

New Jersey Department of Transportation CORRECTIVE ACTION NOTICE

QUALITY MANAGEMENT SERVICES

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CAN No. CAN001

Approved

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Bureau(s) Affected: All CPM Units

Description of Problem(s):

Several Latex Modified Concrete (LMC) debonding problems have been reported on bridge decks that were patched with Duracal and then overlaid with LMC. This type of failure occurred on the Route 287 Section 2Q project along with several other projects. While the reason for premature deterioration of LMC bridge decks has not been determined, all indications are that the cause of the failure is related to the **incompatibility** of the LMC and Duracal materials and not construction practice. The Virginia Research Council (VRC) also has experienced similar problems on Virginia DOT projects using Duracal and LMC and subsequently, its use was discontinued. The VRC study concluded that debonding will occur when LMC is placed over Duracal. Another independent study was performed by Erlin, Hime Associates (EHA) who found their results similar to the results of the VRC.

Corrective Action Plan:

Based on the findings, Duracal, a rapid setting patch material, shall **not** be used on decks that are to receive low permeability overlays such as LMC or Microsilica Fume (MSF). The responsibility of each unit to carry out this action shall be as follows:

- **BUREAU OF QUALITY MANAGEMENT SERVICES**
Configuration Management Section
This office shall be responsible for making a baseline document change to Section 518.04 of Standard Input SI89 BRIDGE4 to ensure that Duracal shall **not** be used in conjunction with LMC or MSF on any future projects.
- **DIVISION OF DESIGN SERVICES**
Technical Specifications Unit
Specification Engineers shall be responsible for modifying Section 518.04 of the Supplementary Specifications on all current and future projects to ensure that this provision is in place. The following shall be added to **Section 518.04 - Repair of Concrete Deck:**
Duracal shall **not** be used in Bridge Deck Rehabilitation Projects using Latex Modified Concrete, Microsilica concrete or any impermeable protective overlay.
- **DIVISION OF PROJECT MANAGEMENT**
Prior to the revision of Section 518.04, *Project Managers* shall ensure that this provision is incorporated into the supplementary specifications on **all** projects where rapid-setting materials are to be used in conjunction with LMC or MSF.
- **DIVISION OF CONSTRUCTION SERVICES**
For all current projects under construction, *Resident Engineers* shall **not** allow the use of Duracal in conjunction with LMC or MSF.

Implementation: Immediately



Superseded