

3460304 SPECIFICATION
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

Will Watts, P.E.
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Comments: (11-20-20 Internal)

If visible color variation is detected during the life of the Contract, the Engineer may require the colored concrete removal and replacement, at no cost to the Department.

Response: We reviewed Will Watts' comment on 346-4.3 and we want to propose the following modification. A new version of the spec is attached with changes highlighted.

Original sentence:

If visible color variation is detected during the life of the Contract, the Engineer may require the colored concrete removal and replacement, at no cost to the Department.

Final Modification:

346-4.3 Colored Concrete: When colored concrete is required, use coloring agents meeting the requirement of ASTM C979. Add coloring agents to the concrete mix in accordance with the manufacturer's recommendation.
Fabricate two 20 inch x 20 inch x 2 inch mockup panels of proposed design mix for Engineer's review and acceptance. Upon the demonstration of satisfactory mockup, the Engineer will approve the proposed colored concrete mix design.
Color shall be integral and consistent throughout the colored concrete surfaces.
Remove and replace colored concrete which exhibits color variation at no expense to the Department.

Ananth Prasad
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Comments: (11-30-20 Internal)

How do we get paid for the mock up panels?

Response: The price and payment will constitute full compensation for all work including volume of concrete for construction work and mockup panels. Mockup dimensions are 20 inch x 20 inch x 2 inch (Volume ~ 0.5 ft³).

Actions: No change is needed in the proposed specification.

Michael Davy
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Comments: (12-21-20 Industry)

When the memo initially implementing the Department's maximum strength criteria on RMX producers the note the Engineer to allow a lower total amount was in the specification. This proposed change appears to be removing it, which will further complicate the already extremely

difficult process of getting new mixes approved. Please consider leaving note 1 in Table 346-4.

Response: The presence of Note 1 allows unlimited lower amount of cementitious materials and concrete mix may not meet the required durability requirements of the specifications. Accordingly, it is necessary to have limits on the minimum amount of cementitious materials for each class of concrete, based on its environmental classification.

Actions: No change is needed in the proposed specification.

Kevin Hayden
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Comments: (12-30-20 Industry)

Under Section 346-6.4, language has been added regarding water being added to the concrete mix. One sentence says, "Include water missing from the water storage tanks upon arrival at the project site in the jobsite added water." What exactly does this mean? Does this mean that the missing water should be recorded for documentation purposes? If so, is there another specification that requires the measurement of the water tank before it leaves the plant, or at the jobsite site before water is emptied from the water tank?

Response: The language indicates that the missing water of the storage tank has been added to the delivered concrete. This language currently exists in 346-7 and it has been moved to 346-6.4. The details of water storage tank and its missing water are described in Subsection 9.2.11.3 Volume II Materials Manual, which reads:

"The water storage tanks on the truck shall be filled after reporting all water used and delivery ticket is printed, before leaving for the project site. Water missing from the water storage tanks upon arrival at the project site shall be included in the jobsite water added".

Actions: No change is needed in the proposed specification.

Joe Conover
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Comments: (1-6-21 Industry)

Why is the minimum cementitious content that has been reduced from the original Table 4, still being promoted to mixes higher than Class IV and above when there is no realistic way apparent of achieving the target slumps of Table 346-3 for said mixes at the required water/cementitious ratios using those minimum cementitious contents with water? Attached below are the gallons per yard calculations based on the proposed individual minimum cementitious contents and the required water/cementitious ratios. Reinforced Concrete Minimum Amount of Total Cementitious Materials lbs /H2o Gals per yard based on w/c Ratio Environment Extremely Aggressive Moderately Aggressive Slightly Aggressive Water/Cementitious ratio Class Concrete
I 470/30 470/30 470/30 0.53 I Pavement 470/28 470/28 470/28 0.50 II 470/30 470/30 470/30 0.53 II Bridge Deck 600/32 550/29 510/27 0.44 III 600/32 550/29 510/27 0.44 III Seal 470/30 470/30 470/30 0.53 IV 600/29 550/27 510/25 0.41 IV Drilled Shaft 600/29 550/27 510/25 0.41 V Special 600/27 550/24 510/22 0.37 V 600/27 550/24 510/22 0.37 VI 600/27 550/24 510/22 0.37

VII 600/27 550/24 510/22 0.37 Silica/Metak 600/25 550/23 510/21 0.35 UltraFine FlyA 600/22
550/20 510/18 0.30

Response: Table 346-4 requires the minimum amount of cementitious materials to ensure that all classes of concrete mix meet the required compressive strength and durability requirements of the specifications. The minimum is not a fixed value, the mix design can be prepared with any amount of cementitious materials above that minimum. The minimum amount of cementitious materials is not limited to class IV or higher, it is applicable to all concrete classes.

It is necessary to specify limit on the minimum amount of cementitious materials for each class of concrete, based on its environmental classification.

Actions: No change is needed in the proposed specification.

Joe Conover
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Comments: (1-6-21 Industry - second entry)

346-3.4 The proposed change from concrete application to concrete class is not an issue. However the previous changes to 346-4, has now been proven that some mixes higher than Class IV and using the the water cement ratio of table 346-3 will not result in a slump in the target range. Example: Class V Slightly Aggressive 510 lbs Cementitious, 22 gallons of water per yard at .37 water cementitious ratio will not achieve a slump 3" +- 1.5". On behalf of the CEMEX Florida Technical Team

Response: The comment is not related to the proposed specification changes. It is requested that CEMEX submit the details of their test data, findings, and proposed specification modifications to the State Materials Office (SMO) for review. Upon SMO's concurrence, it will be submitted to the Specification Office as a new proposed specification change.

Actions: No change is needed in the proposed specification.
