

INTERNATIONAL STANDARD

**ISO
2440**

Third edition
1997-09-15

Flexible and rigid cellular polymeric materials — Accelerated ageing tests

*Matériaux polymères alvéolaires souples et rigides — Essais
de vieillissement accéléré*



Reference number
ISO 2440:1997(E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 2440 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This third edition cancels and replaces the second edition (ISO 2440:1983), which has been technically revised.

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Flexible and rigid cellular polymeric materials – Accelerated ageing tests

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, for flexible and rigid cellular polymeric materials, laboratory procedures which are intended to imitate the effects of naturally occurring reactions such as oxidation or hydrolysis by humidity. The physical properties of interest are measured before and after the application of the specified treatments.

Test conditions are only given for open-cellular latex, both open- and closed-cell polyurethane foams, and closed-cell polyolefin foams. Conditions for other materials will be added as required.

The effect of the ageing procedures on any of the physical properties of the material may be examined, but those normally tested are either the elongation and tensile properties, or the compression or indentation hardness properties.

These tests do not necessarily correlate either with service behaviour or with ageing by exposure to light.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

3 Apparatus

3.1 For heat ageing

3.1.1 Oven, with forced circulation, capable of maintaining the required temperature to within ± 1 °C.

NOTE — It is recommended that a device be used to record the temperature, preferably continuously.

3.2 For humidity ageing

3.2.1 Ageing apparatus, of such a size that the total volume of the test pieces does not exceed 10 % of the free air space, and such that the test pieces are free of strain, freely exposed to the ageing atmosphere on all sides and not exposed to light.

3.2.2 Steam autoclave or similar vessel, capable of maintaining the required temperature to within ± 1 °C and of withstanding absolute pressures up to 300 kPa.