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Subject: Cold Weather Concreting, Curing Concrete Cylinders and Use of Accelerators

Importance: High

Please share with your inspectors and monitors.

As you work to wrap up construction for the season or prepare for winter construction – the question of cold weather concrete placement always come up.

COLD WEATHER CONCRETE PLACEMENT (Not 2401 or 2404):

Review your Contract to determine the specific requirements for cold weather concreting.

2301 - Concrete Pavement 2301.3.M.3

2406 – Approach Panels 2406.3.G.3

2521 – Walks – 2521.3.E.3

2531 – Concrete Curbing – 2531.3.G.3

2533 – Concrete Median Barrier – 2533.3.E.3

The language is the same for all 5 specs.

Here are the requirements for 2521 (Walks):

E.3 Protection Against Cold Weather

If the national weather service forecast for the construction area predicts air temperatures of 36 °F [1 °C] or less within the next 24 h and the Contractor wishes to place concrete, submit a cold weather protection plan.

Protect the concrete from damage, including freezing due to cold weather. Should any damage result, the Engineer will suspend operations until corrective action is taken and may subject the damaged concrete to 1503, "Conformity with Contract Documents," and 1512, "Unacceptable and Unauthorized Work."

E.3.a Cold Weather Protection Plan

Submit proposed time schedule and plans for cold weather protection of concrete in writing to the Engineer for acceptance that provides provisions for adequately protecting the concrete during placement and curing. Do not place concrete until the Engineer accepts the cold weather protection plans.

ASK YOUR CONTRACTORS TO SUBMIT COLD WEATHER PROTECTION PLANS AND THEN ENFORCE IT. THIS MAKES THE CONTRACTOR CONSIDER WHAT THEY ARE DOING AND HAVE A PLAN IN PLACE.

CONCRETE CYLINDER CURING:

Ensure all cylinders (Standard strength and field control) are protected from freezing. The specifications are no different than during any other time of the year, standard strength cylinders must still be cured and

maintained in an ambient temperature range from 60-80°F during initial and intermediate curing. At your weekly construction meeting, remind the Contractor about keeping the water from freezing in the moist curing environments.

USE OF ACCELERATING ADMIXTURES:

This is an excerpt from 2461.2.E, Concrete Admixtures:

Use of the following accelerating admixtures require approval of the Concrete Engineer, in conjunction with the Engineer, unless otherwise allowed in the Contract:

- (1) *Type C, Accelerating Admixture*
- (2) *Type E, Water Reducing and Accelerating Admixture*

The Engineer will permit the use of Type C or Type E accelerating admixtures when the following conditions exist:

- (1) ***The ambient temperature is below 36 °F***
- (2) ***An Engineer approved cold weather protection plan is in-place***
- (3) ***Cold weather protection materials are on-site and ready for use***

COLD WEATHER CONCRETE PLACEMENT (2401 or 2404):

Review your Contract to determine the specific requirements for cold weather concreting.

2401 - Concrete Bridge Construction 2401.3.G and 2401.3.G.5

2404 – Concrete Wearing Courses for Bridges 2404.3.D and 2404.3.E.4

Feel free to contact anyone in our office with questions and/or send in cold weather protection plans for our review.

Thanks,
Maria

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