



**Transport**  
Roads & Maritime  
Services

# Test method T103

Pre-treatment of road construction materials by artificial weathering

OCTOBER 2012



## 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	New Issue.	G. Donald	July 2006
Ed 2/Rev 1	3(e), (f); 4, 5(d), (e)(ii); 6(b)	Apparatus; Oversize; decanting, heating. Oversize reported.	D. Hazell	Jan 2010
Ed 3/ 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 T103 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T103

## Pre-treatment of road construction materials by artificial weathering

### 1. Scope

This test method sets out the procedure for pre-treating road construction materials by subjecting the material to cyclic wetting and drying.

### 2. General

- (a) This method is used where the resistance of the road construction material to weathering is suspect (e.g. shale's, siltstones and other soft laminated or jointed rocks)
- (b) This method simulates the breakdown of potentially unstable material under environmental and service conditions
- (c) This method must precede T102 where both T102 and T103 are specified on the same sample
- (d) This method is to be carried out prior to any subsequent testing

### 3. Apparatus

- (a) A hotplate or burner
- (b) Oven with good air circulation capable of maintaining a temperature not exceeding 80°C
- (c) Suitable dishes
- (d) Mixing and stirring apparatus
- (e) Suitable equipment for decanting water from the dish and collecting the water
- (f) Wire gauze

### 4. Preparation

Prepare samples in accordance with T105. Record percentage by mass of material retained on the 53 mm AS sieve (to the nearest 1%)

### 5. Procedure

- (a) Place the sample into dishes, spreading the material evenly over the area of each dish.
- (b) Add sufficient water to keep the sample immersed.
- (c) Allow to stand for at least 16 hours.
- (d) Decant only the clear water taking care not to lose fines. Re-use the decanted water in subsequent wetting of the material.

*NOTE: Loss of fines could affect the results in subsequent testing.*

- (e) Dry the material completely:
  - (i) For material containing gypsum or significant amounts of organic matter, place the dish and sample in the oven at a temperature not exceeding 80°C.

*NOTE: Drying at over 80 °C alters these materials (e.g. loss of crystalline water in gypsum).*

- (ii) For other materials, cover the dish containing the material with a wire gauze and dry the material on a hotplate taking care not to bake the material after drying is complete. Accelerate evaporation and prevent overheating the sample by stirring occasionally.

*NOTE: The drying period will vary with the type of material and the size of the sample. A guide to when the sample is dry is when the fines no longer stick to the spatula when the sample is being stirred.*

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- (f) Allow to cool. Repeat the wetting and drying processes in Steps (b) to (e) until 10 cycles have been completed.

## 6. Reporting

Include the following in subsequent reporting:

- (a) Designate the method of pre-treatment as **W**.
- (b) The percentage by mass of material retained on the 53 mm AS sieve from T105 (to the nearest 1%).
- (c) Reference to this test method.