



**Asphalt Plant Level I  
Technician Proficiency Test  
2013**

VDOT Road & Bridge Specifications  
Section 211

Sampling of Hot-Mix Asphalt at the Plant

AASHTO R47

Reducing Samples of Hot-Mix Asphalt to Testing Size

**SAMPLING OF HOT-MIX ASPHALT AT THE PLANT (R&B Specification 211)**

- 1. Sample taken from the approximate center of the truckload? ..... \_\_\_\_\_
- 2. Top 6 to 8 inches of material struck off to form proper sampling platform..... \_\_\_\_\_
- 3. Sampled using a flat square shovel, horizontally and 8-12 inches below the surface of the sampling platform? ..... \_\_\_\_\_
- 4. Enough material sampled to produce one 4.5 kg sample for each party's AC content and gradation sample after quartering?  
..... \_\_\_\_\_
- 5. Enough material sampled to produce one 12.5 kg sample for each party's volumetric sample? ..... \_\_\_\_\_
- 6. Temperature determined and recorded? Max temperature for mix type being produced noted?..... \_\_\_\_\_

**REDUCING SAMPLES OF HOT-MIX ASPHALT TO TESTING SIZE (R47)**

From AMRL *Hot-Mix Asphalt Worksheets OSA.F34 HMA - 2*  
Revised 2013-02-12

APPARATUS Date: \_\_\_\_\_  
Equipment for one of the following methods:

**Mechanical Splitter Method**

1. Mechanical Splitter Type A ..... \_\_\_\_\_

- (a) Designed so that the HMA field sample will flow smoothly and freely through the divider without restriction or loss of materials (See Figure 1).
- (b) Splitter has four equal width chutes.
- (c) Four appropriate sized containers.
- (d) Hopper with release handle.

2. Mechanical Splitter Type B? ..... \_\_\_\_\_

- (a) No less than 8 equal sized openings.
- (b) The openings minimum width must be at least 50% larger than largest particle to be split.
- (c) Hopper or straightedge pan.

3. Approved Release Agent (such as non-stick cooking spray) if used, meets the following criteria? ..... \_\_\_\_\_

- (a) Does not contain solvents.
- (b) Does not contain petroleum based products that affect binder properties. **Note to Assessors:** *Products such as WD-40 contain solvents and petroleum products, and are not acceptable for this test method.*

**Quartering Method:**

1. One of the following:

- (a) Quartering template? ..... \_\_\_\_\_
  - (1) Forms a cross forming 90 degree angles at juncture? ..... \_\_\_\_\_
  - (2) Sufficient length (1.1 times the diameter of the flattened cone of HMA to be quartered)? ..... \_\_\_\_\_

or (b) Straightedges? ..... \_\_\_\_\_

2. Flat bottom scoop? ..... \_\_\_\_\_

3. A large spatula, trowel, or piece of metal to be used as a straightedge? ..... \_\_\_\_\_

4. Non-stick paper or heat resistant plastic? ..... \_\_\_\_\_

5. Approved Release Agent (such as non-stick cooking spray) if used, meets the following criteria? ..... \_\_\_\_\_

- (a) Does not contain solvents.
- (b) Does not contain petroleum based products that affect binder properties. **Note to Assessors:** *Products such as WD-40 contain solvents and petroleum products, and are not acceptable for this test method.*

**Incremental Method**

1. Flat bottom scoop? ..... \_\_\_\_\_

2. Non-stick heavy paper or heat-resistant plastic? ..... \_\_\_\_\_

3. Large spatulas, trowels, metal straightedges, or a 12-in drywall taping knife? ..... \_\_\_\_\_

4. Hot plate, gloves, buckets, and cans? ..... \_\_\_\_\_

COMMENTS (R47): (R47) *AMRL Hot-Mix Asphalt Worksheets OSA.F34 HMA - 3*  
Revised 2013-02-12

REDUCING SAMPLES OF HOT-MIX ASPHALT TO TESTING SIZE (R47)

PROCEDURE Date: \_\_\_\_\_

**Mechanical Splitter Method:** *for a large amount of material, Method A should be used whenever possible.*

- 1. **Optional:** Splitter and accessories heated, not to exceed 110°C as determined with a non-contact temperature device? ..... \_\_\_\_\_
- 2. **Optional:** All surfaces coming into contact with HMA coated with approved release agent? ..... \_\_\_\_\_
- 3. Mechanical Splitter Method (Type A)
  - (a) Field or laboratory sample placed in hopper avoiding sample segregation?..... \_\_\_\_\_
  - (b) Sample containers positioned to receive HMA? ..... \_\_\_\_\_
  - (c) Release handle used dropping HMA through chutes? ..... \_\_\_\_\_
  - (d) Samples taken from opposing corners for reintroduction into hopper? ..... \_\_\_\_\_
  - (e) Split as many times as necessary for appropriate test? ..... \_\_\_\_\_
- 4. Mechanical Splitter Method (Type B)
  - (a) Sample placed in hopper or straightedge pan? ..... \_\_\_\_\_
  - (b) Uniformly spread edge to edge? ..... \_\_\_\_\_
  - (c) Rate at which sample introduced allows free flow into sample containers? ..... \_\_\_\_\_
  - (d) Steps repeated until sample size obtained? ..... \_\_\_\_\_

**Note:** *Unlike C702, the half of the split sample normally regarded as trash may be set aside for reduction in size for other tests.*

**Quartering Method**

- 1. Sample placed on a hard, non-stick, clean, level surface? ..... \_\_\_\_\_
- 2. Approved release agent, non-stick paper, or heat resistant plastic may be used to make surface non-stick? ..... \_\_\_\_\_
- 3. Sample mixed to uniformity by turning over four times? ..... \_\_\_\_\_
- 4. Mixed using flat bottom scoop or by alternately lifting each corner of the paper or plastic and pulling toward the opposite corner? ..... \_\_\_\_\_
- 5. During the last turning, entire sample formed into conical pile by depositing each scoopful on top of previous one or by lifting two opposite corners of the paper or plastic? ..... \_\_\_\_\_
- 6. Pile flattening into uniform thickness and diameter by pressing down on the apex? ..... \_\_\_\_\_
- 7. Diameter approximately four to eight times the thickness? ..... \_\_\_\_\_
- 8. A visual check is done to ensure that the material is homogenous? ..... \_\_\_\_\_
- 9. Flattened mass divided into four quarters using quartering template or straightedges? ..... \_\_\_\_\_
- 10. Quartering template pressed down until it has complete contact with surface? ..... \_\_\_\_\_
- 11. Two diagonally opposite quarters selected as "quartered" material? ..... \_\_\_\_\_
- 12. Steps repeated until sample size obtained? ..... \_\_\_\_\_

**Incremental Method**

- 1. Sample placed on a hard, non-stick, clean level surface covered with non-stick paper, heat resistant plastic, or another suitable material? ..... \_\_\_\_\_
- 2. Sample mixed to uniformity by turning over four times? ..... \_\_\_\_\_
- 3. Mixed using flat bottom scoop or by alternately lifting each corner of the paper or plastic and pulling toward the opposite corner? ..... \_\_\_\_\_
- 4. During the last turning, entire sample formed into conical pile by depositing each scoopful on top of previous one or by lifting two opposite corners of the paper or plastic? ..... \_\_\_\_\_
- 5. A visual check is done to ensure that the material is homogenous? ..... \_\_\_\_\_
- 6. Paper or plastic grasped and material is rolled into a cylindrical roll (loaf) and top of loaf flattened? ..... \_\_\_\_\_
- 7. Paper pulled so that at least ¼ of the length of the loaf is off of the edge of the counter and the portion overhanging the counter sliced off and placed in a container? ..... \_\_\_\_\_
- or A straightedge used to slice off approximately ¼ of the loaf and material placed in a container? ..... \_\_\_\_\_
- 8. Additional material removed as needed to obtain test size? ..... \_\_\_\_\_

COMMENTS (R47): (R47) AMRL Hot-Mix Asphalt Worksheets OSA.F34 HMA - 4  
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