



Florida Method of Test for THICKNESS DETERMINATIONS IN SOIL-AGGREGATE BASES

Designation: FM 5-534

1. SCOPE

- 1.1 This method presents a procedure for the effective boring of holes to be used for base-thickness determinations in all soil-aggregate bases. It is intended to present a systematic method to obtain an acceptable and proper hole, and an accurate thickness determination of the base.

2. DEPTH DETERMINATION

- 2.1 The thickness of the base shall be measured at random intervals within each lot. A lot in this instance is defined as a section of roadway 200 feet in length. Measurements shall be taken at various points on the cross section such as left, right, and centerline in random order.

3. EQUIPMENT

- 3.1 A drilling machine, capable of providing rotary motion. The machine may be a hand-held type and thrust manually, or fixed. It shall be equipped to provide hydraulically or mechanically actuated thrust in a downward direction, perpendicular to a horizontal plane. Any other drilling apparatus, which will produce an acceptable hole, will be permitted.
- 3.2 Bits set with diamonds, tungsten carbide, or similar hard materials appropriate to the hardness of the material being drilled. The bits shall be affixed to a casing of sufficient length to penetrate the full depth of the base and shall be a minimum of three inches in diameter.
- 3.3 A shaft or rod, of appropriate length, to attach the bit to the drilling machine and to transfer the torsion of the actuated machine thereto.
- 3.4 A spoon, trowel or similar tool for use in the removal of debris from the bored hole.
- 3.5 A metal straightedge, of sufficient length to reach the bottom of the base.
- 3.6 Appropriate measuring tool(s) i.e., a sliding combination-square; metal probe



with a 90° elbow foot, ruler, tape, calipers, etc.

4. PROCEDURE

- 4.1 Firmly seat the bit vertically on the surface of the base and align the shaft (or rod) axis perpendicular to the surface plane. Activate the machine and apply downward thrust sufficient to cause the bit to cut into the base material with a constant and steady force. Continue in this manner until the entire depth of the base has been penetrated. At this time, remove the drilling unit from the base and extract the core.
- 4.2 The core will generally be fractured and in a fragmented/shattered condition and is not to be considered in itself as being usable for base-thickness determination, however, the core material should be retained for replacement in the hole after use.
- 4.3 Remove all core material from the hole. The hole should be devoid of all particles, rocks, and debris and should be checked for perpendicular alignment from the surface plane of the base.
- 4.4 The measurements taken shall be the distance from the top of the finished base down to that precise point where the base comes into contact with the top of the subgrade and shall be along an axis, which is perpendicular to the surface plane. A metal straightedge should be used to trim the sides of the holes in order to locate these points before the measurements are taken. The determination of these exact points should be made carefully, with emphasis on precision. The equipment used should be such that would meet the above criteria.
- 4.5 Round off and record measurements to the nearest 0.1 inch.