Method of Test for Temperature of Freshly Mixed Portland Cement Concrete

1. Scope:

This test method covers the determination of temperature of freshly mixed Portland cement concrete.

2. Apparatus:

- 2.1 Temperature measuring device. A temperature measuring device capable of measuring the temperature of the freshly mixed concrete to ± 1°F, having a range from 30 to 120°F. The design shall be such that it allows 3" or more of immersion during operation.
- 2.2 Container. The container shall be made of non-absorptive material and large enough to provide at least 3" of concrete in all directions around the sensor of the temperature measuring device.

3. Procedure:

- 3.1 Place the temperature measuring device in the freshly mixed concrete so that the temperature sensing portion is submerged a minimum of 3". Gently press the concrete around the temperature measuring device at the surface of the concrete so that ambient air temperature does not affect the reading.
- 3.2 Leave the temperature measuring device in the freshly mixed concrete for a minimum of 2 minutes or until the temperature reading stabilizes, record temperature.
- 3.3 Complete the temperature measurement of the freshly mixed concrete within 5 minutes after obtaining the sample. For volumetric mixed concrete complete within 10 minutes after obtaining sample.

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

4. Report:

4.1 Record the measured temperature of the freshly mixed concrete to the nearest 1°F on a DOT-23.

5. References:

DOT-23 ASTM C1064