

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt** (revised 2010 *Standard Specifications* Section 39) (1 of 6)

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>AGGREGATE: All Types of HMA</b>						
Gradation (Sieve Analysis) (see Note 2)	AASHTO T27, California Test 105, California Test 384	Combined six 20-lb canvas bags (see Note 3)  or Batch 30 lb (proportioned per bin percentages)	HMA plant	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	
Sand Equivalent	AASHTO T176		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	Not required for OGFC
Percent Crushed Particles (Course)	AASHTO T335		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 25,000 tons or less of paving	
Percent Crushed Particles (Fine)	AASHTO T335		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 25,000 tons or less of paving	
LA Rattler (500 Revolutions)	AASHTO T96		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 50,000 tons or less of paving	
LA Rattler (100 Revolutions)	AASHTO T96		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 50,000 tons or less of paving	
Fine Aggregate Angularity	AASHTO T304, Method A		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 50,000 tons or less of paving	Not required for OGFC
Flat and Elongated Particles	ASTM D4791		HMA plant or before lime treatment	1 for each 750 tons, 1 per day minimum	Production start-up evaluation, and minimum 1 random for every 50,000 tons or less of paving	
<b>ASPHALT BINDER</b>						
Various properties based on asphalt type used (see <i>Standard Specifications</i> Section 92)	See <i>Standard Specifications</i> Section 92	1-qt wide-mouth can	Asphalt feed line connecting the plant storage tanks	1 per day of HMA production	1 per day of HMA production; see Remarks	Certificate of compliance required for each shipment; if asphalt binder source is not on approved list, sample and test asphalt before use

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt** (revised 2010 *Standard Specifications* Section 39) (2 of 6)

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>ASPHALT RUBBER BINDER</b>						
Asphalt Rubber Binder Properties	See <i>Standard Specifications</i> Section 39-3.01D(3)(b)	1-qt wide-mouth can	Asphalt feed line connecting to the HMA plant	1 every lot	Production start-up evaluation and 1 random per 5 samples	Certificate of compliance required for each lot
Asphalt Rubber Binder Viscosity	ASTM D7741	1-gal wide-mouth can	Asphalt feed line connecting to the HMA plant	1 every lot	1 every lot; see Remarks	For safety, engineer may witness contractor perform test
Base Asphalt Binder Properties	See <i>Standard Specifications</i> Section 92	1-qt wide-mouth can	Asphalt storage tank	Each shipment	Production start-up evaluation and 1 random per 5 samples	Certificate of compliance required for each shipment; if asphalt binder source is not on approved list, sample and test asphalt before use
Asphalt Modifier Properties	ASTM D445 ASTM D92 ASTM D2007	1-qt wide-mouth can	Sample port on tanker truck	Each shipment	1 random per project	
Crumb Rubber Modifier (CRM) Properties	California Test 208, California Test 385, ASTM D297	CRM scrap tire: Two 2.5-lb in gallon zip-lock bags CRM high natural: Two 2.5-lb in gallon zip-lock bags	CRM bulk bag	Each shipment	1 random per project	

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt** (revised 2010 *Standard Specifications* Section 39) (3 of 6)

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>HOT MIX ASPHALT: Type A</b>						
Moisture Content	AASHTO T329	10 lb, sealed metal container	Loose mix from behind the paver (see Note 4)	Production start-up evaluation, and minimum 1 per project	Production start-up evaluation, and minimum 1 per project during paving	Samples should be tested within 1 hour of sampling
Asphalt Binder Content	AASHTO T308, Method A	60 lb (see Note 5) (8x8x3=8 boxes, 8x8x4=6 boxes, 8½x8½x4½=4 boxes)	Loose mix from behind the paver (see Note 4)	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	
Maximum Theoretical Density	AASHTO T209		Loose mix from behind the paver (see Note 4)	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. 1 random test per day of paving	
Air Void Content	AASHTO T269	100 lb (see Note 5) (8x8x3=12 boxes, 8x8x4=10 boxes, 8½x8½x4½=8 boxes)	Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Voids in Mineral Aggregate	SP-2 Asphalt Mixture Volumetrics		Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Dust Proportion	SP-2 Asphalt Mixture Volumetrics		Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Hamburg Wheel Tracker	AASHTO T324	70 lb (see Note 5) (8x8x3=9 boxes, 8x8x4=7 boxes, 8½x8½x4½=6 boxes)	Loose mix at plant	Production start-up evaluation, 1 every 10,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 10,000 tons or less of paving	
Moisture Susceptibility	AASHTO T283	140 lb (see Notes 5 & 6) (8x8x3=18 boxes, 8x8x4=15 boxes, 8½x8½x4½=12 boxes)	Loose mix at plant	Production start-up evaluation, 1 every 50,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 50,000 tons of paving	Test for both dry strength and wet strength
<b>HOT MIX ASPHALT: With RAP/RAS</b>						
Binder Recovery	AASHTO T164 ASTM D1856	10 lb (8x8x3=1 box, 8x8x4=1 box, 8½x8½x4½=1 box)	Loose mix from behind the paver <sup>4</sup>	Production start-up evaluation, 1 every 25,000 tons of paving	1 random for every 25,000 tons or less of paving	

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt** (revised 2010 *Standard Specifications* Section 39) (4 of 6)

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>RUBBERIZED HOT MIX ASPHALT: Gap Graded</b>						
Moisture Content	AASHTO T329	10 lb, sealed metal container	Loose mix from behind the paver (see Note 4)	Production start-up evaluation, and minimum 1 per project	Production start-up evaluation, and minimum 1 per project during paving	Samples should be tested within 1 hour of sampling
Asphalt Binder Content	AASHTO T308, Method A	60 lb (see Note 5) (8x8x3=8 boxes, 8x8x4=6 boxes, 8½x8½x4½=4 boxes)	Loose mix from behind the paver (see Note 4)	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. 1 random test per day of paving	
Maximum Theoretical Density	AASHTO T209		Loose mix from behind the paver (see Note 4)	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	
Air Void Content	AASHTO T269	100 lb (see Note 5) (8x8x3=12 boxes, 8x8x4=10 boxes, 8½x8½x4½=8 boxes)	Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Voids in Mineral Aggregate	SP-2 Asphalt Mixture Volumetrics		Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Dust Proportion	SP-2 Asphalt Mixture Volumetrics		Loose mix from behind the paver (see Note 4)	Production start-up evaluation, 1 every 25,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 25,000 tons of paving	
Hamburg Wheel Track	AASHTO T324	70 lb (see Note 5) (8x8x3=9 boxes, 8x8x4=7 boxes, 8½x8½x4½=6 boxes)	Loose mix at plant	Production start-up evaluation, 1 every 10,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 10,000 tons or less of paving	
Moisture Susceptibility	AASHTO T283	140 lb (see Notes 5 & 6) (8x8x3=18 boxes, 8x8x4=15 boxes, 8½x8½x4½=12 boxes)	Loose mix at plant	Production start-up evaluation, 1 every 50,000 tons of paving	Production start-up evaluation, and minimum 1 random for every 50,000 tons of paving	Test for both dry strength and wet strength

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt** (revised 2010 *Standard Specifications* Section 39) (5 of 6)

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>OPEN GRADED FRICTION COURSE (OGFC)</b>						
Asphalt Binder Content	AASHTO T308, Method A	20 lb (see Note 5) 4,1-gal metal containers with friction lids	Loose mix from behind the paver (see Note 4)	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	
Moisture Content	AASHTO T329	10 lb, sealed metal container	Loose mix from behind the paver (see Note 4)	Production start-up evaluation, and minimum 1 per project	Production start-up evaluation, and minimum 1 per project during paving	Samples should be tested within 1 hour of sampling
<b>BONDED WEARING COURSE: Gap Graded (BWC-G) (see Note 7)</b>						
Asphalt Binder Content	AASHTO T308, Method A	20 lb (see Note 5) 4,1-gal metal containers with friction lids	Loose mix at plant	1 for each 750 tons, 1 per day minimum	Production start-up evaluation. Minimum 1 per day of paving	
Moisture Content	AASHTO T329	10 lb, sealed metal container	Loose mix at plant	Production start-up evaluation, and minimum 1 per project	Production start-up evaluation, and minimum 1 per project during paving	Samples should be tested within 1 hour of sampling
<b>PAVEMENT DENSITY</b>						
Density of cores	California Test 375	4 or 6 inch cores	Final layer, cored to the specified total paved thickness	1 for each 250 tons	1 for each 250 tons	Density applies to HMA thickness of 0.15 ft or greater

**Table 6-1.12. Materials Acceptance Sampling and Testing Requirements:  
Hot Mix Asphalt (2010 Standard Specifications Section 39) (6 of 6)**

Test	Test Method	Sample Size & Container Type	Sampling Location (See Note 1)	Sampling Frequency	Acceptance Test Frequency	Remarks
<b>PAVEMENT SMOOTHNESS</b>						
Straightedge	N/A	N/A	Pavement surface	Entire final surface	Entire final surface; see Remarks	Areas exempt from Inertial Profiler
Inertial Profiler for Mean Profile Index and Areas of Localized Roughness	California Test 387 AASHTO R56 & AASHTO R57	Each 0.1 mile	Pavement surface	Entire final surface	Entire final surface; see Remarks	Entire final surface excluding specified areas requiring straightedge. May use contractor-furnished profiles provided that engineer witnessed profile testing
<b>TACK COAT</b>						
Asphalt Binder	Based on asphalt type used (see <i>Standard Specifications</i> Section 92)	1-qt wide-mouth sealed metal container	Spray bar on asphalt distributor truck	Each truck load	1 random per project	
Asphaltic Emulsion	Based on emulsion type used (see <i>Standard Specifications</i> Section 94)	1-gal plastic jug	Spray bar on emulsion distributor truck	Each truck load	1 random per project	
Spread Rate	California Test 339	N/A	Pavement	N/A	As necessary for verification of tack coat spread rate	

Notes:

1. See California Test 125 for sampling procedures.
2. When using RAP, RAS or RAP/RAS, adjust gradation by the correction factor determined under California Test 384.
3. Store three 20-lb canvas bag for dispute resolution.
4. Sampling HMA behind the paver is the preferred location. You may also take samples from the windrow, production plant, or truck.
5. Sample sizes are based on split samples—one sample for acceptance testing, and one for dispute resolution. Store one-half of the boxes or cans for dispute resolution.
6. Contractor ships directly to district material laboratory.
7. For BWC using RHMA-G, RHMA-O, or HMA-O, sampling and testing must comply with requirements for RHMA-G, RHMA-O, or HMA-O.