

# Concrete Work Meeting Kit

## WHAT'S AT STAKE

Concrete work is usually hard physical labor that presents many different hazards for the individuals who work in this field.

## WHAT'S THE DANGER

Concrete is relatively easy to manage. You can run into huge problems if it is not worked on properly.

### **Discoloration** – How to Solve Discoloration

- Specify with the ready-mix supplier your tolerance levels
- Prepare a uniform subgrade
- Wait until all the water has evaporated before finishing the concrete
- Avoid hard troweling on the exterior surface

### **Scaling** – How to Avoid Concrete Scaling

- Use a low slump-air (6 to 7 percent) in the entrained mix
- Wait till water has been evaporated from the surface
- Do not use salt or other chemicals during the winter season

### **Crazing** – How to Avoid Crazed Concrete

- Cure the concrete in a timely manner
- Use a moderate slump concrete without bleeding and segregation
- Do not finish concrete until all water has evaporated
- Do not dust dry cement on the surface while water is present
- Do not sprinkle water over the concrete while finishing it
- If the weather could produce high evaporation rates, spray some water onto the subgrade, so it will not absorb the water from the concrete mix

### **Cracking** – How to Reduce Cracking

- Remove topsoil, soft spots and organic material in the subgrade
- Slope the subgrade for proper drainage
- Design a flexible concrete pavement that could accommodate load and movements
- Install concrete joints accordingly by sawing, forming or tooling a groove
- Place, finish and cure concrete accordingly depending on the weather conditions
- Do not finish concrete if it has not finished bleeding
- Avoid rapid drying conditions or use a set retarder admixture
- Minimize the mix water content by maximizing the size and amount of coarse aggregate and use low-shrinkage aggregate

### **Curling – How to Avoid Concrete Curling**

- Use proper curling techniques
- Place concrete joints accordingly
- Use low water content or use water reducing admixtures
- Use the largest possible aggregate size
- Ensure proper bonding when applying thin topping mixes
- Use enough, not excessive, amount of steel reinforcement in the slab
- Place concrete on a damp but absorptive sub-grade so that all the bleed water is not forced to the top of the slab

## **HOW TO PROTECT YOURSELF**

### **THE TOOLS**

Concrete waits for no one. The right tools can make the difference between a successful pour and a potential disaster.

**Screeds:** Long, straight, stiff tubing or boards used to smooth and roughly level wet concrete.

**Protective Gear:** Proper worksite safety practice requires the use of protective gear: eye, hearing, breathing protection concrete.

**Rubber Gloves:** Rubber gloves are always needed when handling concrete.

**Rubber Boots:** Rubber boots ensure you are prepared to step into concrete at any time.

**Wheelbarrows:** Are needed to move small amounts of concrete or to carry tools around the site.

**Portable Mixer:** Portable mixer allows you to mix small amounts of concrete at the job site.

**Shovels:** Are essential for moving small amounts of concrete around a pour to fill voids or depressions.

**Bucket:** Bucket or pail for water is handy for pours in very dry or humid conditions.

**Laser Level:** Laser level is now the standard tool for leveling forms and setting their elevation.

**Floats:** It involves tooling the surface of the damp concrete with a variety of smooth metal or wooden surfaces with the aim of slightly raising liquid cement to the surface to create a smooth finish.

**Vapor Barriers:** Vapor barriers or retarders are used to stop moisture from evaporating from concrete surfaces.

**Groove Cutters and Edgers:** Groove cutters are used to create control joints on sidewalks, walkways, driveways.

**Curing Compound and Hand Sprayer:** Curing compound applied directly to a wet concrete surface to reduce cracks.

**Saws:** Concrete, standard portable woodworking saws, chop saws.

**Plate Compactor:** A plate compactor is a large motorized tool that is used to compact granular surfaces.

**Vibrators:** Vibrators are used to settle and compact concrete during pours or as concrete is being finished.

**Water Pump:** Rain, snow, or drainage can lead to concrete forms full of water. A motorized water pump can get rid of the water much faster.

**Power Hammers and Drills:** Many jobs will require the use of contractor-grade power drills.

## **FINAL WORD**

Concrete work presents a lot of hazards that can be difficult to mitigate against at times. Preplanning and recognizing the hazards will go a long way in preventing injuries. When workers communicate and help each other out while completing the work tasks it makes the environment safer for everyone involved.