Australian Standard™

Methods of test for elastomers

Method 14.2: Adhesion strength of vulcanized or thermoplastic rubber—Two-plate method

PREFACE

This Standard was prepared by the Standards Australia Committee RU-003, Analysis and Testing of Elastomers to supersede AS 1683.14.2—1992, *Methods of test for elastomers*, Method 14.2: *Rubber, vulcanized—Determination of adhesion to metal—Two-plate method.*

The objective of this Standard is to provide manufacturers and users of elastomeric materials with a method for the determination of the adhesive strength of vulcanized or thermoplastic rubber banded to two parallel rigid substrates.

This Standard is identical with and has been reproduced from ISO 814:1996, *Rubber, vulcanized—Determination of adhesion to metal—Two-plate method.*

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to international Standards should be replaced by equivalent Australian Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO		AS	
471	Rubber—Temperatures, humidities and times for conditioning and testing	1683 1683.20	Methods of test for elastomers Method 20: Standard temperatures, humidities and times for conditioning and testing
4648	Rubber, vulcanized or thermoplastic—Determination of dimensions of test pieces and products for test purposes	—	
5893	Rubber and plastics test equipment—Tensile, flexural and compression types (constant rate of traverse)—Description	—	

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WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method for determining the adhesion strength of rubber-to-metal bonds where the rubber part is assembled between two parallel metal plates, using the adhesive system under investigation.

The method is applicable primarily to test pieces prepared in the laboratory under standard conditions, such as may be used to provide data for the development of rubber compounds and control of methods of manufacture.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 471:1995, *Rubber — Temperatures, humidities and times for conditioning and testing.*

ISO 4648:1991, *Rubber, vulcanized or thermoplastic — Determination of dimensions of test pieces and products for test purposes.*

ISO 5893:1993, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Description.*

3 Principle

The test consists in measuring the force required to cause the rupture of a unit of standard dimensions, comprising rubber bonded to two parallel metal plates, the direction of the force being at 90° to the bonded surface.

4 Apparatus

4.1 Tensile-testing machine, complying with the requirements of ISO 5893, capable of measuring force with an accuracy corresponding to grade B as defined in ISO 5893, and with a rate of traverse of the moving grip of 25 mm/min ± 5 mm/min.

NOTE — Inertia (pendulum) type dynamometers are apt to give results which differ because of frictional and inertial effects. An inertialess (for example, electronic or optical transducer) type dynamometer gives results which are free from these effects and is therefore to be preferred.

4.2 Fixtures, for holding the test pieces in the test machine (4.1), which permit accurate centring of the applied load during the test.

A suitable type of fixture is shown in figure 1.

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