

INTERNATIONAL STANDARD

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Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing

*Supports textiles revêtus de caoutchouc ou de plastique — Atmosphères normales
de conditionnement et d'essai*



Reference number
ISO 2231 : 1989 (E)

Foreword

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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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 2231 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*.

This second edition cancels and replaces the first edition (ISO 2231 : 1973), clauses 3 and 4 of which have been technically revised (see clauses 5 and 6 in revised text). In addition, a new clause on pre-conditioning has been introduced (clause 4 in revised text).

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Introduction

Most coated fabrics contain a certain amount of moisture absorbed from the air with which they are in contact, and the amount of moisture depends on the quantity of water vapour in the air.

Certain properties, particularly mass and those concerned with the breaking of threads, are affected by the moisture content of the fabric. In order to standardize methods of test it is, therefore, important to control the moisture content of the material under test. This is done by conditioning test pieces in an atmosphere of controlled humidity before testing. For some other properties, the effect of the moisture content of the fabric is minimal, and it is only necessary to condition for temperature.

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1 Scope

This International Standard specifies the requirements for conditioning and methods of conditioning employed for rubber- or plastics-coated fabrics.

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 554 : 1976, *Standard atmospheres for conditioning and/or testing — Specifications*.

3 Definitions

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

3.1 reference atmosphere: A theoretical atmosphere to which values of characteristics determined under different atmospheric conditions can be related when the relevant conversion factors are known.

NOTE — The standard reference atmosphere is specified in ISO 554.

3.2 standard atmosphere for conditioning and for testing: Actual atmosphere in which tests are made.

3.3 method of conditioning: Characteristic atmosphere and time of exposure to it for a coated fabric in the accomplishment of a test.

3.4 standard condition: Condition reached by the coated fabric when it is in equilibrium with a standard atmosphere for conditioning and testing.

3.5 moisture equilibrium: Equilibrium reached by the coated fabric when, after free exposure to air in motion, there is no appreciable change in mass.

4 Pre-conditioning

When the textile substrate is of a highly hygroscopic material or where the method of test requires a high degree of accuracy, equilibrium (see 3.5) shall be approached from the dry side of the hysteresis curve by pre-conditioning the test pieces in an atmosphere having a relative humidity of not greater than 10 % and a temperature of between 60 °C and 70 °C.

NOTE — Air at 65 % relative humidity and 20 °C will, when heated at constant pressure to between 60 °C and 70 °C, have a relative humidity of approximately 5 %. Higher temperatures can lead to changes in some coatings.

5 Characteristics of test atmospheres

The use of one of the following atmospheres shall be fixed by the particular standard or specification for each test or material. The choice of one of these alternatives will depend on the prevalent usage in individual countries and the variant used shall be reported in the test report.

Atmosphere "A"

- temperature $20\text{ °C} \pm 2\text{ °C}$;
- relative humidity $65\text{ %} \pm 5\text{ % R.H.}$

Atmosphere "B"

- temperature $23\text{ °C} \pm 2\text{ °C}$;
- relative humidity $50\text{ %} \pm 5\text{ % R.H.}$

Atmosphere "C" (tropical)

- temperature $27\text{ °C} \pm 2\text{ °C}$;
- relative humidity $65\text{ %} \pm 5\text{ % R.H.}$

Atmosphere "D" (temperature control only)

- temperature $23\text{ °C} \pm 2\text{ °C}$.

Atmosphere "E" (tropical temperature control only)

- temperature $27\text{ °C} \pm 2\text{ °C}$.

6 Methods of conditioning

The use of one of the following methods of conditioning shall be fixed by the particular standard or specification for each test or material. The method used shall be reported in the test report.

6.1 Method of conditioning "1"

The test pieces shall be freely exposed to the standard atmosphere "A", "B" or "C" until they are in equilibrium. Equilibrium with the standard atmosphere is deemed to have

been reached when successive weighings, at intervals of 2 h, of the test pieces freely exposed to the moving air, differ by less than 0,1 %.

For fabrics coated on one side only, a minimum of 16 h exposure is recommended.

For fabrics coated on both sides, a minimum of 24 h is recommended.

6.2 Method of conditioning "2"

The test pieces shall be freely exposed to the standard atmosphere "D" or "E" for a period of 3 h.

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