



Transport
Roads & Maritime
Services

Test Method T380

Field Adhesion of Joint Sealant to Concrete

MAY 2013



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
Ed 1/ Rev 0	All	Initial Issue	G. Vorobieff	May 2013

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

The most recent revision to Test Method 380 (other than minor editorial changes) is indicated by a vertical line in the margin as shown here.

The basis of this test method is similar to the procedure described in the Dow Corning Installation Guide Silicone Sealants (APG6278, Form No. 61-507N-01, USA 2002).

Test Method T380

Field Adhesion of Joint Sealant to Concrete

1. Scope

This test method sets out the procedure to assess the insitu adhesion of a joint sealant to concrete.

2. Apparatus

- (a) Hobby knife which is able to cut the joint sealant to its depth inside the joint. A typical set of hobby knives is shown in Figure 1.



Figure 1. A typical set of hobby knives

- (b) Snap-off knife (optional).
 (c) Stainless steel ruler: minimum 300 mm long with reading accuracy 1 mm.
 (d) Felt tip marking pen.
 (e) Screw driver (flat head width to suit the width of the joint).
 (f) Tape measure: minimum 5 m long.
 (g) Digital stop watch with read out in seconds.

3. Procedure

- (a) Place three transverse marks at 0 mm, 25 mm and 50 mm apart onto the sealant and concrete pavement at the location where the sealant is to be cut (see Figure 2).
 (b) Make a first knife cut perpendicular to the edge of joint from one side of the joint to the other, down to the top of the backer rod (see Figure 2).
 (c) Make two identical knife cuts of minimum 50 mm length, from the first cut, closely along two edges of the joint respectively, down to the top of backer rod.
 (d) Use screw driver to peel off the cut sealant tab and examine the above cuts to ensure the sealant has been cut close the edge of the concrete. If the two longitudinal cuts have not been carried out as described in Step (c), select a new test location and commence Step (a).
 (e) Measure the meniscus depth of sealant at the free end of sealant specimen to the nearest millimetre.
 (f) Measure the width of the concrete joint to the nearest millimetre.
 (g) Grasp the top part of sealant tab firmly just beyond the 25 mm mark and uniformly pull at a constant rate at a 90° angle to the concrete surface until the 25 mm long sealant tab stretches to 100 mm length above the concrete surface (see Figure 4). The duration between the commencement of the sealant tab pull at the 25 mm mark and completing the pull to 100 mm length must be between 2 and 3 seconds. Hold the stretched sealant for another 3 seconds before letting go of the sealant.

- (h) Examine bond loss of the joint sealant at the fixed end of the sealant. If bond loss is observed, measure the length of the concrete side with the greatest bond loss using the black mark left on the concrete surface (see Figure 5). Record the bond loss length (B_L) in mm.

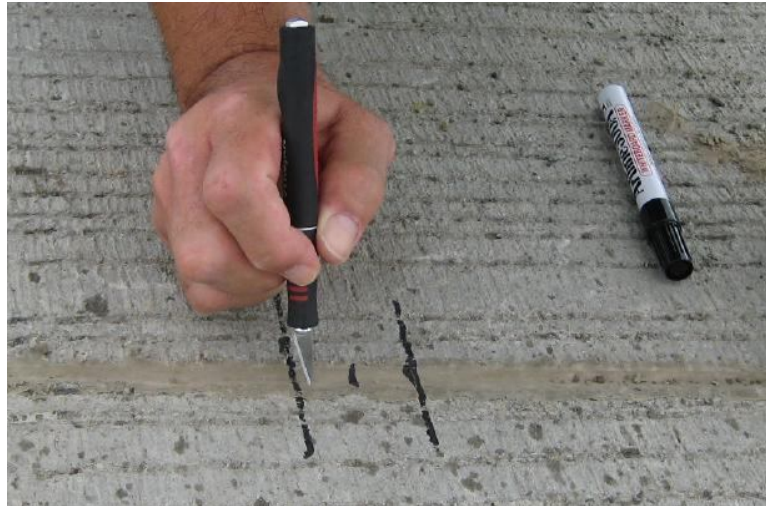


Figure 2. View of the three black marks on the sealant and concrete, and the first cut into the sealant

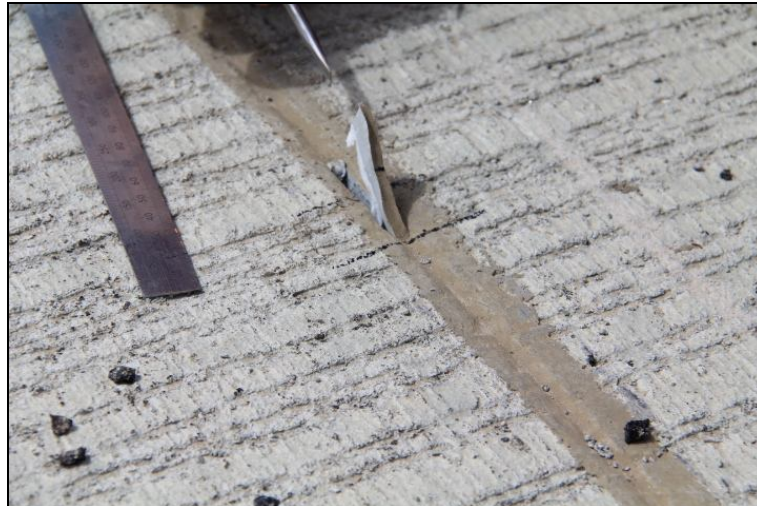


Figure 3. Lifting of sealant tab prior to depth measuring and stretching.



Figure 4. Sealant tab stretched to 100 mm in length above the concrete surface.

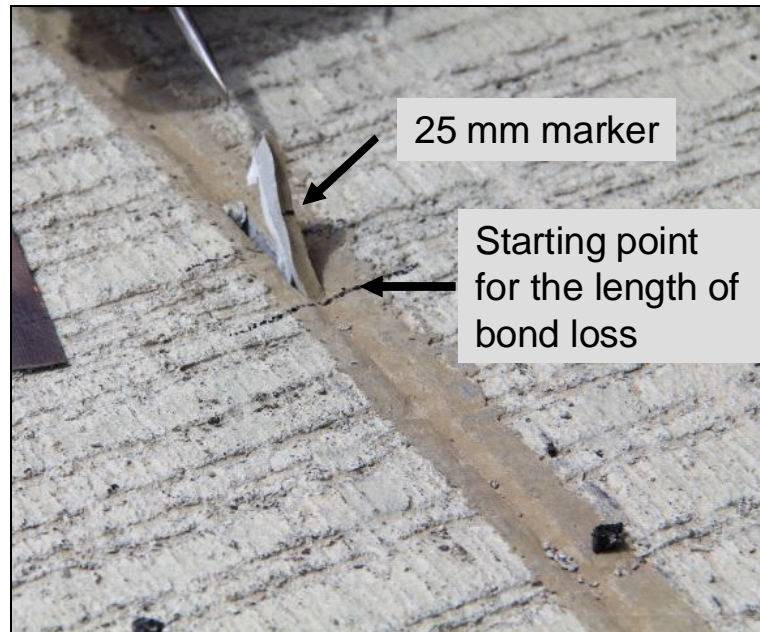


Figure 5. Starting point for the length of bond loss if it occurs.

4. Result

The adhesion test is considered to pass if the 25 mm of sealant is elongated to 100 mm without bond loss.

5. Reporting

Include the following data and results in the report:

- (a) Sawcut width (mm), sealant depth (mm) and sawcut method
- (b) Age of sealant after placement (hours)
- (c) Time, date, and weather condition during the test
- (d) Test location
- (e) Report result as pass or fail. If reporting a fail, include the bond loss length B_L (mm).