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**Materials used as cigarette papers,  
filter plug wrap and filter joining  
paper, including materials having a  
discrete or oriented permeable zone  
and materials with bands of differing  
permeability — Determination of air  
permeability**

*Matériaux utilisés comme papier à cigarettes, pour le gainage des  
filtres et comme papier manchette, y compris les matériaux possédant  
une zone perméable discrète ou orientée et les matériaux à bandes de  
perméabilité diverses — Détermination de la perméabilité à l'air*





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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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*, Subcommittee SC 1, *Physical and dimensional tests*.

This fourth edition cancels and replaces the third edition (ISO 2965:2009), which has been technically revised. The main changes compared to the previous edition are as follows.

- Use of a 0,30 cm<sup>2</sup> test piece holder has been allowed for measurement of small paper areas.
- [Formula \(E.3\)](#) has been corrected.

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](http://www.iso.org/members.html).

## Introduction

Measurements of air permeability of materials used as cigarette papers have been made for many years. The methods have required development and change because of the changing nature of the paper products and changes in the magnitude of their air permeability.

This method has been developed with the technical resources of Cooperation Centre for Scientific Research Relative to Tobacco (CORESTA).



# Materials used as cigarette papers, filter plug wrap and filter joining paper, including materials having a discrete or oriented permeable zone and materials with bands of differing permeability — Determination of air permeability

## 1 Scope

This document specifies a method for the determination of air permeability (AP).

It is applicable to materials used as cigarette papers, filter plug wrap and filter joining paper, including materials having an oriented permeable zone or discrete permeable zones where the measured permeability is in excess of  $10 \text{ cm}^3 \cdot (\text{min}^{-1} \cdot \text{cm}^{-2})$  at 1 kPa. In addition, it is applicable to banded cigarette papers, with bands of a width of at least 4 mm.

NOTE For an estimate of the air permeability of materials outside the scope of this document, see Note 3 in [5.1.2](#) and [7.6.1.4](#).

## 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 187, *Paper, board and pulps — Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples*

ISO 3402, *Tobacco and tobacco products — Atmosphere for conditioning and testing*

## 3 Terms and definitions

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

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1

#### air permeability

##### AP

air flow, measured in cubic centimetres per minute, passing through  $1 \text{ cm}^2$  surface of the test piece at a measuring pressure ([3.2](#)) of 1,00 kPa

Note 1 to entry: The air permeability units are  $\text{cm}^3 \cdot (\text{min}^{-1} \cdot \text{cm}^{-2})$  at 1 kPa.

### 3.2

#### measuring pressure

difference in pressure between the two faces of the test piece during the measurement