

**Table 6-1.12 Materials Acceptance Sampling and Testing Requirements:**

**Hot Mix Asphalt (2010 Standard Specifications Section 39) (1 of 6)**

| Test                                       | Test Method   | Sample  |                                    |  |  |                        |
|--|---|---|------------------------------------|--|--|------------------------|
| Gradation <sup>2</sup><br>(Sieve Analysis) | AASHTO T27<br>California Test 105,<br>California Test 384 | Combined six 20-lb canvas bags <sup>3</sup><br><br>or<br>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 D 4791   |   | 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 |                        |

**Table 6-1.12 Materials Acceptance Sampling and Testing Requirements:**

**Hot Mix Asphalt** (2010 *Standard Specifications* Section 39) (2 of 6)

| Test   | Test Method  | Sample Size & Container Type   | Sampling Location <sup>1</sup>                       | Sampling Frequency          | Acceptance Test Frequency                                 | Remarks  |
|--|--|--|--|-----------------------------|---|--|
| <b>ASPHALT BINDER</b>  |  |  |  |                             |   |  |
| Various properties based on asphalt type used (see <i>Standard Specification</i> Section 92) | See <i>Standard Specification</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 |
| <b>ASPHALT RUBBER BINDER</b>   |  |  |  |                             |   |  |
| Asphalt Rubber Binder Properties   | See <i>Standard Specification</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 Specification</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<br>ASTM D92<br>ASTM D 2007                     | 1-qt wide-mouth can  | Sample port on tanker truck                          | Each shipment               | 1 random per project                                      |  |
| Crumb Rubber Modifier (CRM) Properties   | California Test 208<br>California Test 385<br>ASTM D297  | CRM scrap tire:<br>Two 2.5-lb in gallon zip-lock bags<br>CRM high natural:<br>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 (2010 Standard Specifications Section 39) (3 of 6)**

| Test                                | Test Method                      | Sample Size & Container Type  | Sampling Location <sup>1</sup>               | Sampling Frequency  | Acceptance Test Frequency  | Remarks  |
|-------------------------------------|----------------------------------|---|--|---|--|--|
| <b>HOT MIX ASPHALT MIX – Type A</b> |                                  |   |  |   |  |  |
| Moisture Content                    | AASHTO T329,                     | 10 lb, sealed metal container   | Loose mix from behind the paver <sup>4</sup> | 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 <sup>5</sup><br>(8x8x3=8 boxes<br>8x8x4=6 boxes<br>81/2x81/2x41/2=4 boxes)                    | Loose mix from behind the paver <sup>4</sup> | 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 <sup>4</sup> | 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 <sup>5</sup><br>8x8x3=12 boxes<br>8x8x4=10 boxes<br>81/2x81/2x41/2=8 boxes)                  | Loose mix from behind the paver <sup>4</sup> | 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 <sup>4</sup> | 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 <sup>4</sup> | 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                      | 70-80 lb<br>60 lb <sup>5</sup><br>(8x8x3=9 boxes<br>8x8x4=7 boxes<br>81/2x81/2x41/2=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                      | 140-160 lb<br>60 lb <sup>5,6</sup><br>(8x8x3=18 boxes<br>8x8x4=15 boxes<br>81/2x81/2x41/2=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> |                                  |   |  |   |  |  |

| Test            | Test Method               | Sample Size & Container Type  | Sampling Location <sup>1</sup>               | Sampling Frequency  | Acceptance Test Frequency                        | Remarks |
|-----------------|---------------------------|---|--|---|--|---------|
| Binder Recovery | AASHTO T164<br>ASTM D1856 | 10 lb <sup>5</sup><br>(8x8x3=3 boxes<br>8x8x4=3 boxes<br>8 1/2x8 1/2x4 1/2=4 boxes) | 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 |         |

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**Table 6-1.12 Materials Acceptance Sampling and Testing Requirements:**

**Hot Mix Asphalt (2010 Standard Specifications Section 39) (4 of 6)**

| Test  | Test Method                      | Sample Size & Container Type   | Sampling Location <sup>1</sup>               | 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 <sup>4</sup> | 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 <sup>5</sup><br>(8x8x3=8 boxes<br>8x8x4=6 boxes<br>8 1/2x8 1/2x4 1/2=4 boxes)                    | Loose mix from behind the paver <sup>4</sup> | 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 <sup>4</sup> | 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 <sup>5</sup><br>8x8x3=12 boxes<br>8x8x4=10 boxes<br>8 1/2x8 1/2x4 1/2=8 boxes)                  | Loose mix from behind the paver <sup>4</sup> | 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 <sup>4</sup> | 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              | 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                      | 70-80 lb<br>60 lb <sup>5</sup><br>(8x8x3=9 boxes<br>8x8x4=7 boxes<br>8 1/2x8 1/2x4 1/2=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                      | 140-160 lb<br>60 lb <sup>5,6</sup><br>(8x8x3=18 boxes<br>8x8x4=15 boxes<br>8 1/2x8 1/2x4 1/2=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** (2010 *Standard Specifications* Section 39) (5 of 6)

| Test   | Test Method          | Sample Size & Container Type  | Sampling Location <sup>1</sup>               | Sampling Frequency  | Acceptance Test Frequency   | Remarks  |
|--|----------------------|---|--|---|---|--|
| <b>Open Graded Friction Course (OGFC)</b>                    |                      |   |  |   |   |  |
| Asphalt Binder Content                                       | AASHTO T308 Method A | 20-40 lb<br>(8x8x3=4 boxes<br>8x8x4=3 boxes<br>8 1/2x8 1/2x4 1/2=3 boxes) | Loose mix from behind the paver <sup>4</sup> | 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 <sup>4</sup> | 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)<sup>7</sup></b> |                      |   |  |   |   |  |
| Asphalt Binder Content                                       | AASHTO T308 Method A | 20-40 lb<br>(8x8x3=4 boxes<br>8x8x4=3 boxes<br>8 1/2x8 1/2x4 1/2=3 boxes) | 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 |

**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 <sup>1</sup>          | 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<br>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. 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.