

KTMR-26 TEST METHOD FOR COMPRESSIVE STRENGTH OF HYDRAULIC CEMENT MORTARS (USING 50 mm OR 2 in CUBE SPECIMENS) (Kansas Central Lab Test KT-MR-26)

a. SCOPE

This method of test determines the mortar strength ratio of fine aggregates. KT-MR-26 closely follows the testing procedures found in AASHTO T 106.

b. REFERENCED DOCUMENTS

b.1. AASHTO M 92: Standard Specification for Wire Cloth and Sieves for Testing Purposes

b.1. AASHTO M 231: Weighing Devices Used in the Testing of Materials

b.2. AASHTO T 106: Compressive strength of Hydraulic Cement Mortar (Using 50-mm or 2-in Cube Specimens)

b.3. ASTM C 778: Standard Specification for Standard Sand

c. APPARATUS

c.1. Balance meeting AASHTO M 231 Class G2, with a capacity of 2000 g.

c.2. Flow Table, Testing machine (compression), Cube Molds, Trowel, and Glass graduates as specified in AASHTO T 106

c.3. 9.5 mm ($\frac{3}{8}$ in) sieve as specified in AASHTO M 92

c.4. Standard 20-30 sand as specified in ASTM C 778

d. SAMPLE PREPARATION

d.1. Test Mortar

d.1.a. Combine 500 g of type III cement, 1500 g of saturated surface dry aggregate passing the 9.5 μm ($\frac{3}{8}$ in) sieve, and sufficient water to produce a flow of 100-115%, as outlined in AASHTO T 106 Section 10.3.

d.1.b. Place approximately 220 mL of water in a metal bowl, add the cement and hand mix for 30 seconds. Add half of the aggregate and mix for 30 seconds, then add the remainder of the aggregate and mix for 30 seconds, for a total mixing time of 90 seconds.

d.1.c. Determine the flow of the mortar as outlined in AASHTO T 106, using the quantities and mixing procedures above.

d.1.d. Adjust the mixing water as required to achieve the 110-115% flow. Approximately 1mL of water will change the flow by one percent.

e. REFERENCE MORTAR

e.1. The reference mortar consists of 500 g of the same Type III cement used in the test mortar, 1500 g of standard 20-30 sand, and sufficient water to produce a flow of 100 to 115%.

e.2. The mixing and determination of flow is as described in Section **d.**

f. TEST SPECIMENS

f.1. The test specimens shall be molded cured and tested as in AASHTO T 106.

g. CALCULATIONS

g.1. Mortar Strength Ratio = $\frac{\text{average compressive strength of the test mortar}}{\text{average compressive strength of the reference mortar}}$