



**Transport**  
Roads & Maritime  
Services

# Test method T838

## Adhesive strength of resin

NOVEMBER 2012



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## Revision Summary

| Ed/Rev Number | Clause Number | Description of Revision                | Authorisation | Date          |
|---------------|---------------|----------------------------------------|---------------|---------------|
|               |               | Reformatted and Revision Summary Added | D.Dash        | Jun 2001      |
| Ed 2/ Rev 0   | All           | Reformatted RMS template               | J. Friedrich  | November 2012 |
|               |               |                                        |               |               |
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Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T838 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

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# Test method T838

## Adhesive strength of resin

### 1. Scope

This test method sets out the procedure for assessing the bond strength of resin when applied to concrete. The test method may be extended to apply to other materials such as steel, galvanised steel, aluminium, etc., by the use of suitable test blocks prepared from these materials.

### 2. Preparation of Test Blocks

- (a) Test blocks are prepared in the form of rectangular prisms from 40 MPa concrete using aggregate of 10 mm nominal maximum size. The shape of the blocks is to be such that they may be gripped in a self-aligning testing device and tested in tension with the full load on the bonded face. The bonded faces to have a square cross section of 100 mm by 100 mm.

**Note: Concrete blocks with deformed rod set in them tend to be weakened at the point where the rod ends in the concrete and break prematurely at this point.**

- (b) Cure the test blocks in water or a fog room for 28 days and allow to air dry at a temperature of 20-25°C and a relative humidity of 45-55% for at least 14 days.

### 3. Procedure

- (a) Prepare a suitable amount of the compound to be tested by mixing thoroughly to the instructions and in the proportions recommended by the manufacturers.
- (b) Brush the 100 mm by 100 mm end surfaces of the test blocks with a steel brush and coat the surfaces of two of the test blocks with the mixed compound.
- (c) Place the coated surfaces together in a horizontal position in such a manner that the full surfaces are bonded with no air pockets.
- (d) Allow the bonded joint to cure for seven days under conditions of 20-25°C temperature and 45-55% relative humidity.
- (e) Test the bonded joint in tension by setting the blocks in the self-aligning testing device and applying a force to failure in a tensile testing machine.

### 4. Calculation and Reporting

Record the force at failure and calculate the corresponding stress in MPa. Record the type of failure i.e., whether in the concrete or in the bonded area.

Report the stress at failure and the type of failure.

**Note: If failure occurs in the bonded area the area of failure should be inspected for air pockets and the test repeated if appreciable air pockets exist.**