
International Standard



5470

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Rubber or plastics coated fabrics — Determination of abrasion resistance

Supports textiles revêtus de caoutchouc ou de plastique — Détermination de la résistance à l'usure

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5470 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in April 1978.

It has been approved by the member bodies of the following countries :

Austria	India	Sri Lanka
Belgium	Korea, Rep. of	Sweden
Brazil	Mexico	Thailand
Czechoslovakia	Poland	Turkey
Egypt, Arab Rep. of	Romania	USA
France	South Africa, Rep. of	United Kingdom
Germany, F.R.	Spain	USSR
Hungary		

No member body expressed disapproval of the document.

Rubber or plastics coated fabrics — Determination of abrasion resistance

1 Scope and field of application

1.1 This International Standard specifies a method of determining the resistance to abrasion of fabrics coated with rubber or plastics. The abrasion is measured by loss in mass.

1.2 Fabrics coated with rubber or plastics are used in many applications requiring resistance to abrasion. Typical applications are tarpaulins, swimming pool covers, etc. Data obtained by this method may be used to predict the behaviour of these coated fabrics, but not as an absolute criterion. It is preferable to limit the significance of the test by considering it only as a means of control when a fabric attains a resistance superior to a threshold given in comparison with an established minimum standard. This method is for testing the abrasion resistance of the coating only, and is useful for comparison purposes when comparing materials with the same or similar characteristics.

2 Reference

ISO 2231, *Fabric coated with rubber or plastics — Standard atmospheres for conditioning and testing.*

3 Principle

The abrasion resistance of fabrics coated with rubber or plastics is measured by subjecting a test piece to the rubbing action of two abrasion wheels under controlled conditions of pressure by the use of a revolving platform, double-head abrader. This action is maintained by the use of tungsten carbide abrasion wheels¹⁾ and the proper selection of mass for varying the vertical force on the test piece.

4 Apparatus

4.1 Abrasion apparatus²⁾ (see the figure) consisting of :

- a) a removable flat circular test piece holder;
- b) a pair of pivoted arms to which the abrasion wheels are attached;

- c) a motor for rotating the platform and test piece;
- d) a fan for cooling the motor;
- e) a counter for indicating the number of revolutions of the test piece holder.

The test piece holder shall be mounted to produce a circular surface travel of an essentially flat test piece in the plane of its surface at a uniform angular velocity. The abrasion wheels, which are attached to the free end of the pivoted arms, shall rotate and have a peripheral engagement with the surface of the test piece when resting on the test piece. The direction of travel of the periphery of the wheels and of the test piece at the contacting portions shall be at acute angles, the angle of travel of one wheel periphery being opposite to that of the other wheel. Motion of the abrasive wheels, in opposite directions, shall be provided by rotation of the test piece and the associated friction therefrom.

4.1.1 The test piece holder shall be supported by an adapter that is motor-driven and that provides motion for the circular travel of the test piece holder.

4.1.2 A clamping ring shall be used to secure the test piece to the test piece holder.

4.1.3 The abrasive wheels shall be mounted on independently pivoted arms which provide free floating action to compensate for any minor unevenness in the test piece and ensure uniform pressure of the abrasion wheels against the test piece at all times.

4.1.4 The pivoted abrader arms without auxiliary masses or counterweights shall apply a vertical force against the test piece of 2,45 N per wheel (exclusive of the mass of the wheel). A stud on the rear of the abrading arm may be used to carry a counterweight when it is desired to reduce the wheel load from 2,45 N to 1,31 N per wheel when testing thin flexible materials.

4.1.5 The abrader wheel bearings, i.e. the two pairs of bearings installed in the free end of the pivoting arms to support the abrasion wheels, shall not stick when caused to spin rapidly by a quick driving motion of the forefinger.

1) Tungsten carbide wheels are preferred; others may be permitted for the purpose of the test. However these wheels may require dressing in order to re-furbish their abrading surface.

2) The Taber abrader and S 35 wheels, manufactured by Teledyne Taber, North Tonawanda, New York, USA, meet these requirements.