2026 Asphalt Mixtures Gyratory Design Samples 61 (A) and 62 (B) Sample Instructions

Closing Date: July 16, 2026

General Information:

Treat each sample as you would treat a typical sample brought into the laboratory. Any special handling or preparation instructions are included below. Conduct tests on each of the two samples in accordance with the instructions below. Report the results of a single determination only, not the average of two or more unless specified in the test method or instructions.

Reporting the results to an extra decimal place beyond what is required by the test method is requested for statistical reasons and equates to more precise data that is available to analyze.

To permit an estimate of single-operator precision, the same operator should conduct an individual test on both samples. It is not necessary that the same person conduct all the tests in the sample round.

Leave the appropriate spaces on the data sheet blank for any tests you choose not to perform.

Requirements for AASHTO Accredited Laboratories:

AASHTO accredited laboratories are required to perform every test included in an AASHTO re:source Proficiency Sample Program sample round that is also listed in each laboratory's AASHTO Accreditation scope.

AASHTO Accreditation Policy on PSP Participation

The tests that are not listed in the laboratory's accreditation scope may also be performed, but testing is not required, and the AASHTO Accreditation Program (AAP) will not evaluate the ratings.

Sample Information:

You should have received two boxes of ingredients for creating the test specimens for Gyratory Design samples 61 (A) and 62 (B). The boxes should contain the following:

Box 1 should contain the following items:

- One bag 12.5-mm (1/2-in) aggregate
- One bag of 4.75-mm (No. 4) aggregate
- One bag of fine aggregate [i.e. sand passing the No. 8 (2.36-mm) sieve]

Box 2 should contain the following items:

- One bag of 9.5-mm (3/8-in) aggregate
- One bag of 2.36-mm (No. 8) aggregate
- One bag of mineral filler
- Two cans of asphalt binder

To view an unboxing video of these samples please use the following link:

HMG 61 (A) and 62 (B) Unboxing Video

Specimen Batching:

Prepare four individual batches per the proportions given in the table on the next page - two identical batches for sample 61 (A) and two identical batches for sample 62 (B). The first batch for each specimen will be used as a butter batch as well as the specimens for maximum specific gravity. After removing the butter batch from the bowl, condition the butter batch, then split or quarter the butter batch to obtain the

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specimen for the maximum specific gravity test (1500 g minimum specimen size required). The second specimen batched will be used for the gyratory compaction. Use the entire specimen for compaction.
The fine aggregate is provided in a moist condition to prevent segregation. Use the quartering or the miniature stockpile method (AASHTO R76/ ASTM C702, Method B or C) to batch the moist fine aggregate. Reduce the fine aggregate in its moist condition into portions slightly larger than the batch masses, as the fine aggregate contains approximately 5% moisture. Oven-dry the fine aggregate portions and adjust the masses of the portions to the exact weights needed for the batches.

Batching Table for All Specimens:

Prepare the two butter batches and two compaction batches by combining the materials provided in the manner described in the table below. Dry all material at 110°C before weighing. Make all necessary weighings to the nearest 0.1 g.

	Sample 61 (A) (two required)		Sample 62 (B) (two required)	
	Individual Mass, g	Cumulative Mass, g	Individual Mass, g	Cumulative Mass, g
12.5 mm (1/2 in.)	410.0	410.0	420.0	420.0
9.5 mm (3/8 in.)	580.0	990.0	635.0	1055.0
4.75 mm (No. 4)	1000.0	1990.0	1000.0	2055.0
2.36 mm (No. 8)	1090.0	3080.0	1005.0	3060.0
Fine aggregate (passing 2.36 mm (No. 8))	1440.0	4520.0	1455.0	4515.0
Mineral filler	240.0	4760.0	250.0	4765.0
Asphalt binder	235.0	4995.0	235.0	5000.0

Mixing:

Follow the mixing procedures specified in AASHTO R68 or ASTM D6925.

Use the following mixing temperature for both samples:

Mixing Temperature: 155 to 160°C (310 to 320°F)

Conditioning/Curing:

To assure testing uniformity between laboratories for this round of testing, after mixing, condition the specimens for maximum specific gravity and gyratory compaction in accordance with AASHTO R30 or ASTM D6925. Condition all four batches for 2 hrs. ± 5 min at the conditioning temperature, stirring after 60 ± 5 min to maintain uniform conditioning. Condition the butter batch before splitting or quartering the batch to obtain the specimen for maximum specific gravity testing.

Use the following conditioning temperature for both samples:

Conditioning Temperature: 145 to 150°C (293 to 302°F)

Compaction:

Compact the specimens in accordance with AASHTO 312 or ASTM D6925. Set the compactor for 100 gyrations while maintaining a pressure of 600 ± 18 kPa.

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Use the following compaction temperature for both samples:

Compaction Temperature: 145 to 150°C (293 to 302°F)

Exercise caution when extruding the specimens. A cooling period of three to five minutes is recommended before moving the specimens.

Test Methods:

Specific Gravity of Soils T100-25:
Sample two specimens for testing in accordance with T100. Determine the specific gravity of the mineral filler passing the 2.00-mm (No. 10) sieve [or passing the 0.425-mm (No. 40) sieve, if T146 was used]. Oven-dry the mineral filler in accordance with Section 10.3 (T100) and determine the specific gravity based on water at 20°C. Determine the average of the two trials and report the results to the nearest 0.001 specific gravity unit.

Maximum Specific Gravity of Asphalt Paving Mixtures AASHTO T209-25 or ASTM D2041-19: Use the uncompacted butter batch as the test sample. Do not use the Supplemental Procedure for Mixtures Containing Porous Aggregates. Report the specific gravity to the nearest 0.001.

Bulk Density Methods:

If the bulk specific gravity is determined using both the Saturated Surface–Dry Method and the Vacuum Sealing Method, perform the Vacuum Sealing Method first to have dry specimens to begin the Saturated Surface-Dry Method. If the plastic bag is punctured during testing, mark the appropriate box on the data sheet and be sure to follow the procedure provided in the test method for specimens that may contain moisture.

Bulk Specific Gravity of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens AASHTO T166-25 or ASTM D2726-21: Report the bulk specific gravity of the specimens to the nearest 0.001.

Bulk Specific Gravity of Compacted Asphalt Mixtures Using Vacuum Sealing Method AASHTO T331-25 or ASTM D6752-25: Report the bulk specific gravity of the specimens to the nearest 0.001.

Determine the Relative Density of Hot Mix Asphalt Specimens by Means of the Superpave Gyratory Compactor AASHTO T312-22 or ASTM D6925-23: Report the heights of compaction for each specimen at 8 gyrations (N_{ini}) and 100 gyrations (N_{des}) to the nearest 0.1 mm. Calculate and report the percent of maximum specific gravity (i.e. corrected relative density, $\%G_{mm}$) at 8 gyrations (N_{ini}) and 100 gyrations (N_{des}) to the nearest 0.1 percent. Report the results based on the method used to determine the bulk specific gravity (lines 8 and 9 for SSD and lines 10 and 11 for vacuum).

Contact AASHTO re:source at psp@aashtoresource.org or call 240-436-4900 if there are questions.

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