

GROUND TIRE RUBBER (GTR) MODIFIED ASPHALT BINDER (CBM)

Effective: September 1, 2019

Add the following to the end of article 1032.05 of the Standard Specifications:

“(c) Ground Tire Rubber (GTR) Modified Asphalt Binder. The asphalt binder shall meet the requirements of AASHTO M 320, Table 1 “Standard Specification for Performance Graded Asphalt Binder”. Notes 1 and 2 should be observed for testing clarifications. Air blown asphalt will not be allowed. GTR (Note 3) shall be blended by dry unit weight with a PG binder at the terminal in accordance with the following table.

Starting Asphalt Binder Grade	GTR %	Final GTR Asphalt Binder Grade
PG 58-28	10-14	GTR 64-28
PG 64-22	10-14	GTR 70-22
SBS PG 64-28	10-14	GTR 70-28
SBS PG 70-22	10-14	GTR 76-22
SBS PG 70-28	10-14	GTR 76-28

The base asphalt binders shall meet the applicable requirements of Article 1032.05(a) and 1032.05(b). Compatible polymers may be added during production. The GTR modified asphalt binder shall meet the requirements of the following table.

Test	Asphalt Grade GTR	Asphalt Grade GTR	Asphalt Grade GTR	Asphalt Grade GTR	Asphalt Grade GTR
	64-28	70-22	70-28	76-22*	76-28*
Elastic Recovery, ASTM D 6084, Procedure A (sieve waived) @ 77 °F, (25 °C), aged, ss, 100 mm elongation, 5 cm/min., cut immediately, %, min.	60	60	60	70	70

Note 1. For testing of Rotational Viscosity according to AASHTO T 316, use spindle S27 to allow for GTR particle size.

Note 2. For testing of Original Dynamic Shear and RTFO Dynamic Shear according to AASHTO T 315, use a gap of 2 mm to allow for GTR particle size.

Note 3. GTR shall be produced from processing automobile and/or truck tires by the ambient grinding method or micronizing through a cryogenic process. GTR shall not exceed 2 mm (1/16 in.) in any dimension and shall not contain; free metal particles, moisture that would cause foaming of the asphalt, or and other foreign materials. A mineral powder (such as talc) meeting the requirements of AASHTO M 17 may be added, up to a maximum of four percent by weight of GTR to reduce sticking and caking of the GTR particles. When tested in accordance with Illinois modified AASHTO T 27 “Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates” or AASHTO PP 74 “Standard Practice for Determination of Size and Shape of Glass Beads

Used in Traffic Markings by Means of Computerized Optical Method”, a 50 g sample of the GTR shall conform to the following gradation requirements:

Sieve Size	Percent Passing
1.18 mm (No. 16)	100
600 μm (No. 30)	95 ± 5
300 μm (No. 50)	> 20

* Note 4. When GTR 76-22 or GTR 76-28 is specified for mixture IL-4.75, the elastic recovery shall be a minimum of 80.”

Revise 1030.02(c) of the Standard Specifications to read:

“(c) RAP Materials (Note 5)1031”

Add the following note to 1030.02 of the Standard Specifications:

“Note 5. When using reclaimed asphalt pavement and/or reclaimed asphalt shingles, the maximum asphalt binder replacement percentage shall be equivalent to percentages specified for SBS/SBR polymer modified mixes.”

Add the following to the end of Note 1. of article 1030.03 of the Standard Specifications:

“A dedicated storage tank for the Ground Tire Rubber (GTR) modified asphalt binder shall be provided. This tank must be capable of providing continuous mechanical mixing throughout and/or recirculation of the asphalt binder to provide a uniform mixture. The tank shall be heated and capable of maintaining the temperature of the asphalt binder at 300 °F to 350 °F (149 °C to 177 °C). The asphalt binder metering systems of dryer drum plants shall be calibrated with the actual GTR modified asphalt binder material with an accuracy of ±0.40 percent.”