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International Standard



5979

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Rubber or plastics coated fabrics — Determination of flexibility — Flat loop method

*Supports textiles revêtus de caoutchouc ou de plastique — Détermination de la souplesse — Méthode de la boucle plate*

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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 5979 was developed by Technical Committee ISO/TC 45, *Rubber and rubber products*, and was circulated to the member bodies in January 1981.

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

Australia	India	Romania
Austria	Italy	South Africa, Rep. of
Belgium	Korea, Dem. P. Rep. of	Spain
Brazil	Korea, Rep. of	Sri Lanka
Canada	Mexico	Sweden
China	Netherlands	Thailand
Czechoslovakia	Philippines	United Kingdom
Denmark	Poland	USA
France	Portugal	USSR

The member body of the following country expressed disapproval of the document on technical grounds :

Germany, F. R.

# Rubber or plastics coated fabrics — Determination of flexibility — Flat loop method

## 1 Scope and field of application

1.1 This International Standard specifies a method of characterizing the flexibility of some rubber or plastics coated fabrics.

1.2 The method is not applicable to coated fabrics which are prone to rolling up or spiralling when they are cut into pieces of small dimensions, nor is it applicable when the coated fabric is too rigid to make a loop.

1.3 The method may be carried out on :

- a) the coated fabric as delivered;
- b) a coated fabric which has undergone certain specified treatments.

## 2 Reference

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

## 3 Principle

Formation of a loop from a rectangular strip of coated fabric, placed on a horizontal plane, by superposing the two ends which are then held together under a steel bar. Measurement of the height of the loop.

The flexibility is characterized by the height of the loop; this is an inverse measure and the lower the loop height the greater the flexibility.

## 4 Apparatus (see the figure)

The apparatus shall consist of

### 4.1 Flat rectangular board.

NOTE — The dimensions shown in the figure are given as an example; they may be increased to permit the installation of several test pieces on the same board.

The board is equipped near one of its ends with a shoulder having its face perpendicular to the board.

4.2 **Steel bar**, of stainless or non-corrosive steel, having a length of 200 mm and a square section of 20 mm side.

4.3 **Rule**, graduated in millimetres.

## 5 Test pieces

### 5.1 Shape and dimensions

The test piece shall have the shape of a rectangle, 600 mm long and 100 mm wide.

### 5.2 Number

Use three test pieces cut in the longitudinal direction and three test pieces cut in the transverse direction.

### 5.3 Sampling

The test pieces shall be taken so that their outside edges are at a minimum distance of 100 mm from the edges of the coated part. They shall not be taken at a distance less than 1 000 mm from the ends of the coated part or at a location having a fold or an apparent defect.

## 6 Time interval between manufacturing and testing

6.1 For all purposes, the minimum time between manufacturing and testing shall be 16 h.

6.2 For non-product tests, the maximum time between manufacturing and testing shall be 4 weeks and for evaluations intended to be comparable, the tests, as far as possible, should be carried out after the same time interval.

6.3 For product tests, whenever possible, the time between manufacturing and testing should not exceed 3 months. In other cases, tests shall be made within 2 months of the date of receipt by the customer.

## 7 Test conditions

The test shall be carried out at the same temperature and relative humidity as used in clause 8.

## 8 Conditioning of test pieces

The test pieces shall be conditioned for at least 24 h in atmosphere A as defined in ISO 2231.

To avoid any deformation of the test pieces, they shall be placed, during conditioning, on a horizontal surface, the face that is to form the outside of the loop being turned upward.

NOTE — Different results may be obtained for different conditioning atmospheres.

## 9 Procedure

Powder the surface of the board (4.1) evenly with zinc stearate or French chalk. Holding the ends of the test piece between the fingers, place it on the board so that one side rests on the board and one end is against the shoulder (the choice of the side depends on the use of the product; it may be subject to agreement between the interested parties; the test may also be repeated after having reversed the test piece side for side).

Bring the other end onto the first end (so as to form a loop), pressing it also against the shoulder.

Place the steel bar (4.2) on the superimposed ends.

Keep the test piece in this position for 5 min.

Measure, with the rule (4.3), the maximum heights of the two edges of the loop for each of the test pieces with respect to the board.

## 10 Expression of results

**10.1** For each of the two directions there are three test pieces (see 5.2).

**10.2** For each test piece cut in the longitudinal direction, express in millimetres the maximum height of each of the two edges of the loop formed. Take the arithmetic mean of the six values obtained as the result for the longitudinal direction.

**10.3** Repeat the procedure described in 10.2 for test pieces cut in the transverse direction.

## 11 Test report

The test report shall include the following information :

- a) full identification of the product tested;
- b) a reference to this International Standard;
- c) indication or reference to the side(s) on which the results have been obtained;
- d) each individual value obtained;
- e) the arithmetic mean of the results for each test piece :
  - 1) for test pieces cut in the longitudinal direction,
  - 2) for the test pieces cut in the transverse direction;
- f) the condition of the test piece subjected to testing;
- g) whether the test was conducted on coated fabric as delivered or after it had undergone specified treatments (give details);
- h) any deviation, by agreement or otherwise, from the procedure specified.