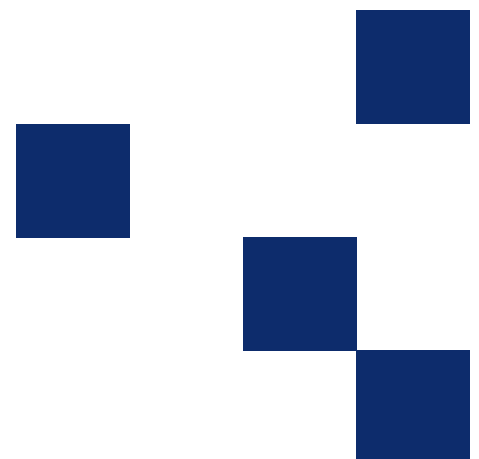




Test method T130

Dry density/moisture relationship of road construction materials (Blended in the laboratory with cementitious binders)

OCTOBER 2012



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D. Dash	May 1999
	Scope, 5.1.1 (a) (e)	Revised.	D. Dash	Sept 1999
Ed 1/Rev 0	All	New issue. Preparation of bound sub-sample moved to T105. Testing made consistent with T111.	G Donald	Nov 2007
Ed 1/Rev 1	3(i)	Clarify preparation.	D Hazell	Jan 2010
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 T130 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T130

Dry density/moisture relationship of road construction materials (Blended in the laboratory with cementitious binders)

1. Scope

This test method sets out the procedure to determine the relationship between moisture content and dry density of road construction materials (including earthworks) blended with cementitious binders such as cement or lime or blends of these with flyash and/or 'slag'.

The method uses Standard or Modified compaction on independent sub-samples having different moisture contents.

NOTE: The method has been adapted from BS 1924, ASTM D558, AS 1289.5.1.1 and AS 1289.5.2.1.

2. General

- (a) The test is performed on material:
 - (i) Passing the 19.0 mm AS sieve
 - (ii) Blended in the laboratory with cementitious binders
- (b) Standard compaction shall be used unless otherwise specified Apparatus

3. Apparatus, Preparation, Procedure, Calculations and Reporting

This test method is identical to T111 except for the time constraints in **Table 1** and the following amendments:

- (i) Preparation requirements are those for T130 listed in Table 2 of T105 (i.e. the portion passing the 19.0 mm AS sieve)
- (ii) Step 5 Procedure is to include the following amendments:
 - 5.2 (b) Add the required mass of binder (M_B) calculated in T105 to sub-sample 1
 - Mix and record the time at the commencement of mixing
 - Immediately adjust the moisture content of the sub-sample to approximate OMC and thoroughly mix

NOTE: The calculation for the quantity of water is according to T105 Process (A.9)
Store the sub-sample in a loose state in a sealed container at $23^\circ \pm 2^\circ\text{C}$ and cure for the period specified in Table 1.

NOTE: If stored at a temperature outside the specified range, record and report the temperature.
 - 5.2 (f) Level the specimen to the top of the mould by means of the straightedge. Patch any holes developed in the surface by replacing coarse material with smaller sized material. Record the time
 - 5.3 (a) Remove sub-sample 2 from the sealed container and add the required mass of binder (M_B) calculated in T105
 - Mix the sub-sample and record the time at the commencement of mixing
 - Immediately adjust the moisture content of the sub-sample and thoroughly mix

NOTE: If the first sub-sample was obviously above OMC, compact the remaining sub-samples at lower moisture contents. Suitable increments of moisture content range from 1% for gravels up to 3% for clays.

The calculation for the quantity of water is according to T105 Process (A.9)
Store the sample in a loose state in a sealed container at $23^\circ \pm 2^\circ\text{C}$ and cure for the period specified in Table 1

NOTE: If stored at a temperature outside the specified range, record and report the temperature.

- 5.4 (a) Remove the next sub-sample from the sealed container and add the required mass of binder (M_B) calculated in T105

Mix the sub-sample and record the time at the commencement of mixing

Immediately adjust the moisture content of the sub-sample and thoroughly mix

NOTE: If the second sub-sample was obviously above OMC, compact the remaining sub-sample(s) at lower moisture contents.

The calculation for the quantity of water is according to T105 Process (A.9).

Store the sample in a loose state in a sealed container at $23^\circ \pm 2^\circ\text{C}$ and cure for the period specified in Table 1

NOTE: If stored at a temperature outside the specified range, record and report the temperature.

- (iii) Include in the report the type, sources and percentage of binder used, and reference to this test method

Table 1 Time Constraints

Test Method/ Steps	Description	Time constraint (i)	
		Fast Setting Binder (Working time < 4 hrs)	Slow Setting Binder (Working time > 6 hrs)
T130 5.2(b) or 5.3(a) or 5.4(a)	Incorporate binder into each sample	Start of timing	Start of timing
T130 5.2(b) or 5.3(a) or 5.4(a)	Curing period.	Approximately 15 mins after incorporating binder	Approximately 1 hr after incorporating binder
T111 5.2(f)	Completion of moulding each sub-sample.	Within approximately 30 mins after incorporating binder	Within approximately 1¼ hrs after incorporating binder

NOTE: Working time as defined in T147.