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Section: 480
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A condensed View of the Testing

(3.1)

- A sample of freshly mixed concrete is placed and compacted by rodding in a mold shaped as the frustum of a cone.
- The mold is raised, and the concrete allowed to subside.
- The vertical distance between the original and displaced position of the center of the top surface of the concrete is measured and reported as the slump of the concrete.

Detailed steps for Testing

-----Section 5-----

(5.1)

- The test specimen shall be formed in a mold made of metal or plastic not readily attacked by the cement paste.
- The mold shall be sufficiently rigid to maintain the specified dimensions and tolerances during use, resistant to impact forces, and shall be non-absorbent.
- Metal molds shall have an average thickness of not less than 0.060 in. [1.5 mm] with no individual thickness measurement less than 0.045 in. [1.15 mm].
- Plastic molds shall be ABS plastic or equivalent (Note 3) with a minimum average wall thickness of 0.125 in. [3 mm], with no individual thickness measurement less than 0.100 in. [2.5 mm].
- The manufacturer or supplier shall certify the materials used in mold construction are in compliance with the requirements of this test method.

-The mold shall be in the form of the lateral surface of the frustum of a cone with the base 8 in. [200 mm] in diameter, the top 4 in. [100 mm] in diameter, and the height 12 in. [300 mm].

-Individual diameters and heights shall be within $\frac{1}{8}$ in. [3 mm] of the prescribed dimensions. The base and the top shall be open and parallel to each other and at right angles to the axis of the cone.

-The mold shall be provided with foot pieces and handles similar to those shown in Fig. 1.

-The mold shall be constructed without a seam

-The interior of the mold must be smooth and free from projections.

-The mold shall be free from dents, deformation, or adhered mortar.

(5.2)

-Acquire a round, smooth, straight steel rod, that will be the tamping rod, with a $\frac{5}{8}$ in. [16 mm] $6 \frac{1}{16}$ in. [2 mm] diameter. The length shall be at least 4 in. [100 mm] greater than the depth of the mold in which rodding is being performed, but not greater than 24 in. [600 mm] in overall length.

- Make both ends rounded to a hemispherical tip of the same diameter as the rod.

(5.3)

-Acquire a measuring device marked in increments of $\frac{1}{4}$ in. [5 mm] or smaller

(5.4)

-Acquire a scoop of a size large enough so each amount of concrete obtained from the sampling receptacle and small enough so it is not spilled during placement in the mold.

-----Section 6-----

(6.1)

-Acquire concrete in accordance with practice C172/C172M

-----Steps from 7----

(7.1)

-Dampen the mold and place it on a rigid, flat, level, moist, nonabsorbent surface, free of vibration, and that is large enough to contain all of the slumped concrete.

-Immediately fill the mold in three layers, each approximately one third the volume of the mold

-Place the concrete in the mold using the scoop described in 5.4. Move the scoop around the perimeter of the mold opening to ensure an even distribution of the concrete with minimal segregation.

(7.2)

- Rod each layer 25 times uniformly over the cross section with the rounded end of the rod.

- For the bottom layer, this will necessitate inclining the rod slightly and making approximately half of the strokes near the perimeter, and then progressing with vertical strokes spirally toward the center. Rod the bottom layer throughout its depth. For each upper layer, allow the rod to penetrate through the layer being rodded and into the layer below approximately 1 in. [25 mm].

(7.3)

-After the top layer has been rodded, strike off the surface of the concrete by means of a screeding and rolling motion of the tamping rod. Continue to hold the mold down firmly and remove concrete from the area surrounding the base of the mold to preclude interference with the movement of slumping concrete.

-Remove the mold immediately from the concrete by raising it carefully in a vertical direction. Raise the mold a distance of 12 in. [300 mm] in 5 6 2 s 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 and complete it within an elapsed time of 2 1/2 min.

(7.4)

-4 Immediately measure the slump by determining the vertical difference between the top of the mold and the displaced original center of the top surface of the specimen

(8.1)

- Report the slump in terms of inches [millimetres] to the nearest 1/4 in. [5 mm] of subsidence of the specimen during the test.

Important guidelines for testing

(9.1)

-Deliver concrete and test at a low slump.

-Add water and mix into the remaining concrete to independently produce moderate and finally high-slump concrete.

-Use a double dosage of a chemical retarder to attempt to minimize slump losses and maintain workability of the concrete.

-Record concrete temperatures ranged from 86 to 93 °F [30 to 34 °C]

Possible Variable Names

-Top_Diameter_Mold_1 : This is the top diameter of the mold

-Top_Diameter_Mold_2 : This is the top diameter of the mold 90 degrees apart from the first

-Bottom_Diameter_Mold_1 : This is the bottom diameter of the mold

-Bottom_Diamete_Mold_2 : This is the bottom diameter of the mold 90 degrees apart from the first

-Height_Mold_1 : This is the height of the mold

-Height_Mold_2 : This is the height of the mold 90 degrees apart from the first

-Tampingrod_diameter : This is the tamping rod diameter

-Tampingrod_length : This is the tamping rod length

-Mold_Thickness_1 : This is the mold thickness at 1 and 1/2 inches from the top of the mold

-Mold_Thickness_2 : This is the mold thickness 180 degrees from the first

-Concrete_Slump : Vertical difference between top of the mold and displaced top of the specimen.