

Method of Test for Slump of Portland Cement Concrete

1. Scope:

The test is for determining the slump of fresh concrete.

2. Apparatus:

- 2.1 Mold conforming to AASHTO T 119.
- 2.2 Tamping rod. A round smooth 5/8" steel rod with the tamping end rounded to a hemispherical tip of 5/8" diameter. The minimum length shall be 18".
- 2.3 Small scoop or shovel.
- 2.4 Measuring tape capable of measuring to 1/4".

3. Procedure:

- 3.1 Obtain a sample of fresh concrete in accordance with SD 402.

NOTE: Samples of volumetric mixed low slump dense concrete shall be placed in a covered container for 5 minutes prior to testing.

- 3.2 Dampen the inside of the mold and the base it will sit on, just prior to use.
- 3.3 Place the mold on a flat, level, rigid non-absorbent surface and hold it firmly in place.
- 3.4 Fill the mold in 3 layers of approximately equal volume. One-third of the volume of the slump mold fills it to a depth of 2 5/8", two-thirds of the volume fills it to a depth of 6 1/8". Rod each layer 25 times. Distribute the strokes uniformly over the cross section of the layer being rodded. For the bottom layer this will necessitate inclining the rod slightly and making approximately half the strokes near the perimeter and then progressing with vertical strokes spirally toward the center.

Rod the lower layer to its total depth, but the rod shall not forcibly strike the bottom of the base so as to cause excessive vibration. Rod the second and third layers with the rod penetrating slightly (Approximately 1 inch) into the layer below.

Heap the concrete above the top of the mold for the final layer, adding additional concrete, as required, to keep the surface above the mold as it is rodded.

- 3.5 After rodding the final layer, strike off the surface with a tamping rod and remove all excess concrete from the base of the cone.

- 3.6 Remove the mold immediately from the concrete by raising it carefully in a vertical direction. Raise the mold a distance of 12" in 5 ± 2 seconds by a steady upward lift with no lateral or torsional motion. Complete the entire test from the start of the filling through removal of the mold without interruption within an elapsed time of 2 1/2 minutes.
- 3.7 Set the mold next to the specimen. Use the tamping rod as a level line to measure the vertical difference between the top of the mold and the displaced original center of the top surface of the concrete.

4. Report:

Report the slump to the nearest 1/4" on a DOT-23.

5. References:

AASHTO T 119
SD 402
DOT-23