



Performance Examination - Concrete

Standard Method of Test for Slump of Hydraulic Cement Concrete (AASHTO T 119M / T 119-18) [ASTM C143 / C143M-15a]

Candidate Name: _____ NICET ID: _____

Apparatus	Trial 1	Trial 2
<p>Mold 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 of less than 0.045 in. (1.15 mm). Plastic molds shall be ABS plastic or equivalent 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).</p> <p>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).</p> <p>Individual diameters and heights shall be within $\pm \frac{1}{8}$ 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.</p> <p>The mold shall be constructed without a seam. The interior of the mold shall be relatively smooth and free from projections. The mold shall be free from dents, deformation, or adhered mortar.</p>		
<p>Tamping Rod A round, smooth, straight steel rod, with a $\frac{5}{8}$ in. (16 mm) $\pm \frac{1}{16}$ in. (2 mm) diameter. The length of the tamping rod 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. The rod shall have the tamping end or both ends rounded to a hemispherical tip of the same diameter as the rod.</p>		
<p>Measuring Device A ruler, metal roll-up measuring tape or similar rigid or semi-rigid length measuring instrument marked in increments of $\frac{1}{4}$ in. (5 mm) or smaller. The instrument length shall be at least 12 in. (300 mm)</p>		
<p>Scoop Of a size large enough so each amount of concrete obtained from the sampling receptacle is representative and small enough so it is not spilled during placement in the mold.</p>		

Procedures	Trial 1	Trial 2
1. Dampen the interior of the slump mold.		
2. Place the mold on a rigid, flat, level, moist, nonabsorbent surface, free of vibration, that is large enough to contain all of the slumped concrete.		
3. Hold the mold firmly in place by standing on the 2-ft. pieces on either side of the mold. A base plate with clamps is also acceptable.		
4. Using a scoop, fill the mold in three layers moving the scoop around the perimeter of the mold opening to ensure an even distribution of the concrete.		

Examiner Name: _____ Examiner Signature: _____ Date: _____



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Procedures (continued)	Trial 1	Trial 2
5. For the first layer: Fill the mold to approximately 1/3 of its volume (2 ⁵ / ₈ in. (70 mm); Rod the layer 25 times throughout its depth with the rounded end of the tamping rod. Uniformly distribute the strokes over the cross section of the layer; incline the rod slightly near the perimeter, and progress spirally toward the center.		
6. For the second layer: Fill the mold to approximately 2/3 of its volume, approximately 6- ¹ / ₈ in. (160 mm); Rod the layer 25 times with the rounded end of the tamping rod, penetrating through the second layer and approximately 1 in. (25 mm) into the first layer. Uniformly distribute the strokes over the cross-section of the layer.		
7. For the third layer: Heap concrete above the top of the mold; rod the layer 25 times with the rounded end of the tamping rod, penetrating through the third layer and approximately 1 in. (25 mm) into the second layer. Uniformly distribute the strokes over the cross-section of the layer. Should rodding result in the concrete falling below the top of the mold, add concrete to keep an excess above the mold. Continue the rodding count from the value reached before concrete was added to the mold.		
8. Strike off the top surface of the concrete with the tamping rod in a screeding and rolling motion.		
9. While maintaining downward pressure, remove any concrete around the base of the mold during strike off.		
10. Immediately remove the mold by raising the mold in a steady, vertical direction. There should be no lateral or torsional motion of the mold while lifting. Lift the mold off the concrete, a distance of 12 in. (300 mm), in 5 ± 2 s.		
11. Complete the slump test, from the start of filling the mold through the removal of the mold, in 2½ minutes. If a decided falling away or shearing off of concrete from one side or portion of the mass occurs, disregard the test.		
12. Immediately measure the slump the vertical distance between the top of the mold and the original displaced center of the top surface of the specimen.		
13. Report the slump to the nearest ¼ in. (5 mm).		

First Attempt: Pass: _____ Fail: _____ Second Attempt: Pass: _____ Fail: _____

Exam Administration: Remote _____ In-Person _____

Comments:

Examiner Name: _____ Examiner Signature: _____ Date: _____