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Third edition
2022-08

**Rubber- or plastics-coated fabrics —
Measurement of gas permeability**

*Supports textiles revêtus de caoutchouc ou de plastique — Mesure de
la perméabilité aux gaz*



Reference number
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

This third edition cancels and replaces the second edition (ISO 7229:2015), which has been technically revised.

The main changes are as follows:

- in 5.4, Figure 1 has been divided into a) and b);
- in 6.3.10, θ (delay time) has been added to the key in Figure 3.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The measurement of the permeability of rubber-or plastics-coated fabrics to gases is important in the evaluation of materials for products such as leisure boats, balloons or hoses, and other gas containers in addition to the materials for seals and diaphragms. The permeability of the material is crucial when a product is exposed to differential pressure conditioned environment in its service field.

Rubber- or plastics-coated fabrics — Measurement of gas permeability

WARNING — Persons using this document should be familiar with normal laboratory practice. This document 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 conform to any national regulatory conditions.

1 Scope

This document specifies two methods for measuring gas transmission through rubber- or plastics-coated fabrics, a property known as permeability.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2231, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing*

ISO 2286-3, *Rubber- or plastics-coated fabrics — Determination of roll characteristics — Part 3: Method for determination of thickness*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

gas transmission rate

volume of test gas passing through a test piece per unit area, per unit time with unit partial-pressure difference between the two sides of the test piece

3.2

gas permeability coefficient

volume of test gas passing through a test piece of unit thickness, per unit area, per unit time with unit partial-pressure difference between the two sides of the test piece

3.3

gas transmission curve

curve plotted against time, in the pressure sensor method, of the pressure change on the low-pressure side of the test cell until the gas transmission reaches a steady state after starting the test

Note 1 to entry: See [Figure 3](#).