



## **CRAZING OR CRAZE CRACK**

Crazing, sometimes referred to as “map cracking”, is a pattern of random fine cracks that occur at the surface of concrete at an early age when the unhardened surface mortar dries out faster than the concrete below. This drying at the surface causes the concrete at the surface to shrink at a faster rate than the concrete below causing stresses at the surface resulting in the fine “map crack” pattern. Since these cracks occur at the surface only, they become an unpleasant sight but are none-the-less harmless structurally and will not cause durability problems. Crazing may be more evident when slabs are constructed in hot, windy, and dry installation conditions. The best way to prevent the craze cracks from occurring is to understand the conditions and construction practices that encourage them to form in the first place.

### **Causes of Crazing**

- Use of a very wet mix (>5 inches slump)
- Finishing of surface too early, especially when bleed water is present
- Bringing too many fines to the surface by over finishing
- Sprinkling dry cement on the surface to dry up bleed water
- Sprinkling water by brush to aid finishing
- Start curing too late or improperly (i.e. intermittent wetting and drying)

### **How to minimize occurrence of crazing**

- Use lower slump concretes; do not add water to the mix adjust slump with admixtures instead
- Use concrete with minimal bleeding characteristics
- Do not finish the concrete until bleed water has disappeared or been removed
- Do not overwork the surface to prevent excess fines from coming to the surface
- Start curing immediately following the final finishing pass; cure continuously for 7 days uninterrupted (intermittent wetting and drying increases risk for crazing)
- When appropriate, use broom finished to prevent overworking the surface
- Take extra care when using dry-shake colors. Overworking the dry-shake materials with a steel trowel can cause crazing
- Keep any combustion engine exhaust from venting onto the concrete surface. Carbonation from exhaust may cause surface shrinkage, dusting and crazing.

### **Additional Questions?**

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