



**Transport**  
Roads & Maritime  
Services

# Test method T432

## Rate of slaking of quicklime

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	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 T432 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

# Test method T432

## Rate of slaking of quicklime

### 1. Scope

This test method sets out the procedure for determining the rate of slaking of quicklime under specified conditions. The method is derived from the American Society for Testing and Materials Designation C110-76A.

### 2. Apparatus

- (a) Modified Dewar Flask, 665 mL capacity, fitted with rubber gasket covers as described in ASTM C110-76a.
- (b) Mechanical stirrer with a speed of  $400 \pm 50$  rpm fitted with a stirring rod with a round loop on the end which follows the contour of the bottom of the Dewar flask with a clearance not exceeding 6 mm.
- (c) Thermometer, dial type with a range of  $0^{\circ}\text{C}$  to  $100^{\circ}\text{C}$  in increments of  $1^{\circ}\text{C}$ .
- (d) Balance of 200 g capacity accurate and readable to 0.01 g.
- (e) Sampling dividers such as a riffle box or other suitable device of the appropriate size.
- (f) A 4.75 mm A.S. sieve.

### 3. Sample Preparation

Prepare a sample of about 500 g of quicklime to pass the 4.75 mm sieve as rapidly as possible to prevent sample deterioration. Place the prepared sample in an airtight container and allow to come to atmospheric temperature before testing.

**CAUTION:** Quicklime is very corrosive in contact with moisture. Avoid breathing the dust when sieving by wearing a face mask

### 4. Procedure

- (a) Adjust the temperature of about 500 mL of distilled water to  $25^{\circ}\text{C}$ .
- (b) Place 400 mL of the water in the Dewar Flask, set the agitator to revolve at  $400 \pm 50$  rpm and check that the temperature of the water is  $25 \pm 0.5^{\circ}\text{C}$
- (c) Quarter and weigh out 100 g of the prepared quicklime sample and add to the water without delay and put the covers in place immediately.

**CAUTION:** Goggles should be worn while performing the test.

- (d) Read the temperature at 1 min. after adding the quicklime and at 1 min. intervals for the first 5 min. Note the general activity and continue taking readings at 2 min. intervals for 10 min., and 5 min. intervals thereafter, if necessary.

### 5. Calculation

Plot the temperature developed during slaking against time, joining the points with a smooth curve.

From this graph, determine:

- (a) The time taken for the temperature to rise by  $40^{\circ}\text{C}$ .
- (b) The active slaking time, defined as the period up to the commencement of the first five minute period during which the temperature rises by not more than  $0.5^{\circ}\text{C}$ .

### 6. Reporting

Report the time taken for the temperature to rise by  $40^{\circ}\text{C}$  and the active slaking time in minutes.