
INTERNATIONAL STANDARD



1798

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Flexible cellular materials — Determination of tensile strength and elongation at break

Matériaux alvéolaires souples — Détermination de la résistance à la traction et de l'allongement à la rupture

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Descriptors : rubber, plastics, flexible cellular materials, tests, tension tests, elongation at fracture.

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.

Prior to 1972, the results of the work of the technical committees were published as ISO Recommendations; these documents are in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 45, *Rubber and rubber products*, has reviewed ISO Recommendation R 1798-1971 and found it technically suitable for transformation. International Standard ISO 1798 therefore replaces ISO Recommendation R 1798-1971, to which it is technically identical.

ISO Recommendation R 1798 had been approved by the member bodies of the following countries :

Australia	Hungary	Sri Lanka
Austria	India	Sweden
Brazil	Israel	Switzerland
Canada	Italy	Turkey
Czechoslovakia	Netherlands	United Kingdom
Egypt, Arab Rep. of	New Zealand	U.S.A.
France	Poland	U.S.S.R.
Germany	South Africa, Rep. of	
Greece	Spain	

No member body had expressed disapproval of the Recommendation.

No member body disapproved the transformation of the Recommendation into an International Standard.

Flexible cellular materials – Determination of tensile strength and elongation at break

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for determining the strength and deformation properties of flexible cellular material when a test piece is extended at a constant rate until it breaks.

2 REFERENCE

ISO 1923, *Cellular materials – Determination of linear dimensions*.¹⁾

3 DEFINITIONS

For the purposes of this International Standard, the following definitions apply :

3.1 tensile strength : The maximum force required to break the test piece, divided by its original cross-sectional area.

3.2 elongation : The change in gauge length of the test piece, determined at the time of break, expressed as a percentage of its original gauge length.

4 APPARATUS

Power-driven machine, complying with the following requirements :

- the rate of travel of the power-actuated grip shall be 500 ± 50 mm/min and shall be uniform at all times;
- the sensitivity shall be such that the breaking load of the test piece can be measured with an accuracy of ± 1 %.

5 TEST PIECES

5.1 Direction of sampling

If the product shows a predominant direction of the cellular structure (orientation of the cells), the test pieces for the tensile test shall be taken in such a way that their

longitudinal axes lie at right angles to this predominant direction. If this is not possible, the location of the longitudinal axis with respect to the predominant direction shall be stated in the test report.

5.2 Shape and dimensions

The test piece shall be rectangular in cross-section, without surface skin, and without visible defects. The tensile test pieces shall be cut with a test piece cutter in accordance with the figure and shall be 10 to 15 mm thick.

Dimensions in millimetres

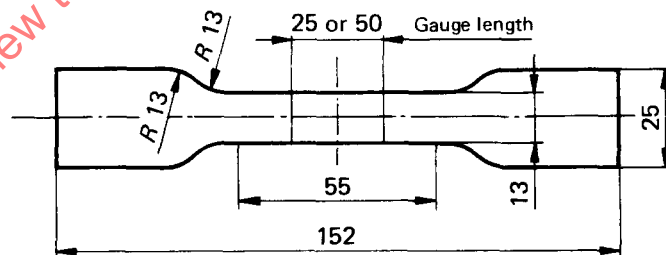


FIGURE – Test piece cutter

5.3 Number of test pieces

Five test pieces shall be tested.

5.4 Conditioning

Materials shall not be tested for at least 72 h after manufacture. Prior to the test, the material from which the test pieces are to be cut shall be conditioned for at least 16 h in one of the following atmospheres :

- 20 ± 2 °C, 65 ± 5 % relative humidity;
- 23 ± 2 °C, 50 ± 5 % relative humidity;
- 27 ± 2 °C, 65 ± 5 % relative humidity.

1) At present at the stage of draft. (Revision of ISO 1923-1972 and ISO/R 1794-1971.)