

# Australian Standard™

AS 1683.26

## Methods of test for elastomers

### Method 26: Rubber, vulcanized or thermoplastic— Accelerated ageing and heat resistance tests

#### PREFACE

This Standard was prepared by the Standards Australia Committee RU-003, Analysis and Testing of Elastomers to supersede AS 1683.26—1994 *Methods of test for elastomers—Method 26: Rubber, vulcanized—Accelerated ageing or heat-resistance tests*.

The objective of this Standard is to provide manufacturers and users of elastomeric materials with a method for accelerated ageing and heat resistance tests as vulcanized or thermoplastic rubbers.

This Standard is identical with and has been reproduced from ISO 188:1998, *Rubber, vulcanized or thermoplastic—Accelerated ageing and heat resistance tests*.

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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

- Its number appears on the cover and title page while the International Standard number appears only on the cover.
- In the source text, ‘this International Standard’ should read ‘this Australian Standard’.
- 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	
37	Rubber, vulcanized or thermoplastic— Determination of tensile stress-strain properties	1683 1683.11	Methods of test for elastomers Method 11: Tension testing of vulcanized rubber
48	Rubber, vulcanized or thermoplastic— Determination of hardness (hardness between 10 IRHD and 100 IRHD)	1683.15.1	Method 15.1: International rubber hardness
71	Rubber—Temperatures, humidities and times for conditioning and testing	1683.20	Method 20: Standard temperatures, humidities and times for conditioning and testing
11346	Rubber, vulcanized or thermoplastic— Estimation of life-time and maximum temperature of use from an Arrhenius plot	—	



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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 accelerated ageing or heat resistance tests on vulcanized or thermoplastic rubbers. The methods are:

**Method A:** air-oven method using a cell-type oven or cabinet oven with low air speed and ventilation of 3 to 10 changes per hour;

**Method B:** air-oven method using a cabinet oven with forced air circulation by means of a fan and a ventilation of 3 to 10 changes per hour; and

**Method C:** oxygen pressure method at 2,1 MPa and 70 °C.

## 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 37:1994, *Rubber, vulcanized or thermoplastic – Determination of tensile stress-strain properties.*

ISO 48:1994, *Rubber, vulcanized or thermoplastic – Determination of hardness (hardness between 10 IRHD and 100 IRHD).*

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

ISO 11346:1997, *Rubber, vulcanized or thermoplastic – Estimation of life-time and maximum temperature of use from an Arrhenius plot.*

## 3 Principle

Test pieces are subjected to controlled deterioration by air at an elevated temperature and at atmospheric pressure (for 3.1 and 3.2) or at an elevated temperature and an elevated oxygen pressure (for 3.3), after which the physical properties are measured and compared with those of unaged test pieces.

The physical properties concerned in the service application should be used to determine the degree of deterioration but, in the absence of any indication of these properties, it is recommended that tensile strength, stress at intermediate elongation, elongation at break (in accordance with ISO 37) and hardness (in accordance with ISO 48) be measured.