

MOISTURE-DENSITY RELATIONS (Proctor Density)

Refer to Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5 lb.) Rammer and a 305 mm (12-in.) Drop – AASHTO T 99-01 (2004) with the following additions and modifications:

- 1.3 This test method applies to soil mixtures that have 40 percent or less retained on the No. 4 sieve, when Method A is used, and 30 percent or less retained on the $\frac{3}{4}$ in. sieve, when method C is used. The material retained on these sieves shall be defined as oversized particles (coarse particles).
- 3.1.3. Molds Out of Tolerance Due to Use - A mold that fails to meet manufacturing tolerances after continued service may remain in use provided those tolerances are not exceeded by more than 100 percent; and the volume of the mold, calibrated in accordance with Section 8 (Calibration of Measure) of AASHTO T 19 is used in the calculations.
- 4.2. Sieve an adequate quantity of the representative pulverized soil over the No. 4 sieve. If the quantity of material retained on the No. 4 sieve is greater than five percent, follow the procedures outlined in Method C.
- 8.2. Sieve an adequate quantity of the representative pulverized soil over the $\frac{3}{4}$ in. and No. 4 sieve. Record the quantity of material retained on the No.4 and $\frac{3}{4}$ in. sieve. The quantity of material retained on the $\frac{3}{4}$ inch shall be used to adjust the compacted specimen density to field density in accordance with AASHTO T 224.
- 14.1.4. In Method C, indicate the quantity of material retained on the No. 4 and $\frac{3}{4}$ inch sieve.
- 14.1.6. See figures 1 and 2 for sample data sheets.

SECTION 16 METHOD E PROCEDURE (STABILIZED AGGREGATE BASE)

- 16.1. Combine in mix percentages representative samples of dry ingredients for the stabilized aggregate base to a sample weight of 6000 grams (a separate sample will be needed for each point desired using a new sample for each compaction test)
- 16.2. Add water and mix thoroughly to dampen to approximately four percentage points below estimated optimum moisture content. Compact the stabilized aggregate base mixture as in Method A except use the 6-in. mold and 56 blows per layer. Following compaction remove the extension collar; carefully trim the compacted material flush with the top of the mold. In trimming the compacted specimen, holes may develop by removal of coarse particles; these may be patched with fine

particles. Weigh the mold inclusive of the compacted material and determine the wet density according to the procedure described in Section 5.2.1.

- 16.3. Remove the material from the mold and weigh immediately. Place the entire compacted specimen in an oven and dry to a constant weight to determine the moisture content in accordance with AASHTO T 255.
- 16.4. Using a new portion of aggregate each time (6000 grams) repeat 5.2 and 5.2.1 for each determination while adding water in approximately 2% increments (120 grams). Continue adding water in increments and compact until there is either a decrease or no change in the weight of the compacted aggregate plus mold.

SECTION 17 Procedure For Field Correction Of Moisture Density Test Results for Variations in Percent Retained on the No.4 Sieve.

- 17.1. Compacted specimen density determined using Method A or C shall be corrected in accordance with AASHTO T224 for field density purposes if the quantity of plus No. 4 material is greater than 5 percent. The preferred method of determining maximum density of samples with greater than 5% plus No. 4 material is Method C. However, it may be necessary to correct the results of Method A in some cases for oversized particles.

APPROVED

DIRECTOR
DIVISION OF MATERIALS

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