
**Tobacco and tobacco products —
Atmosphere for conditioning and
testing**

*Tabac et produits du tabac — Atmosphère de conditionnement et
d'essai*

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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).

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).

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.

This document was prepared by Technical Committee ISO/TC 126, *Tobacco and tobacco products*.

This fifth edition cancels and replaces the fourth edition (ISO 3402:1999), which has been technically revised.

The main changes are as follows:

- editorial changes have been applied to the Scope;
- the mandatory Normative references clause ([Clause 2](#)) has been added;
- the Terms and definitions have been harmonized with ISO 4387, and these terms have been consistently used throughout the document;
- the main header Atmosphere specifications (see [Clause 4](#)) was created for Conditioning atmosphere and Test atmosphere (renumbered as [4.1](#) and [4.2](#), respectively); the text in these subclauses was editorially revised for clarity, consistency, and references to withdrawn standards have been removed;
- duration of conditioning has been revised for clarity; text describing long term storage has been removed since this document is not for storage of tobacco products;
- references in the Bibliography have been removed; they did not support this document or were for standards that have been withdrawn.

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 results of certain tests of tobacco, tobacco products, and specific materials used in the manufacture of tobacco products are affected by environmental conditions such as temperature and humidity. Therefore, standardization of the environmental conditions is required to assure comparable results for these tests.

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Tobacco and tobacco products — Atmosphere for conditioning and testing

1 Scope

This document specifies the atmosphere for the conditioning and testing of samples of tobacco and tobacco products.

It is primarily applicable to cigarettes; however, if not specified differently in other ISO standards, it can also be applied to tobacco, other tobacco products, and materials used in the manufacture of tobacco products for which prior conditioning is necessary. Standards for the conditioning and testing of other forms of tobacco, tobacco products, and materials can refer to all or part of this document.

2 Normative references

There are no normative references in this document.

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

conditioning

process of equilibrating a sample to a specified temperature and humidity prior to testing

Note 1 to entry: The conditioning occurs either in the laboratory or in a special enclosure.

Note 2 to entry: The period of time depends on the nature of the tobacco and tobacco product to be tested.

3.2

laboratory sample

Representative sample of tobacco and tobacco products intended for laboratory inspection or testing

3.3

test sample

tobacco and tobacco products taken at random from the *laboratory sample* (3.2) and which is representative of the laboratory sample

3.4

conditioning sample

tobacco and tobacco products selected from the *test sample* (3.3) for *conditioning* (3.1)

3.5

test portion

portion of tobacco and tobacco products prepared for a single determination and which is selected from the *test sample* (3.3) or *conditioning sample* (3.4), as appropriate

3.6

atmosphere

ambient conditions defined by one or more of the following parameters:

- temperature;
- relative humidity;
- pressure

3.7

conditioning atmosphere

atmosphere in which a *conditioning sample* (3.4) is kept before being subjected to a test

Note 1 to entry: It is characterized by specified values for temperature and relative humidity.

3.8

test atmosphere

atmosphere to which a test portion is exposed throughout the test

Note 1 to entry: It is characterized by specified values for temperature, relative humidity and pressure.

4 Atmosphere specifications

4.1 Conditioning atmosphere

The conditioning atmosphere shall be as follows:

- temperature $(22 \pm 1) ^\circ\text{C}$;
- relative humidity $(60 \pm 3) \%$.

The specified tolerances listed above define the atmosphere immediately surrounding the conditioning sample. The atmosphere surrounding the conditioning sample shall be maintained at a mean temperature range of $(22 \pm 1) ^\circ\text{C}$ and a mean relative humidity range of $(60 \pm 3) \%$. The duration of the time interval for calculation of the mean values should be defined by the testing laboratory as appropriate for sample conditioning. The temperature and relative humidity shall be monitored during conditioning.

NOTE Short term excursions in the conditioning atmosphere due to opening of the doors of the conditioning environment, etc., are accepted as unavoidable.

4.2 Test atmosphere

The test atmosphere shall be as follows:

- temperature $(22 \pm 2) ^\circ\text{C}$;
- relative humidity $(60 \pm 5) \%$.

The test atmosphere shall be maintained at a mean temperature range of $(22 \pm 2) ^\circ\text{C}$ and a mean relative humidity range of $(60 \pm 5) \%$. The duration of the time interval for calculation of the mean values should be defined by the testing laboratory as appropriate for sample testing. The temperature and relative humidity shall be monitored during testing.

The atmospheric pressure shall be measured and included in the test report if it is outside the range 86 kPa to 106 kPa.

NOTE Short term excursions in the test atmosphere due to opening of the doors of the testing environment, etc., are accepted as unavoidable.

5 Conditioning procedure

5.1 Duration of conditioning

Place the conditioning sample in the conditioning atmosphere specified in [4.1](#).

In current practice, conditioning for 48 h using a forced air flow is generally found to be sufficient for loose cigarettes. This conditioning time may be insufficient for certain samples such as cigarettes packed in bulk or when loose cigarettes are conditioned without forced air flow.

Transfer the test portions to the testing location in airtight containers (just large enough to contain the portions) unless the testing location and the conditioning location are adjoining.

The air flow shall be sufficient to condition loose cigarettes in the specified period. Excessive air flow can result in improper conditioning.

5.2 Checking of equilibrium

Equilibrium shall be considered to be attained when either

- a) the relative variation of the mass of the conditioning sample is not greater than 0,2 % in 3 h, or
- b) the conditioning sample placed in a closed container of a volume similar to that of the conditioning sample gives rise to a relative humidity in the container equal to that of the conditioning atmosphere.

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