

New Jersey Department of Transportation
CORRECTIVE ACTION NOTICE

CAN No. 079

CAPITAL PROGRAM SUPPORT

Director: Walt McGrosky

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Approved: Walter McGrosky

Date: August 4, 2010

Subject:

Hot Mix Asphalt (HMA) mix compaction level and asphalt binder

Bureau(s) Affected: All Design Consultants, In-house Design Services, Maintenance Engineering and Operations, Construction Services and Materials

Description of Issue(s):

1. The "V" design compaction level for HMA was discontinued, with the release of the 2007 Standard Specifications for Road and Bridge Construction, based on very poor field and laboratory performance of those mixes with respect to mat density, longitudinal joints and cracking. Currently laboratory and field data, both locally and nationally, suggest that the "H" design compaction level mixes are also performing poorly. However, due to the heavy traffic volumes/loads and other factors in NJ, more data needs to be collected and analyzed to determine if a permanent change to the 2007 Standard Specifications for Road and Bridge Construction is necessary.
2. Over the past several years the Department has increased the usage of SB/SBS polymer modified asphalt for PG 76-22 binder in HMA. In some cases the PG 76-22 has been specified when a less expensive grade is adequate for the project conditions. In 2008 the industry had experienced a shortage of polymer which forced the Department to reevaluate its use on some projects and in some cases eliminate it from the project. At that time the Department issued a procedure to evaluate existing projects in an attempt to most expeditiously progress the NJDOT's program without adverse effect on the quality and performance of the HMA. In order to ensure continued cost effectiveness, quality and performance we will clarify when it is appropriate to specify PG 76-22 in HMA courses.

Corrective Action Plan:

1. The Department will discontinue the use of the "H" design compaction level HMA mixes for an undetermined period of time to collect and analyze data and complete current research studies. Once analysis has been completed, the Department will make a Baseline Document Change to the 2007 Standard Specifications for Road and Bridge Construction, if necessary. In the interim, when selecting mixes for pavement design, designers should only select "M" and "L" design compaction levels when specifying HMA mixes according to Sections 401 and 902.02 of the 2007 Standard Specifications for Road and Bridge Construction. For design ESALs (Equivalent 18 kip Single Axle Loads) less than 1 million use "L" design compaction level for HMA mixes. For design ESALs between 1 million and 15 million use "M" design compaction level for HMA mixes. For design ESALs greater than 15

million, consult with NJDOT Pavement Design unit for the appropriate treatment.

2. Designers should use PG 76-22 in HMA surface course for pavements with greater than 10 million ESAL's. Use PG 76-22 in HMA surface and intermediate courses for pavements with greater than 30 million ESAL's. It may be appropriate in some cases for use in HMA base course when the road needs to be opened to traffic in a short time period. Do further evaluation/analysis if existing pavement exhibits rutting of 1/2" depth or greater. Any questions or concerns should be directed to the NJDOT Pavement Design unit.

Superseded

Implementation: Immediate