

July 1, 2018

### **Concrete Batching and Mixing in Cold and Hot Weather**

*Delete Subsections 701.4.4.2 and 701.4.4.3 in their entirety and replace them with the following:*

#### **701.4.4.2 Batching and Mixing in Cold Weather**

When batching and mixing concrete at atmospheric temperatures below 50°F as determined by the RCE, ensure measures are implemented to provide batched concrete with a temperature of at least 50°F when placed in the forms. Batch and mix concrete at atmospheric temperatures below 35°F only when permitted by the RCE. Implemented measures may include but are not limited to the following:

- A. Replacing a portion of the design mix water with heated water not exceeding 170°F at discharge into the mixer.
- B. Heating aggregates by steam, dry heat, or placing in heated mixing water. Any aggregate heating method or apparatus used shall heat the aggregates uniformly without creating hot spots.

Aggregates that contain ice, frost, or frozen particles shall not be used in the concrete mix. When either aggregates or water are heated above 100°F, combine aggregate and a portion of the water prior to adding cement to avoid flash set. Cement may be added with water or with a mixture of water and aggregate having a temperature less than 100°F.

Do not implement alternate measures to those listed above without prior approval by the RCE.

Recommendations provided in ACI 306R, Guide to Cold Weather Concreting maybe used to meet the requirements of this subsection with RCE approval.

The contractor retains the responsibility for producing concrete that meets the requirements of the plans, specifications, and special provisions.

#### **701.4.4.3 Batching and Mixing in Hot Weather**

When batching and mixing concrete in hot weather, ensure measures are implemented to prevent the concrete mix temperature from exceeding 90°F measured before placement in the forms, unless specified otherwise. For Class 2500, do not allow the concrete mix temperature to exceed 95°F. For mass concrete pours, do not allow the concrete mix temperature to exceed 80°F as measured at discharge into the forms. This requirement does not apply to concrete used in precast/prestressed members.

Implemented measures to meet mix temperature requirements may include but are not limited to the following:

- A. Using Type II cement.
- B. Sprinkling coarse aggregate with water to cool by evaporation.

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SUPPLEMENTAL SPECIFICATION

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- C. Using chilled mixing water or cubed/crushed ice to replace part of the mixing water. If using ice, ensure the ice melts before batch is discharged from mixing unit.
- D. Scheduling pours during cooler portions of the day.

Do not implement alternate measures to those listed above without prior approval by the RCE.

Recommendations provided in ACI 305R, Guide to Hot Weather Concreting may be used to meet the requirements of this subsection with RCE approval.

The contractor retains the responsibility for producing concrete that meets the requirements of the plans, specifications, and special provisions.