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Comments:

**D9300000** -Section  
930-2.4 "Rejection" first sentence should not require that each bag that is destroyed is reported as a rejection. also 930-3.2.1 and 930-3.2.2 should state as indicated in Table 1

**RESPONSE: Agree, and change made to require notification for materials failing to meet the requirements of the spec.**

December 11, 2002

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Mr. Duane F. Brautigam, P.E.  
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Copolymer-modified mortar for concrete repair is not thermosetting or rapid hardening but nonetheless can achieve high compressive strength with excellent bonding capability. There are many such products available that could be included in **Section 930** if there was a set of specifications for compressive strengths that are typical for cure rates for copolymer- modified concrete. One possibility could be adding a column to **Table 1, Section 930.3.3**. (This is assuming that copolymer concrete modifiers are not covered by the columns in **Table 3** titled, "**Type 1 Polymer**" and "**Type 2 Polymer**".)

The requirement for "**working time**" in **Table 3** seems unclear as to how it would apply to copolymer-modified concrete. Does the requirement indicate a minimum of 12 minutes and a maximum of 20 minutes? For instance, copolymer-modified repair mortar mixed with our product has a working time of one hour. How would the working time specification of "**12 to 20 minutes**" apply to it? Also, it seems that a longer working time would allow for a wider scope of repairs.

Some copolymer concrete modifiers are single products packaged without Portland cement and sand mixtures. Portland cement has a shorter shelf life than most copolymer modifiers, and dry-mixing the

copolymer with the sand and Portland cement components can compromise the quality of the mortar and limit the scope of repair for any particular dry-mixed formula.

Could single-product copolymer concrete modifiers be included in **Section 930** to allow for dispersion of the copolymers in water and combining the resultant liquid with Portland cement and sand mixtures at prescribed volumetric ratios in the field? Our experience in concrete resurfacing and repair has been that this method allows for greater versatility and higher quality repair performance.

Regarding the specification change **Section 930-4 (Magnesium Ammonium Phosphate Concrete)**: Could there be a provision for mixing the dry cement compound with dry sand at a prescribed ratio in the field? This could result in affecting repairs at a lower cost to the state for any given project. It could also help assure that the expiration date of the dry component is based on the date the cement compound was manufactured instead of the date the cement compound was mixed with the respective quantity of aggregate and then repackaged.

Thank you for the opportunity to comment on the specification change.

Respectfully,

Chris Koebnick

**RESPONSE: This comment is beyond the scope of the change and is not being addressed by myself. It should be forwarded to SMO for consideration as a new specification.**

**Donald Bagwell**

12/09/2002 11:47 AM

To: Duane F Brautigam/CO/FDOT@FDOT

cc: Michael Bergin/SM/FDOT@FDOT, John H Owens/CO/FDOT@FDOT

Subject: Re: D9300000 Comments

Section 930-4 of the Referenced specification: Table 2 - change to give a range of set times in lieu of a single time. Actual results of test would have to be exactly 15 minutes as previously written with no tolerance. The range will allow that tolerance.

**RESPONSE: Table changed to show the 15 minutes is a minimum time for initial set.**

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Comments for 930 from Ghulam Mujtaba

1- In Sections 930-2.1 and 930-2.2 "water-to-powder ratio" has been used. In order to be consistent with other parts of the Specifications (Including 346 specification), use "water-to-cementitious Materials ratio".

**RESPONSE: agree, revised**

2- Section 930-3.5.1, last sentence, has indicated that use of 4 x 8 inch cylindrical molds is suggested. In lieu of suggestion, mention that 4 x 8

inch test cylindrical molds shall be used.

**RESPONSE: agree, revised**

3- Tables should include their titles.

**RESPONSE: agree, revised**

4- In a few places the word "weight" has been mentioned. The intent is "mass" not "weight".

**RESPONSE: disagree, weight is correct and consistent with other specifications**

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