STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1683.21–1982
Methods of test for rubber
Rubber Vulcanized–Determination of abrasion resistance using a rotating cylindrical device

RECONFIRMATION NOTICE

Major stakeholders of this publication have reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 29 August 2018.

NOTES

AS 1683.21—1982
Reconfirmed 2018

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TEST FOR RUBBER

AS 1683.21
RUBBER VULCANIZED—DETERMINATION OF ABRASION RESISTANCE USING A ROTATING CYLINDRICAL DEVICE

PREFACE

This standard was prepared by the Association's Committee on Rubber Analysis and Testing as a result of requests by the Association's Committee for Industrial Hose and Conveyor and Elevator Belting, which had a long-standing need for a method for determining abrasion resistance in certain types of hose and belts.

The method is derived from Doc. ISO/TC 45 WG6 N 641 which is an updated (as of 25 March 1979) version of ISO/DIS 4649 entitled 'Rubber — Determination of Abrasion Resistance Using a Rotating Cylindrical Drum Device'.

The standard requires reference to the following standards:

AS 1152	Test Sieves
AS 1180	Methods of Test for Hose Made from Elastomeric Materials
	1180.9A Hardness of Vulcanized Rubbers of Standard Hardness (35 to 85 IRHD)
AS 1683	Methods of Test for Rubber
	1683.4 Density of Vulcanized Rubber
	1683.20 Standard Temperatures, Humidities and Times for Conditioning and Testing Test Pieces
ASTM D 1765	Standard Classification System for Carbon Blacks Used in Rubber Products
ISO/R 275	Zinc Oxide for Paints.

METHOD

1 SCOPE. This standard sets out a method for determining the resistance of rubber to abrasive forces using a rotating cylindrical drum device.

2 APPLICATION. The method applies primarily to vulcanized rubber. However, it may also be used with a range of other materials, e.g. certain plastics.

NOTE: The method involves the determination of the volume loss of a rubber test piece through abrasive action by rubbing over a specified grade of abrasive cloth. Because factors such as the grade of abrasive particles and adhesive used in the cloth manufacture, and contamination and wear by previous testing lead to variations in the absolute values of abrasion loss, all tests must be comparative, standard rubbers being included so that the results are expressed as a volume loss referred to a calibrated abrasive cloth. No close relation between the results of the abrasion test and service performance can be inferred.

3 DEFINITIONS. For the purposes of this standard, the following definitions apply:

3.1 Abrasion resistance — the resistance to wear resulting from mechanical action upon a surface.

NOTE: In this standard, it is expressed relative to a standard rubber as relative volume loss.

3.2 Relative volume loss — the volume loss, in cubic millimetres, caused by an 'abrasive grade' of cloth equal to 200 mg loss of the standard rubber measured under the same specified conditions.

NOTE: The higher the relative volume loss, the lower is the abrasion resistance.

3.3 Smearing rubber — a rubber which, when interposed between successive tests in standard rubbers, produces a mass loss greater than 10 percent.

4 PRINCIPLE. A cylindrical rubber test piece is subjected to the action of an abrasive cloth (see Clause 5.2) of a specified abrasive grade at a specified contact pressure and over a given area. Abrasion takes place over one of the flat, end surfaces of the cylindrical test piece. The abrasive cloth is attached to the surface of a rotating cylindrical drum against which the test piece is held and across which it is traversed. The loss in mass of the test piece is accurately determined and the volume loss is calculated from the density of the material.