



Transport
Roads & Maritime
Services

Test method T319

Saturated surface dry moisture content of
fine aggregate

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Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D.Dash	May 1999
		Date on Test Method Revised to Agree with Date on Revision Summary	D.Dash	Feb 2001
Ed 2/ Rev 0	All	Reformatted RMS template	J Friedrich	October 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T319 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T319

Saturated surface dry moisture content of fine aggregate

1. Scope

This method sets out the procedure for the determination of the saturated surface dry moisture content or absorption of fine aggregate. This figure is required in the preparation of concrete mixes and is an excerpt from Test Method T210.

2. Apparatus

- (a) A balance of 1 kg capacity, accurate and readable to 0.1 g
- (b) A metal dish approximately 350 mm by 450 mm and 55 mm deep
- (c) A rigid metal conical mould 38 ± 3 mm in diameter at the top, 90 ± 3 mm diameter at the bottom and 75 ± 3 mm high
- (d) A metal tamping rod with a mass of approximately 350 g having a flat circular tamping face 25 mm in diameter
- (e) A thermostatically controlled drying oven with good air circulation maintaining a temperature of 105°C to 110°C

3. Procedure

- (a) Wash the sample thoroughly to remove all material finer than a $75\mu\text{m}$ Australian Standard Sieve.
- (b) Transfer the washed sample to the metal dish and drain off as much water as possible by decantation care being taken to avoid loss of aggregate.
- (c) Cover the aggregate with distilled water and agitate gently or stir with a glass rod to remove any entrapped air from the surface of the aggregate.
- (d) Allow the sample to remain immersed for period of 24 hours.
- (e) At the end of the period of soaking, drain the water off carefully and expose the aggregate to a gently moving current of warm air, stirring frequently to achieve uniform drying.
- (f) Continue drying until the aggregate approaches the free-flowing condition.
- (g) To assess the saturated surface dry condition, place part of the aggregate in the conical mould and tamp lightly using 25 blows of the tamper.
- (h) Lift the mould vertically, If free moisture is present, the core of aggregate will retain its shape.
- (i) Continue drying with constant stirring until the cone of aggregate just slumps on removal of the mould, which indicates that the saturated surface dry condition has been reached.

Note: If the cone of fine aggregate slumps at the first test, it is possible that the aggregate has been dried past the saturated surface dry condition. In this case, add a few millilitres of water, mix thoroughly and allow the aggregate to stand in a covered container for 30 minutes. Resume the process of drying and testing until the saturated surface dry condition is achieved.

- (j) Immediately the saturated surface dry condition has been reached, take 500 g of the material and determine its mass (Mass *B*).
- (k) Place the material in drying oven and dry to constant mass (Mass *A*).

4. Calculations

$$\text{Percentage Moisture Content} = \frac{B - A}{A} \times 100$$

5. Reporting

Report as percentage water absorption or the saturated surface dry moisture content.