Transport Roads & Maritime Services

NSW GOVERNMENT

Test method T1163

Resistance of vulcanised rubber to the absorption of oil

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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 T1163 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T1163

Resistance of vulcanised rubber to the absorption of oil

1. Scope

This test method sets out the procedure for assessing the resistance of vulcanised rubber to absorption of oil and consequent swell when immersed in standard oil under specified conditions. The test method is adapted from the American Society for Testing and Materials Designation D471-72.

2. Preparation

The standard test specimen comprises a rectangular sample 25 mm by 50 mm by 2 ± 0.1 mm. Specimens from commercial articles such as joint seals are to be cut to the required rectangular shape and if less than 2 mm in thickness are tested as received. If the material is greater than 2 mm in thickness it should be buffed to a thickness of 2 ± 0.1 mm.

3. Standard Oil

The standard oil used in the immersion of the specimens is to conform to the ASTM Reference Oil No. 3 as specified in ASTM D471-72.

4. Apparatus

(a) Balance of 200 g capacity accurate and readable to 0.2 mg.

(b) A glass test tube with an approximate outside diameter of 38 mm and an overall length of 300 mm fitted loosely with a stopper.

5. Procedure

Three samples for each composition are to be tested.

(a) Determine the mass of each test specimen to the nearest 1 mg and record.

(b) Place the three test specimens in the same test tube containing 100 ml of the test liquid separating the test pieces by means of glass beads.

Note: The test liquid must not be reused.

(c) Bring the test liquid to the temperature specified for the test and maintain it at the temperature for the prescribed period. Test the actual temperature of the liquid in the test tube to ensure that the temperature is within the temperature limits specified.

(d) After the immersion test has proceeded for the prescribed period remove the test specimens and if immersion has been at an elevated temperature cool the specimens in clean oil at room temperature for 30-60 minutes.

(e) After cooling, dip the specimens quickly in acetone, blot lightly with filter paper free from lint and foreign matter and place immediately in tared stoppered weighing bottles and determined the mass of each specimen.

6. Calculation and Reporting

Determine the gain in mass after oil immersion of each specimen and calculate the percentage gain in mass as follows;

$$\text{Gain in Mass per cent} = \frac{GaininMassofSpecimen}{InitialMassofSpecimen} \times 100$$

Report as the percentage gain in mass due to immersion in oil under the conditions specified for the test.

RMS 13.087