

203-14.2.1 Tire Rubber Modified Paving Asphalt. Tire rubber modified paving asphalt shall consist of paving asphalt containing ground scrap tire rubber. The scrap tire rubber shall be incorporated into the paving asphalt such that a smooth and homogeneous composition results. Tire rubber modified paving asphalt shall be designated as MAC-10TR or MAC-15TR and conform to Table 203-14.2.1(A).

TABLE 203-14.2.1 (A)

Properties	Test Method No.	MAC-10TR	MAC-15TR
TESTS ON ORIGINAL ASPHALT			
Minimum Recycled Whole Scrap Tire Rubber Content, %	CERTIFICATION	10.0	15.0
Penetration, at 25°C, 0.1 mm, 100 grams, 5 seconds	ASTM D5	40-60	40-60
Penetration, at 4°C, 0.1 mm, 200 grams, 60 seconds, Min.	ASTM D5	20	15
Dynamic Viscosity, at 140°F (60°C), Poise, Min.	ASTM D2171	5000	5000
Kinematic Viscosity, at 275°F (135°C), Centistokes, Max.	ASTM D2170	1000	1200
Flash Point, Cleveland Open Cup, °F (°C), Min.	ASTM D92	450 (232)	450 (232)
Softening Point, °F (°C), Min.	ASTM D36	127 (53)	127 (53)
Solubility in trichloroethylene, %, Min.	ASTM D2042	97.5	97.5
TESTS ON RESIDUE FROM RTFO PROCEDURE			
Penetration, at 25°C, 0.1 mm, 100 grams, 5 seconds	ASTM D5	20-40	20-40
Penetration, at 4°C, 0.1 mm, 200 grams, 60 seconds, Min.	ASTM D5	14	10
Dynamic Viscosity, at 140°F (60°C), Poise, Min.	ASTM D2171	20,000	20,000
Kinematic Viscosity, at 275°F (135°C), Centistokes, Max.	ASTM D2170	1500	2000
% of Original Penetration, at 25°C, 0.1 mm, 100 grams, 5 seconds, Min.	ASTM D5	50	50

The Contractor shall submit in accordance with 2-5.3 a Certificates of Compliance conforming to 4-1.5.

203-14.2.2 Aggregates. Aggregates shall conform to 203-6.3.2

203-14.2.3 Mineral Filler. Mineral filler shall conform to 203-6.3.3

203-14.3 Composition and Grading. TRMAC will be designated by class and tire rubber content for dense-graded mixes (i.e., “C2-TRMAC-10”); and by tire rubber content and type for gap-graded mixes (i.e., “TRMAC-15-GG-C”).

The composition and grading of dense-graded mixes shall conform to 203-6.4.3.

Gap-graded mixes shall conform to the composition requirements shown in table 203-14.3 (A) and the requirements for the grading of the combined aggregates shown in Table 203-11.3(A).

TABLE 203-14.3 (A)

Properties	Requirements
% MAC-10TR or MAC-15TR by Weight of Dry Aggregate*	5.0 – 7.0
Air Voids % California Test 367	3 – 6
Stabilometer Value per California Test 304 and 366, Min.	23
Voids in Mineral Aggregate Percent, Min.	16

* Once the percent MAC-10TR or MAC-15TR is determined by the mix design, the production tolerance shall be $\pm 0.5\%$ as determined by California Test Method 362, 379, or 382

203-14.4 Mix Designs. Mix Designs for dense-graded mixes shall conform to 203-6.2. Mix Designs for gap-graded mixes shall conform to 203-6.2 and the composition and grading requirements specified in 203-14.3.

203-14.5 Aggregate Storing, Drying, and Screening. Aggregate storing, drying, and screening shall conform to 203-6.5

203-14.6 Proportioning. Proportioning shall conform to 203-6.6

203-14.7 Mixing. Mixing shall conform to 203-6.7 except that the temperature of the aggregates at the time of adding tire rubber modified paving asphalt shall not exceed 350°F (176°C) nor be less than 300°F (149°C).

203-14.8 Storage. Storage shall conform to 203-6.8.

203-14.9 Miscellaneous Requirements. Miscellaneous requirements shall conform to 203-6.9.

203-14.10 Acceptance. Acceptance of plant produced mixtures will be based upon gradation, tire rubber modified paving asphalt content, and minimum stability values specified in Table 203-14.3(A). Air voids will not be used as an acceptance criteria. Sampling and S-value average requirements shall conform to 203-6.4.1.