

COMMON CONCRETE PROBLEMS

What They Are & How to Repair

Is your freshly poured ready mix concrete driveway or foundation looking like a flaky biscuit with layers peeling away? **Common concrete problems** include **discoloration, scaling, shrinkage and crazing**. What causes these problems and how can you prevent them from happening in the first place? We want to make sure you know about these four common concrete problems and how you can prevent or repair them.

Problem #1: Discoloration

When you place concrete in one continuous pour, all of the concrete should be the same color unless you have intentionally added a high quality color pigment. Dark or light splotches in your concrete may be caused by:

- Variations in the concrete placing or finishing operations
- Finishing concrete too soon or too late
- Excessive, hard troweling

You can prevent discoloration by:

- Maintaining constant subgrade placing, finishing and curing conditions
- If you choose to use calcium chloride, use liquid, not flaked. Calcium chloride can be used to accelerate the set time of concrete and increase its strength, but calcium chloride flakes are very difficult to dissolve and can cause dark spots. Liquid calcium will not cause discoloration.

Problem #2: Scaling

Scaling generally starts with a small area but expands as the concrete surface begins to flake or peel away. Scaling can be caused by:

- Faulty concrete finishing or workmanship
- Water seeping into porous, non-air entrained concrete that is exposed to freezing and thawing cycles

You can prevent scaling by:

- Specifying a proper mix design for exterior flat work which should be low slump and air entrained
- Delaying finishing operations until all standing water has evaporated or been removed

Once your concrete has been finished, continue proper concrete care tips by avoiding the use of salt or other harsh chemicals, especially during the first winter.

Problem #3: Plastic Shrinkage

Plastic shrinkage occurs when a high rate of water evaporates from the concrete surface and is affected by temperature, humidity, velocity and temperature of concrete.

While it may be true that you can't control the temperature or humidity at the location where you're pouring concrete, you can prevent shrinkage by:

- Dampening subgrade and forms
- Erecting windbreaks to reduce wind velocity
- Minimizing placing and finishing time
- Curing as soon as possible after finishing
- Using membrane curing compound, curing paper, wet burlap, sand or other acceptable

COMMON CONCRETE PROBLEMS

What They Are & How to Repair

Problem #4: Cracking

Cracking is caused by rapid moisture loss. Using too many placing tools, dry cement, or rapid drying of the concrete surface can cause the necessary moisture and paste to evaporate, resulting in hundreds of small cracks forming in the concrete surface.

Prevent cracking by:

- Using evaporation retardants or fog spray
- Covering the concrete surface with wet burlap or canvas as soon as possible after strike off and darbying
- Maintaining spray or keeping covers in place until surface is nearly ready for finishing
- Curing immediately. Where possible, continue mist curing to lower temperature by evaporation.

You can avoid discoloration, scaling, shrinkage, cracking and other common concrete problems by following three simple steps:

- Start out with the highest quality concrete mix possible
- Finish concrete properly
- Treat concrete right once it's placed



Oldcastle[®]
Materials
MOUNTAIN WEST DIVISION

