wet burlap, to promote proper curing.
- Use warm concrete as well as an accelerator when placing concrete in cold weather. A low water-to-cement ratio and moderate slump helps promote a strong wear resistant surface. A higher slump can be used providing the mixture is designed to produce the required strength without excessive bleeding and/or segregation.

#### How to Repair Dusting

- Apply chemical floor hardener such as zinc or magnesium fluorosilicates to a thoroughly dry floor to minimize or eliminate dusting.
- Severe cases can be handled through wet grinding of the top surface, followed by a properly bonded placement of a topping course.

**Products Used:** Surebond Luster Base Epoxy Sealer; Tamms Chemstop Water Repellant; Tamms Thin Patch; Duralflex Fast Patch.