

CONCRETE BASICS

Hot Weather Reminders

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1. CONCRETE TEMPERATURES IN EXCESS OF 85°F

- a. Sets faster
- b. Loses slump faster
- c. Requires more water
- d. Shrinks sooner and more
- e. Mixing time has a dramatic effect on temperature

2. MATERIALS AND MIX DESIGNS

- a. Aggregates influence concrete temperature the most. For every 2°F of aggregate temperature the concrete temperature is affected 1°F. Watering coarse aggregate stockpiles can be an effective and relatively inexpensive way to lower concrete temperatures. Surface moisture may be increased and must be compensated for.
- b. The cement may be reduced by the use of fly ash, slag and, or admixtures.
- c. Care should be taken when determining the amount of supplementary cementitious materials and the dosage rate of admixtures, especially retarders. Too slow of setting will allow more time for the sun and wind to dry the surface and cause plastic shrinkage.
- d. When slump becomes an issue and the maximum allowable amount of water is being used, mid or high range water reducers should be considered.

3. DELIVERY

- a. Distance and time must be considered when designing the mix.
- b. The ordered yards per hour must be realistic.
- c. Waiting time must be kept to a minimum.
- d. Smaller loads may be a consideration.

4. ON THE JOB

- a. Enough people and equipment should be available to place the concrete as expeditiously as possible.
- b. Adequate labor must be available to keep up with faster setting concrete.
- c. Forms and all surfaces the concrete comes into contact with should be wet before placement.
- d. Aggregate bases should be saturated before placement.
- e. No surfaces should be allowed to accumulate water.
- f. Water should be available to mist the surface between finishing operations. At no time should water be finished into the surface of the concrete.
- g. The use of evaporation retardants should be considered during placement and finishing procedures.
- h. In severe conditions a wind break or cover over the concrete may be necessary.
- i. If joints are to be sawed, waiting till the next day may be too late.

5. CURING OPTIONS

- a. If moist curing is specified it must be continuous for the entire required time.
- b. Curing compounds should be applied immediately after the final finishing procedure has taken place.
- c. White reflective plastic may be used to cover the concrete immediately after the finishing procedure has taken place.



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