

properties and compatibility of another PG Binder, by reporting actual test data, and that proper binder production equipment is in use.

The Contractor has a responsibility to ensure traffic is not released early on the mat, unless overridden by the Department. This Contractor responsibility includes allowing sufficient cooling time when night paving before morning rush hour release of traffic. Should traffic be on the mat in a manner leading to flushing or excess surface/tire adhesion and tracking of binder, the mat area in question shall be evaluated for removal and replacement or repair. Any removal and replacement or repair shall be at the Contractor's expense, unless the responsibility was overridden by the Department.

**908.04 Storage.** PG Binder storage shall be in accordance with Supplement 1010, with the following additions:

A separate storage tank shall be used whenever a Contractor is providing a binder other than a PG Binder to customers other than the Department (excepting winter carryover work) or switching between different PG Binders because of alternating mix types.

When the Contractor switches between two different binder grades and is going to use the same storage tank, the storage tank shall be at least 90 percent empty by tank height. When the Contractor is switching to a PGM Binder or a PG Binder used to make a PGM Binder, the storage tank shall be at least 95 percent empty by tank height.

PGM Binder shall not be stored at the asphalt concrete mixing plant over the winter. No PG Binder to be used in producing a PGM Binder at the asphalt concrete mixing plant will be stored at the facility over the winter. SBR polymer shall be stored in a heated area over winter, but shall not exceed supplier requirements.

The Monitoring Team shall be notified before the delivery of the first load of each type of PG Binder with sufficient lead time to allow for verification of the storage tank condition and if the storage tank meets handling requirements of the binder supplier. The Monitoring Team may sample the first storage tank load or give the Contractor permission to proceed with no tank verification.

**908.050 Requirements for PGM Binder.** A PGM Binder shall meet the requirements of Table A and shall be obtained through modification of a non-oxidized, neat asphalt binder by using a styrene butadiene latex rubber compound (SBR polymer) or a styrene butadiene styrene polymer block copolymer (SBS polymer). The polymer supplier shall certify to the refiner and Contractor that the polymer used meets a minimum 68 percent by weight butadiene content. SBS polymer modification shall be performed prior to shipment to the asphalt concrete mixing plant (preblend). SBR polymer modification shall be performed at the asphalt concrete mixing plant (postblend) or prior to shipment to the asphalt concrete mixing plant (preblend).

For each project, the PGM Binder supplier shall give the Contractor a handling guide

specifying temperature, circulation, shelf life, and other requirements for assuring the PGM Binder will perform as desired. This handling guide will be given to the Monitoring Team and be available in the plant control room and plant laboratory. If PGM Binder is retained at the asphalt concrete mixing plant for more than two weeks before use or beyond the supplier recommended shelf life, whichever is less, a top and bottom sample test (material property difference between samples taken from the top and bottom of the storage tank) shall be performed by the Laboratory on samples retrieved by the Contractor at the District's direction and material on hand shall not be used until approved.

**908.051 Sampling of PGM Binder.** The Contractor shall take two 1 quart (1 liter) binder samples from the first transport truck load, before incorporation into the storage tank. The Contractor will label the samples with binder type, supplier, project number and date and retain them in the plant laboratory for future reference by the Department.

In addition to the above sampling requirements, twice during each project (once if project has less than 3000 tons (3000 t) of mix), the Monitoring Team will direct the Contractor to take two 1 quart (1 liter) samples of a PGM Binder, except when SBR polymer is incorporated into batch plants. In this case the base binder and SBR polymer shall be sampled and stored independently. Samples shall be taken from the binder line between the last piping 'tee' and inlet into the plant. They shall be labeled and handled as above. All samples shall be held after project completion until the District Engineer of Tests (DET) collects or releases them.

**908.052 Mix Design for PGM Binder.** The PGM Binder supplier, as well as the polymer type, shall be identified on the Job Mix Formula (JMF) submittal. A change in binder or polymer source will require a redesign. The PGM Binder shall be graded, except for Direct Tension, and provide the actual pass temperatures confirming the grade requirement. All dated data shall be reported with the JMF submittal. In addition to the PG Binder grading, the dated test results for the requirements of Table A shall be reported. All data shall be neatly summarized on one page. No data shall be more than two months old. If SBR polymer is added at the asphalt concrete mixing plant, the JMF shall contain data from the SBR polymer supplier for total solids (percent) and ash (percent) according to the 702.14. As well, the submittal shall contain the target amount of SBR polymer greater than or equal to 3.5 percent to achieve the properties specified. A letter of certification from the polymer supplier verifying percent butadiene in the SBS or SBR polymer shall be included in the JMF submittal.

Each JMF submittal shall report results of temperature-viscosity testing for mixing and compaction temperatures performed according to Asphalt Institute Manual SP-2. Supplier recommended temperatures may be used in lieu of the Asphalt Institute Manual SP-2 temperatures, but the temperature-viscosity results must still be reported.

A maximum of 10 percent reclaimed asphalt concrete pavement or reclaimed bituminous aggregate base may be used in accordance with 401.031, except it shall be included in the JMF. At no time shall the amount of reclaimed asphalt concrete pavement or reclaimed