

GDT 42

A. Scope

For a complete list of GDTs, see the Table of Contents.

Use Method A to measure thickness of base and subbase courses.

Use Method B to measure thickness of compacted asphaltic concrete paving mixture and to measure soil cement specimens when using core measurements to govern the job.

B. Apparatus

1. Method A: Bases and Subbases The apparatus consists of the following:
 - a. Straightedge
 - b. Measuring Device: Use a carpenter's rule or other suitable measuring device (ER0060).
2. Method B: Asphaltic Concrete Paving and Soil Cement The apparatus consists of the following:

Measuring Device: Use a carpenter's rule, and straight edge

C. Sample Size and Preparation

1. Method A: Bases and Subbases
 - a. Open the course to be measured to the full depth with post-hole diggers, chisel and spoon, auger, or other suitable equipment.
 - b. Use the hole made for checking in-place density, provided it exposes the full thickness of the course.

Note: Where the course is placed in more than one layer, make measurements through the compaction hole of the top layer after excavating through the bottom layer to give an overall course thickness.

- c. Distinguish the bottom of the course from the top of the underlying layer as follows:
 - 1) Note the evident change in material texture and/or color.
 - 2) Look for a generally smooth plane on the top of the underlying layer from the final rolling before the course was laid down.
 - 3) If you carefully excavate the material above that plane, the material will slough off the compaction plane, exposing a smooth surface.
 - 4) After excavating into the underlying layer, use a knife, screwdriver, or straightedge to dig downward into the side of the hole to expose the compaction plane.
 - 5) Even where the two layers are of identical materials, you can generally separate the courses by locating the compaction plane.
2. Method B: Asphaltic Concrete Paving and Soil Cement
 - a. Cut cores from HMA or soil cement material through entire lift of material to be tested.
 - b. Do not make thickness measurements on any specimen that has been distorted or cracked when removed from the pavement.

D. Procedures

1. Method A: Bases and Subbases
 - a. Stick a knife or a screwdriver into the side of the hole at the bottom of the course.
 - b. Place the straightedge on the surface of the course being measured.

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- c. Extend the rule into the hole to the bottom of the course to the knife or screwdriver.
 - d. Lift the rule and straightedge intact from the hole.
 - e. Read the thickness from the rule.
 - f. Where the surface of the course being measured is irregular, move the straightedge through approximately 90° and measure in four locations. Average these measurements.
2. Method B: Asphaltic Concrete Paving and Soil Cement
- a. Make four measurements at approximately quarter points on the periphery of the specimen. Take these measurements perpendicular to the upper plane of the specimen.
 - b. Measure between upper and lower surface, between a well-defined construction demarcation line.
 - c. Average the measurements.

E. Calculations

No specific calculations are required for this test.

F. Report

Methods A and B

Read and record the rule to the nearest 1/16th (2 mm) in on Form 386 or other appropriate form.