



Transport
Roads & Maritime
Services

Test method T337

Gelation time for epoxy adhesives for
raised pavement markers

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 1/ 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 T337 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T337

Gelation time for epoxy adhesives for raised pavement markers

1. Scope

This Method sets out the procedure for determining the time from the initial mixing of the reactants of a thermosetting plastic composition to the time when solidification commences, in accordance with the Australian Standard for Adhesives for Raised Pavement Markers (in preparation).

2. Principle

Known test volumes of each adhesive component are conditioned separately for a known period of time and temperature, then mixed together, and the time taken for the mixture to reach an unworkable viscosity is the gelation time.

3. Apparatus

- (a) Paint tin of 500 mL.
- (b) Probe - wooden applicator sticks approximately 2.4 mm in diameter and 15 mm in length or basket weaving cane have been found satisfactory.
- (c) Two pre-mix containers, having a volume between 100 and 105 mL
- (d) An oven, capable of maintaining the conditioning temperature to within 1°C

4. Procedure

The procedure shall be as follows:

- (a) Condition both components at 231°C for at least 4 hrs.
- (b) Transfer not less than 1005 mL of each component to two separate pre-mix containers.
- (c) Empty the contents of the two pre-mix containers into the 500 mL paint tin in the fume cupboard.
- (d) Start the stop watch and mix the components vigorously together for not more than 2 min to form an uniformly coloured mixture.
- (e) Immediately after mixing, probe the centre surface of the mixture every 15 sec using the applicator stick held perpendicular to the mixture surface. For the first measurement of gelation time, probing every 5 minutes to establish the approximate gelation period is recommended.

Note: A mechanical gel time meter may be used. However, the results obtained may not be consistent with results obtained by hand probing.

- (f) When the reacting mixture forms a soft stringy mass in the centre, stop the stop watch.
- (g) Record the elapsed time from the start of mixing as the gelation time.
- (h) Repeat *Procedure (a) to (g)* except that the paint cans and their contents shall be conditioned at $30 \pm 1^\circ\text{C}$ at *Procedure (a)*.

5. Reporting

The report shall include the following:

- (a) The identification of the adhesive, manufacturer and type being tested
- (b) Time and temperature of conditioning of adhesive components
- (c) Method of mixing (i.e. whether a mechanical gel time meter was used for the determination, or any other variation from this method)
- (d) Gel time, to the nearest 15 secs