

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 908

PERFORMANCE GRADE (PG) BINDER REQUIREMENTS

November 7, 2000

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**908.01 General.** The requirements of AASHTO MP1-98 shall apply, deviations from these are as follows.

PG Binders with the suffix "M" (e.g., PG 70-22M, PG 76-22M) shall meet the requirements for a PGM Binder.

For this specification, an independent laboratory shall not be owned or operated, in whole or part, by the binder supplier, Contractor, or affiliates of either.

**908.02 Materials and Manufacture.** The requirements of the AASHTO MP1-98 "Materials and Manufacture" Section shall be completely replaced with the following:

5.1 The PG Binder shall be an asphalt cement from the refining of crude petroleum, or combination of asphalt cements from the refining of crude petroleum, or asphalt cements and suitable liquid from the refining of crude petroleum, and possible organic modifiers for performance enhancement. Material from the crude refining stream will be considered neat. Liquid from crude refining may be used for adjustments, but shall not be used for the purpose of substitution of crude refined asphalt cement in a PG Binder. In the event of a failure investigation where binders exhibit unusual properties a supplier may be requested by the Laboratory to supply information about the makeup of a PG Binder. Failure to cooperate will mean removal from Supplement 1032 certification.

5.2 A modifier may be any organic material of suitable manufacture that is proven compatible with asphalt cement (does not separate appreciably in routine storage), and

that is dissolved, dispersed or reacted in asphalt cement to improve its performance. Performance enhancement is defined as a decrease in the temperature susceptibility of the asphalt cement while maintaining or improving desirable properties in a neat asphalt cement such as coatability, adhesiveness and cohesiveness. The use of modifiers shall be limited to 6.0 percent by PG Binder weight.

5.3 The use of previously used materials must be approved by the Department. Since no standard test procedures exist for reprocessed materials (and original tests were not developed with the use of such materials in mind), appropriate test methods may be chosen by the Department for review. Department approval does not relieve the binder supplier from full responsibility for content and use of any previously used material nor guarantee suitable performance enhancement as defined above. The detected presence in a PG Binder sample of any unapproved previously used material will mean immediate removal from Supplement 1032 certification. Approved reprocessed materials will be limited to 6.0 percent by PG Binder weight.

5.4 The PG Binder shall be homogeneous, free from water and deleterious materials, and shall not foam when heated to 350F (175C). The asphalt binder (before modification or after modification if liquid modifier used) shall be proven fully compatible with a negative result by means of the Spot Test per AASHTO T 102 using standard naphtha solvent. If standard naphtha shows a positive result, a retest using 35 percent Xylene/ 65 percent Heptane (volume) may be used.

5.5 The PG Binder shall be at least 99.0 percent soluble as determined by ASTM D 5546 or D 2042. Any insoluble component shall be substantially free of fibers and have discrete particles less than 75µm.

5.6 Flash point shall be 500F (260C) min. Mass loss on RTFO of final PG grade binder shall be 0.5 percent max.

5.7 PG 58-28 shall have a minimum Viscosity (ASTM D2171 @ 60C) of 800 poise and PG 64-22 shall have a Penetration ( ASTM D5) between 55 and 75.

5.8 Direct Tension testing is not required, unless otherwise required in this specification.

**908.03 Performance.** Should excess fat spots, regular random areas of flushing, or excess drainage occur on a project and not be attributable to over rolling, plant operation, or mix quality compared to the JMF, the PG Binder will be rejected. This rejection includes any PGM Binders with an incompatible polymer or that have been improperly handled. The Contractor will not be allowed to use any of the rejected PG Binder. Correction of problem areas will be at the District's discretion depending on the problem severity, but if an unsafe condition exists, the area in question will be removed and replaced. Before work is resumed, the Contractor or PG Binder supplier shall show to the Laboratory the material