Standard Method of Test for
Procedure to Determine Aggregate Correction Factor Using the Pressure Meter (ASTM C231)
SCDOT Designation: SC-T-40 (11/15)

1.   SCOPE

This test method covers the aggregate correction factor to determine the actual percent air in a pre-approved mix design.

2.   REFERENCED DOCUMENTS

ASTM C231

3.   PROCEDURE

3.1   Obtain samples of fine and coarse aggregates from the same sources shown on the pre-approved mix design.

3.2   Oven dry aggregates and let cool.

3.3   Compute the weight of fine and coarse aggregates to fill the 0.25 cubic foot pressure meter pot. The fine to coarse aggregate ratio must be the same as the mix design.

3.4   Place a small amount of water in pot and place all fine aggregate in pressure meter pot followed by additional water if needed to completely cover fine aggregate. Stir and tap the sides of the pot to remove any entrapped air. Keep fine aggregate covered with water.

3.5   Gradually place scoopfuls of coarse aggregate in pressure meter pot keeping aggregate covered with water. Remove any foam that may be present. Lightly rod the upper 1" of the aggregate eight to twelve times. Stir after each addition of aggregate to eliminate entrapped air.

3.6   Keep aggregate covered with water.

3.7   Place short tube in bottom of top section of pressure meter lid and mark the petcock on top of the meter lid that the tube is attached. Clamp top of pressure meter lid to pot.

3.8   Ensure entrapped air is removed by filling the pressure meter with water in the petcock with the short tube until a steady stream of water is visible. Gently tap meter to ensure all entrapped air has been released.

3.9   Pump pressure to the pre-determined initial pressure.

3.10   Close petcocks.

3.11   Place curved tube on petcock with the short tube.

3.12   Bleed off 5% of water using the calibrated vessel.

3.13   Release pressure, rerun and determine new percent.

SC T 40 Form

Fs = mass of fine aggregate in concrete sample under test, lb
S = volume of concrete sample (same as volume of measuring bowl), ft³
B = volume of concrete produced per batch, ft³
Fb = total mass of fine aggregate used in batch, lb
Cs = mass of coarse aggregate in concrete sample under test, lb
Cb = total mass of coarse aggregate used in batch, lb

Fine aggregate

Fs = (S/B) X Fb

Fs = (_____ / _____) X _____

Fs = _____ lbs

Coarse Aggregate

Cs = (S/B) X Cb

Cs = (_____ / _____) X _____

Cs = _____ lbs

Aggregate Correction Factor

Find new percent from step 3.13

New percent - 5% = Aggregate correction factor

_____ % - 5 % = _____ Aggregate correction factor

Date _____ Tested by _____