

9300000 MATERIALS FOR CONCRETE REPAIR
RESPONSES TO COMMENTS FROM INDUSTRY REVIEW

John Previte

Comments:

There are several instances of the following example error: (red to be added)

The tests for temperature, length change, and time of set shall be performed in accordance with 930-2.6.3 through 930-2.6.5.

OR

The temperature, length change, and time of set tests shall be performed in accordance with 930-2.6.3 through 930-2.6.5.

Response: Change made.

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Comments:

1. Suggestion for 930-2.6.1(b) below in black. This will make (b) consistent with (c) and (d) regarding use of the term “liquid” as the term “water” is not included in (c) or (d).

Use mixing liquid(s) specified by manufacturer’s recommendation for the liquid component.

930-2.6 Laboratory Specimen Preparation.

930-2.6.1 Concrete: Packaged, dry concrete material shall contain aggregate of which more than 5% by weight mass of the total mixture is retained on a 3/8 inch sieve. This material can be used for repairing concrete with a depth up to six inches. Any depth larger than this shall be repaired with Portland cement concrete meeting the requirements of Section 346. Mechanically mix the packaged, dry concrete material with water and/or mixing liquid. Prepare and test three test specimens for each age of all of the hardened tests and each level of mixing temperature in accordance with ASTM C 31.

(a) The sample of packaged dry material shall be any combination of whole packages yielding not less than 0.667 ft³ [0.0188 m³] of hardened material.

(b) Use only water, other liquid component or both based on the manufacturer’s recommendation. Measure the amount of liquid needed based on the quantity per bag stated in the instructions for use.

(c) Place the sample in the mixing machine and add the required amount of liquid. Start mixing immediately and continue mixing for the length of time indicated in the directions for use.

Response: Change made.

2. Section 930-3.1
Missing period at end or "...Contract Documents"
Response: Change made.

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Comments:

1-Subarticle 930-2.6 (e) : The proposed specification is allowing the concrete with the aggregate size of less than one inch. This will exclude the use of concrete mixes with the aggregate size of 57, which is commonly used in FDOT concrete. Also, the "nominal aggregate size" should be changed to maximum nominal aggregate size. The revised sentence should read: Use 4 in x 8 in test cylinders to mold concrete test specimens. The maximum nominal size of the aggregate in the concrete mix shall not exceed one inch.

Response: Change made.

2-Editorial: In a few locations of the proposed changes the "Portland cement" has been spelled with uppercase letter "P". This is a common terminology. Change it spell as "portland cement".

Response: Change made.

3-Tables I, II and V: For ASTM C 39 and C 109 at the bottom of the table the note shows "as applicable". The note should be expanded by mentioning that C 39 is for concrete and C 109 is for mortar.

Response: No change made. There are other cases beside ASTM C-39 and C109 where the "as applicable" asterisk is applied. The test methods are specific to which material. For example ASTM C 39 is for concrete and ASTM C109 is for cement mortars.

4-930 -3.4.1 and 930-3.4.2: Change the "rapid hardened material" to "rapid hardening material".

Response: Change made.

5-Table 3- NCHRP 12 -19A: Provide web address or reference to the report.

Response: Change not made. The address is likely to change during the life of the specification. Users will expect to be able to click on the link and be taken to the correct location. The Department can't guarantee a link in the specifications not in the direct control of the Specifications Office will not change during the life of the specification.

6-930-7.2.3: Change "89 gradation" to "size No. 89 coarse aggregate"

Response: Change made.

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Comments:

With regard to Section 930, our comments are as follows:

Section 930 2.6.2 Mortar

These materials may not be extended by the addition of aggregate in the field”, most commercially available concrete repair materials recommend or mandate aggregate extension for repair depths in excess of 1-3 inches. Proper aggregate extension utilizing approved coarse aggregate can offer improved performance for critical properties such as drying shrinkage.

Why has aggregate extension been disallowed and will this favor only a single supplier?

Response: No change made to mortar requirements. Additional language has been added to subarticle 930-2.6.1 for concrete to clarify that this is allowed for concrete material. Manufacturers may choose to submit a repair material without aggregate extensions as a mortar and with aggregate extensions as a concrete material. The concrete material will be tested based on the manufacturers’ recommendations.

Section 930-3.3 Physical Properties

What justification is there for requiring a 100% flow for “Rapid Hardening” materials and 80% flow for “Very Rapid Hardening”? Why would a minimum 80% not apply to both types of materials?

Response: No change made. It is understood that the early age properties for very rapid hardening repair materials would behave differently than rapid hardening materials under these test conditions.

Section 930-4 Materials for Repair Predominantly of Vertical Surfaces.

1. Are hand applied repair mortars acceptable for this work?

Response: Yes if they meet the requirements of 930-4.

2. Why is there a surface resistivity requirement for this section but not for horizontal repairs?

Response: This requirement is due to vertical surfaces will more likely be exposed to moderately to extremely aggressive environments while horizontal surfaces more likely will not.

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Comments:

It is my understanding that comments are being received through March 12, 2008 for Proposed Specification Change 9300000. Please see my comment below.

Per my telephone conversation with Mike Bergin, State Materials Office, on Friday, March 7, 2008, it is my understanding that Section 930, and the proposed modifications, are to be directly applicable to the suppliers of the concrete repair materials and not to the end users of the materials. For instance, repair materials supplier Quickrete would be required to comply with Section 930 in the process of acquiring acceptance on the QPL for its products. However, a contractor or pipe manufacturer that uses an approved QPL repair product would not be required to conduct the testing described in proposed Section 930-2.6. Please confirm these comments or state for the record.

Response: Requirements in 930 pertain to the materials and would apply to manufacturers. These requirements will not be applied to "end users". However, contractors and producers using the products will be required to comply with the Contract Document requirements for their specific contract.