

HCMTCB ASPHALT CERTIFICATION

KEY ELEMENTS LIST

Release Date: November 6, 2014

PERFORMANCE CHECKLIST

AASHTO T-168 Sampling of Bituminous Material

Funnel Device

- 1 Select units to be sampled by what method?
- 2 Relative size and number of increments.
- 3 Collect sample units how?
- 4 Form field sample how?

Roadway after compaction

- 5 Select units to be sampled by what method?
- 6 Relative size and number of increments.
- 7 Samples taken to what depth?
- 8 Acceptability determined how?

- 9 Oklahoma Sampling location preference

Sample from truck transport. (Performance)

- 10 Select sampling locations how?
- 11 Top surface removed.
- 12 Obtain specified number and relative size of increments.

PERFORMANCE CHECKLIST

AASHTO R 47

CHOOSE TYPE A or B

- 1 Splitter cleaned and lubed.
- 2 Unacceptable release agent properties. (Verbal)

Mechanical Splitter Type A (Quartermaster)

- 3 Position receptacles to receive portions.
- 4 Make sure release handle is in position.
- 5 Fill hopper, avoiding segregation.
- 6 Release sample through chutes.
- 7 Reintroduce proper portions.
- 8 Compose test sample.

Mechanical Splitter Type B (Riffle)

- 3 Entire sample through splitter.
 - 4 Minimum number of chutes? (Verbal)
 - 5 Minimum width of each chute? (Verbal)
 - 6 Controlled rate to flow smoothly without restriction or loss of material.
- 7 Correct weight for required test.

PERFORMANCE CHECKLIST

OHD L 26 Ignition oven (part 1)

- 1 If not tested for moisture & volatiles, sample should be dried to a constant weight at what temperature?
- 2 Verify that the oven is at the correct temperature.
- 3 Enter correction factor of mix to be tested.
- 4 Weigh and record weight of sample baskets and pans.
- 5 Properly prepare sample and place in sample baskets and pan.
- 6 Weigh and record weights of sample, basket and pans. Calculate initial weight of sample.
- 7 Enter initial sample weight into ignition oven.

PERFORMANCE CHECKLIST

OHD L 26 Ignition oven (part 2)

- 1 Place baskets in furnace and verify sample weights (including basket). Check furnace scales for proper reading. Start test.
- 2 Weight on furnace scale must match recorded weight of sample, baskets, and catch pan within ____.
- 3 Remove sample baskets and allow to cool to room temperature. (Approximately 30 minutes)
- 4 Transfer entire sample to flat pan
- 5 Minimum dimensions of flat pan?

PERFORMANCE CHECKLIST

AASHTO T-209 Maximum Specific Gravity of Bituminous Paving Mixtures

- 1 Determine sample size from Table. (Sec. 7.2)
- 2 Separate the particles of the sample by hand, taking care not to fracture mineral particles so that particles of fine aggregate are not larger than 6.5 mm (1/4 inch).
- 3 Cool the sample to room temperature.
Calibrate flask. (Verbal only)
 - a Fill with water at specified temperature.
 - b Cap top of flask.
 - c Dry outside and weigh.
- 5 Tare flask at room temperature.
- 6 Pour mixture in flask using scoop and funnel. Weigh to specified tolerance and record.
- 7 Fill flask containing mixture with enough water to cover sample completely.
- 8 Initiate vacuum at specified mm Hg and for specified time.
- 9 Release vacuum by increasing pressure at specified rate.
- 10 Remove flask from vacuum and fill with water.
- 11 Bring water in flask to 77 +/- 2°F.
- 12 When test temperature is achieved, cap off, dry flask and lid.
- 13 Weigh flask, lid, mixture, and water within 10 ± 1 minutes after completing vacuum process.
- 14 Record weight.
- 15 Check for tolerance between two tests. (Verbal only)

PERFORMANCE CHECKLIST

AASHTO T-30 Mechanical Analysis of Extracted Aggregate

WET

- 1 Determine mass of sample within specified tolerance.
- 2 Ample amount of water added?
- 3 Wetting agent used?
- 4 Wash sample until . . . ?
- 5 Pour wash water over what sieves?
- 6 Return material to sample as specified.
- 7 Dry washed sample to constant mass at what temperature?
- 8 Determine mass to specified tolerance.

DRY

- 1 Assemble specified nest of sieves.
- 2 Describe the method for determining sufficiency of sieving.
 - 2a. Use what equipment?
 - 2b. Hold sieve in what position?
 - 2c. Hand bump sieve at what rate?
 - 2d. Turn sieve how far at what interval?
 - 2e. For sieves larger than No. 4?
 - 2f. Sieve until?
- 3 Did applicant check each sieve for blinding?
 - 3a. Calculations for determining blinded sieve.
 - 3b. Methods for prevention of blinding.
- 4 Determine the mass of material retained on each sieve to the specified tolerance. (Get all material from sieve.)

PERFORMANCE CHECKLIST

AASHTO T-176 Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test

Alternate Method 2 – Pre-Wet

Part one - Sample Preparation

- 1 Shake material over specified sieve.
- 2 What should be done with lumps of fine grained material?
- 3 Clean all fines from the particles retained on the sieve and include in the passing material.
- 4 Split or quarter enough of the sample to yield 500 to 750 g of material.
- 5 Perform Fragile Cast Test for proper moisture content. Moisten, if necessary, to obtain the fragile cast, and place in covered pan for specified tempering period.
- 6 Mix sample with splitting cloth as specified.
- 7 Fill tin as specified.
- 8 Remix sample.
- 9 Fill a second tin as specified.
- 10 Place tins in oven at what temperature? (Verbal)

PERFORMANCE CHECKLIST

AASHTO T-176 Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test

Part two - Running Sand Equivalent

- 1 Cool to what temperature? (Verbal)
- 2 Siphon specified amount of working solution into graduated cylinder.
- 3 Pour prepared test sample from tin into cylinder using funnel to avoid spillage.
- 4 Tap bottom of cylinder to remove air and thoroughly wet material.
- 5 Allow to stand for specified soaking period.
- 6 Loosen material in cylinder before shaking.
- 7 Shake cylinders and contents for specified time.
- 8 Set cylinder upright and remove stopper. Rinse materials from stopper into cylinder.
- 9 Place irrigation tube into material, rinsing fines from walls. Apply proper action until all fines are flushed from bottom and cylinder is filled to specified level.
- 10 Allow to stand undisturbed for the specified sedimentation period.
- 11 Read and record sand and clay readings.

PERFORMANCE CHECKLIST

OHD L 14 \ T 166

ROADWAY CORES

- 1 Cool specimen to what temperature? (Verbal)
- 2 Tare hook and string.
- 3 Bring water to specified temperature.
- 4 Submerge specimen in water and take reading after specified time.
- 5 Record weight within specified tolerance.
- 6 Surface dry specimen with damp towel immediately and weigh within specified tolerance. Record weight.
- 7 Place specimen in dry pan of known weight and dry to constant weight at specified temperature.
- 8 Cool specimen and drying pan to room temperature weigh within specified tolerance. Record weight.
- 9 What if absorption > 2.0%? (Verbal)
- 10 Calculate specific gravity.

PERFORMANCE CHECKLIST

OHD L 14 \ T 166

LAB MOLDED SPECIMENS

- 1 Cool specimen to what temperature? (Verbal)
- 2 Weigh in air to the specified tolerance. Record weight.
- 3 Tare hook and string
- 4 Bring water to specified temperature.
- 5 Submerge specimen in water and take reading after specified time.
- 6 Record weight to the specified tolerance.
- 7 Surface dry specimen with damp towel immediately and weigh to the specified tolerance. Record weight.
- 8 What if % Absorption exceeds 2.0?
- 9 Calculate specific gravity.

PERFORMANCE CHECKLIST

OHD L-14 Alternate Method (Nuc Gauge)

- 1 When gauge is first turned on, before using, allow it to _____.
- 2 Place gauge on standard block correctly.
- 3 Minimum density of material beneath block?
- 4 Take standard count.
- 5 Set instrument for specified count.
- 6 Proper depth set.
- 7 Maximum void between gauge and surface that will be filled with fine sand, fly ash, etc. (Verbal)
- 8 Properly position gauge on surface.
- 9 Set gauge to backscatter.
- 10 Take and record specified number of counts.
- 11 If surface is hot, do you need to let the gauge cool between measurements? (Verbal)
- 12 Number of test locations required for correlation? (Verbal)

PERFORMANCE CHECKLIST

OHD L-45

Specific Gravity and Unit Weight Using Vacuum Sealing Method

- 1 Dry specimen to constant mass at what temperature? (Verbal)
- 2 Bring specimen to what temperature? (Verbal)
- 3 Record initial weight of specimen.
- 4 Weigh bag and record mass.
- 5 Place bag in machine as specified.
- 6 Place specimen in bag properly.
- 7 Close lid to begin vacuum process.
- 8 Remove sample from chamber and check for leaks.
- 9 Weigh in air and record mass.
- 10 Immerse sample in water within specified time limit after sealing. (Verbal)
- 11 Immerse specimen in water at specified temperature. (Verb)
- 12 Record weight to specified tolerance when reading stabilizes.
- 13 Test sample for validity. (Permissible gain or loss of mass.)
- 14 Place specimen in dry pan of known weight and dry to constant weight at specified temperature.
- 15 Cool specimen and drying pan to room temperature and weigh to nearest 0.1 gram. Record weight.

PERFORMANCE CHECKLIST

AASHTO T 312 Superpave Gyratory

Key Elements 1 - 4 are verbal questions.

- 1 Sample conditioned at what temperature?
- 2 Sample conditioned for how long?
- 3 Does machine ever require calibration?
- 4 Where is the calibration information found?
- 5 Verify machine is set for specified number of gyrations.
- 6 Place paper gasket over base plate.
- 7 Fill mold with sample as specified.
- 8 Level material in mold.
- 9 Place paper gasket and top plate (if required) on top of material and slide mold into compactor.
- 10 Start SGC.

PERFORMANCE CHECKLIST

OHD L 5 Liquid AC

Containers (Verbal)

- 1 Type of container used for AC.
- 2 Type of container used for emulsions.

3 Sample Care (Verbal)

- 3a Take care that samples are not _____.
- 3b Container must be perfectly ____ and ____.
- 3c Emulsions must be protected from _____.
- 3d Mark for identification on ____ or ____.
- 3e Clean outside of container with only _____.

Sampling Locations (Verbal)

- 4 Truck transport.
 - 4a Valve located in the ____ or ____.
 - 4b Sample taken from what part of load?
- 5 Mixing Plant Valve Location
- 6 Storage Tank (Circulating)
- 7 Storage Tank (Not Circulating)
 - 7a Obtain sample by means of _____.
 - 7b Lower to near _____.
 - 7c Withdraw at rate so that _____.
 - 7d Sampling device should be _____ and _____ before taking the sample.

Sampling Procedure (Performance)

Tell applicant - Gloves, heavy long sleeves, and face shield must be used.

- 8 Treatment of first portion of material from valve.
- 9 Container filled to appropriate level.
- 10 Container properly sealed and cleaned.