

Colorado Procedure 53-19

Standard Method of Test for

Determining Maximum Density of Cold In-Place Recycled Pavement

(This procedure modifies AASHTO T 180. The current AASHTO T 180 is to be used in conjunction with this procedure.)

1. SCOPE

1.1 This test is intended for determining the maximum density of cold in-place recycled pavement using AASHTO T 180. Two alternate procedures are recommended as follows:

Method C - Deleted

Method D - 6-inch (152.60 mm) mold, material passing a 3/4 in. (19.0 mm) sieve.

2. REFERENCED DOCUMENTS

- 2.1 *AASHTO Standards:*
- T 119 Bulk Density ("Unit Weight") & Voids in Aggregate
 - T 180 Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop
- 2.2 *Colorado Procedures:*
- CP 41 Sampling Hot Mix Asphalt

2A. SAMPLING

2A.1 Obtain a sample from the windrow or roadway, after rolling in the finished roadway. For cationic emulsions, sample after rolling in the finished roadway. Follow CP 41, Method C. Prepare and compact the sample as described in Method C or Method D below.

METHOD C

8. SAMPLE - Deleted

9. PROCEDURE - Deleted

METHOD D

10. SAMPLE

10.1 (Follow as modified.) Select the representative sample in accordance with Subsection 8.3, except that it shall weigh (have a mass of) approximately 12 lb. (5 kg).

11. PROCEDURE

11.1 (Follow per AASHTO T 180.) Follow the same procedure as described for Method C in Section 9, except for the following: Form a specimen by compacting the prepared sample in the 6 in. (152.40 mm) mold (with collar attached) in five approximately equal layers, to give a total compacted depth of about 5 in. (127 mm), each layer being compacted by applying 56 uniformly distributed blows from the rammer. For molds conforming to tolerances in Subsection 3.1, and masses recorded in pounds, multiply the mass of the compacted specimen and the mold, minus the mass of the mold, by 13.33, and record the result as the wet density, W , in lb/ft^3 of the compacted material. For molds conforming to tolerances in Subsection 3.1, and masses recorded in kilograms, multiply the mass of the compacted specimen and the mold, minus the mass of the mold, by 471, and record the result as the wet density, W , in kilograms per cubic meter, of compacted material. For used molds out of tolerance by not more than 50 percent (Subsection 3.1), use the factor for the mold, as determined in accordance with Section 8 (Calibration of Measure) AASHTO T 19.

12. CALCULATIONS

12.1 (Follow as modified.) The wet density, which was calculated in Subsections 9.2.1 or 11.1, will be the maximum density used for determining the percent relative compaction.

13. FIELD TESTING OF IN-PLACE DENSITY

13.1 Perform in accordance with CP 81.

14. RECORD

14.1 No CDOT Form is used, record on your own worksheet.