



Transport
Roads & Maritime
Services

Test method T1222

Shear bond strength for raised pavement markers

NOVEMBER 2012



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D.Dash	June 2001
Ed 2/ Rev 0	All	Reformatted RMS template	J Friedrich	November 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T1222 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T1222

Shear bond strength for raised pavement markers

1. Scope

This Method sets out the procedures for determining the bond strength between raised pavement marker and adhesive.

2. Apparatus

The following apparatus is required:

- (a) A compression testing machine of at least 100 kN capacity and load pacing capabilities.
- (b) Six steel blocks of $(115 \pm 1)\text{mm} \times (55 \pm 1)\text{mm} \times (20.0 \pm 0.1)\text{mm}$.
- (c) Three Teflon spacers of $(115 \pm 1)\text{mm} \times (24.0 \pm 0.1)\text{mm} \times 5\text{ mm}$ (approx).

Note: The adhesive shall be an approved adhesive complying with the requirements of Specification.

Polystyrene foam spacers can be used as an alternative to Teflon. Polystyrene spacers may be removed by the application of 2 or 3 drops of toluene.

Six markers shall be used in the test.

3. Procedure

- (a) Precondition markers and adhesive for 24 hours at $23 \pm 2^\circ\text{C}$.
- (b) Ensure that the markers are clean and dry. Clean both sides of the steel blocks by abrasive blast and by degreasing.
- (c) Set up the steel blocks as shown in Figure 1.
- (d) Mix and apply adhesive to marker in accordance with manufacturer's recommendation. Press marker onto block assembly until the base of the marker comes into contact with the spacer, thus giving a continuous 2 mm layer of adhesive to marker in accordance with manufacturer's recommendation. Press marker onto block assembly until the base of the marker comes into contact with the spacer, thus giving a continuous 2 mm layer of adhesive between the marker and the steel blocks. Remove excess adhesive being careful not to disturb the position of the marker.
- (e) When the adhesive has developed sufficient strength (according to manufacturer's data and the test T339) turn the assembly over and repeat step (d) with a second marker on the opposite face of the blocks.
- (f) Cure for 24 hours at $23 \pm 2^\circ\text{C}$, then tap out the spacer.
- (g) Apply a compressive load to the ends of the steel blocks at a rate of 5 kN per minute until failure occurs.
- (h) Repeat for the remaining four markers to obtain results in triplicate.

4. Calculations

Calculate the shear bond strength as follows:

$$\text{Bond strength (MPa)} = \text{Load (N)} / \text{Area (mm}^2\text{)}$$

$$\text{Where Area} = \text{area of marker less area masked by spacer.}$$

5. Reporting

The report shall include the following:

- (a) The identification of the adhesive, manufacturer and type being tested. The manufacturer, make and style of marker used.
- (b) Any variation from this Method and any failures occurring outside the adhesive bond area.
- (c) The arithmetic mean value of the bond strength in megapascals.
- (d) Whether failure occurred in the bond, the adhesive or the marker.

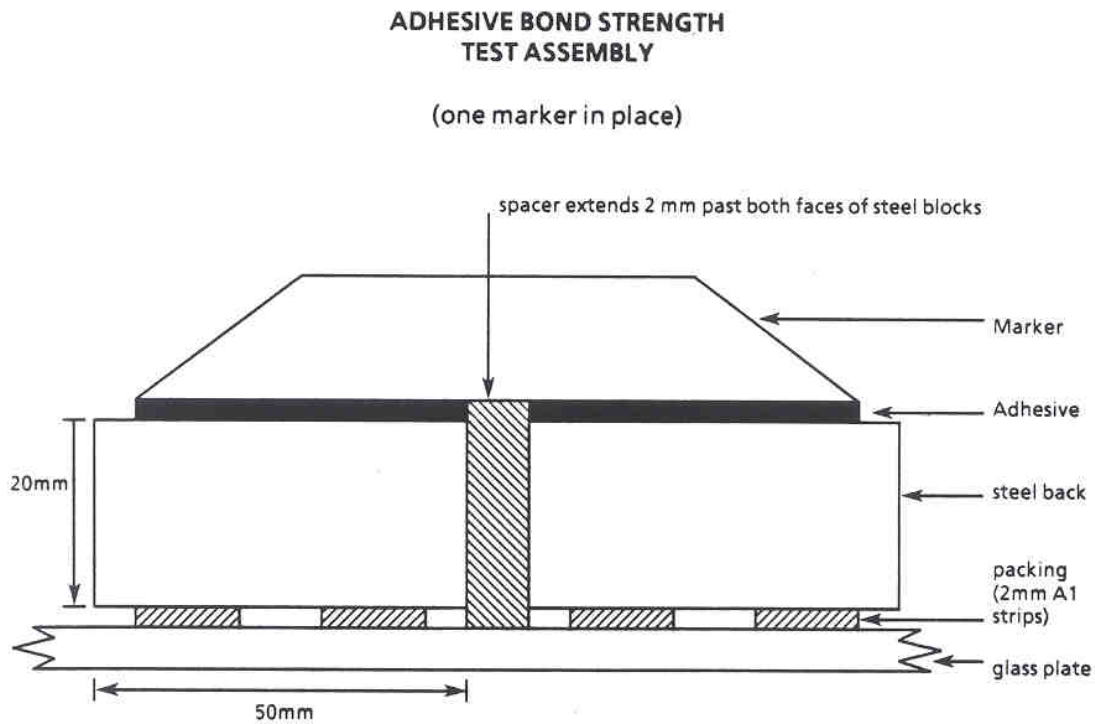


Figure 1