



**Transport**  
Roads & Maritime  
Services

# Test method T367

Field simulated curing and testing of  
moulded concrete specimens

OCTOBER 2012



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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 T367 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T367

## Field simulated curing and testing of moulded concrete specimens

### 1. Scope

- (a) This test method sets out the procedure for estimating the insitu compressive strength of concrete, based on test specimens which have been moulded in the field and cured under non-standard field conditions.
- (b) The method attempts to simulate the insitu curing conditions for a concrete pavement, and includes compression testing in accordance with AS 1012.9.
- (c) The method is applicable to concrete for road pavements, particularly a base (upper) layer.

### 2. Test Specimens

- (a) The test specimens must be 100 mm diameter cylinders complying for size with AS 1012.8, except for steel fibre reinforced concrete (SFRC).

For SFRC, the test specimens must comply for size with AS 1012.8 and be of the following diameter:

- For fibre length  $\leq 33$  mm: 100 mm
  - For fibre length  $> 33$  mm: 150 mm
- (b) Moulding of specimens must comply with Test Method T304.

### 3. Simulated Curing

- (a) Spray the exposed concrete surface of the specimens with the same curing compound and application rate as used on the pavement.
- (b) For initial curing, store the cylinder specimens in their moulds on a rigid horizontal surface for 18 - 36 hours. Lids and subsequent moist curing are not to be used. An insulating wrapping which complies with AS 1012.8 Clause 1.9.2 may be placed around the perimeter of the specimen but the upper surface must be treated in a way which simulates the surface of the pavement.
- (c) After 18 - 36 hours from moulding, embed the specimens in gravel or sand to within 10 mm of the top of the specimens, in accordance with the following conditions. The fill must extend horizontally at least 300 mm beyond the moulds, graded on the surface to shed water away from the specimens. The fill must not be treated in any way which creates abnormally favourable curing conditions.
- (d) The specimens must be cured adjacent to either their place of moulding or the concrete pavement which they represent, in the same conditions of temperature, moisture and wind to which the pavement is subjected. The specimens must neither be protected from any natural ambient conditions nor be subjected to any artificial curing conditions, unless the pavement is so treated.
- (e) The specimens may remain in their moulds during the full simulated curing period, but if the Contractor elects to demould at an earlier time, they must be wrapped tightly in a dry water-tight plastic bag except for the upper surface which must remain exposed to the environment. The demoulding, wrapping and rebedding operation must be completed within 30 minutes, during which time the specimens must be maintained in a constant condition of moisture and at ambient temperature.
- (f) The period of simulated curing may be at the Contractor's discretion unless otherwise specified in the documents. The specimens must remain embedded until the time for transport to the laboratory.

#### 4. Transport of Specimens to Laboratory

- (a) At the completion of simulated curing, remove the specimens from the bedding material and, if not already demoulded, demould and wrap them tightly in a dry water-tight plastic bag within 15 minutes.
- (b) Transport the specimens to the testing laboratory so that they are not physically damaged nor subjected to artificial temperature conditions until preconditioning commences.

#### 5. Preconditioning and Testing

- (a) Wet-condition the specimens in water at a temperature of  $23 \pm 5^{\circ}\text{C}$ , either by submersion for between 24 and 48 hours or by vacuum-soaking for 3 hours.
- (b) After preconditioning, but before capping and crushing, test the specimens for mass per unit volume in the saturated-surface-dry condition, in accordance with AS 1012.12.
- (c) Then assess, cap and prepare the specimens for compression testing in accordance with AS 1012.9.
- (d) Test the specimens for compressive strength in accordance with AS 1012.9, within 1 hour of the completion of preconditioning.

#### 6. Calculations

- (a) Without applying any age correction factors to the strength test results, calculate for each pair of specimens the:
  - the difference between the two results
  - average strength
  - ratio of the difference to the average, expressed as a percentage
- (b) If the calculated ratio exceeds 10%, adopt the higher test result of the pair as the indicated strength of the concrete. Otherwise adopt the average strength.

#### 7. Reporting

For each pair of specimens, report the following information:

- (a) Identification numbers
- (b) Location details for the pavement concrete represented
- (c) Date of test
- (d) Age of specimens at test (days)
- (e) Dimensions of specimens (mm)
- (f) Any defects in the specimens, before or after testing
- (g) Mass per unit volume ( $\text{kg}/\text{m}^3$ )
- (h) Indicated compressive strength, to the nearest 0.5 MPa, except where the strength is less than 10MPa, in which case it shall be calculated to the nearest 0.1 MPa.