1809  Bituminous Mixture Samples - Voids

1809.1 Sample Preparation

A. Heat the sample in its container until it becomes workable, a range of 70 – 110 °C (160 – 230 °F).

B. Immediately place into a large pan sufficient material to run all requested tests. Return extra material to its container and save for a short time in case re-checks are needed.

C. Thoroughly hand mix the material in the pan with a scoop and trowel.

D. Take a representative 2000 - 2100 gram sample for extraction and gradation if required. (Test according to Manual Section 1203.5 and Sections 1851, 1852 or 1853 as appropriate).

E. Re-mix and quarter the material remaining in the pan.

Note 1: When quartering the sample the goal is to be as representative as possible for all the tests.

F. From one part weigh out 2000 – 2050 grams of material to run the maximum specific gravity ("Rice test") and spread it out in a pan – (Test according to Section 1807).

G. From the other three-quarters prepare three specimens for bulk specific gravity on Marshall mixtures or at least two if not three specimens for gyratory mixtures.

H. For each of the three Marshall specimens weigh out enough material for a 63.5 ± 3.175mm (2.5 ± 0.125") puck, approximately 1200 grams, but it will vary depending upon the aggregates. (Refer to Section 1805.7)

I. For Gyratory mixtures weigh out enough material for a puck that will compact to 115 ± 5 mm in height at design. Somewhere between 4800 – 4900 grams per specimen should be adequate but it will be dependent upon the level of gyrations and the aggregate.

J. Return the molds with the material into an oven and bring the material to 135 ± 5.6 °C (275 ± 10 °F) or to the compaction temperature required for the PG graded asphalt used in the mixture. (See Notes 2 thru 4.)
K. When the material reaches the desired temperature, compact and measure in accordance with Section 1805 or 1820.

**Note 2:** Be certain to measure the material temperature; the thermometer must not touch the bottom or side of the mold.

**Note 3:** After the material in the molds has reached 135 ± 5.6 °C (275 ± 10 °F) or the required temperature for the PG graded asphalt, compaction must commence within 30 minutes.

**Note 4:** Before reusing the same mold for an additional sample, place it back into an oven and reheat for at least 5 minutes.

L. Determine the bulk specific gravity according to Section 1806.

M. Determine the air voids in accordance to Section 1808.

N. Determine the adjusted AFT in accordance to Section 1854.