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Tobacco and tobacco products — Draw resistance of cigarettes and pressure drop of filter rods — Standard conditions and measurement

Tabac et produits du tabac — Résistance au tirage des cigarettes et perte de charge des bâtonnets-filtres — Conditions normalisées et mesurage

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Foreword

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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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 126, *Tobacco and tobacco products*, Subcommittee SC 1, *Physical and dimensional tests*.

This fifth edition cancels and replaces the fourth edition (ISO 6565:2011), which has been technically revised.

Introduction

The draw resistance of cigarettes or the pressure drop of filter rods is a widespread and important concept both for product quality specifications and for analytical determinations by mechanical smoking.

Different procedures and apparatus are currently available for this determination. It has so far not been possible to standardize the complete description of the equipment to be used and the detailed procedure. Nevertheless, it has been possible to obtain broad consensus on the definitions to be adopted and the conditions that allow comparable determinations of this characteristic to be made. In order to achieve this, one of the main requirements is the use of transfer standards for the calibration of instruments (see Annex A).

In this International Standard, the results are given in pascals (Pa). For information, they are also given in millimetres water gauge (mmWG).

The values given previously in mmWG are converted into Pa using the following correction factor:

— 1 mmWG = 9,806 7 Pa

For practical use, the values have been rounded.

Tobacco and tobacco products — Draw resistance of cigarettes and pressure drop of filter rods — Standard conditions and measurement

1 Scope

This International Standard describes a method for the measurement of the draw resistance of cigarettes and pressure drop of filter rods, and specifies the standard conditions applicable to such measurements.

It is applicable to cigarettes, filter rods, and, by extension, to cylindrical tobacco products similar to cigarettes.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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.

3.1
pressure drop
Δp
static pressure difference between the two ends of

— a test piece completely encapsulated in a measuring device such that no air can pass through the outer membrane (or wrapping),

— a pneumatic circuit, or

— a *pressure drop transfer standard* (3.6)

when it is traversed by an air flow under steady conditions in which the measured volumetric flow, under standard conditions, at the *output end* (3.4) is 17,5 ml/s, as defined in ISO 3402

Note 1 to entry: This is expressed in pascals (Pa) (or in mmWG).

3.2
draw resistance
Δp_D
negative pressure which has to be applied to the *output end* (3.4), under test conditions (see ISO 3402), in order to sustain a volumetric flow of 17,5 ml/s, exiting at the output end, when the cigarette is encapsulated in a measurement device to a depth of approximately 9 mm, as defined in ISO 3308

Note 1 to entry: Any ventilation zones and the tobacco rod are exposed to the atmosphere.

Note 2 to entry: The concept of draw resistance can also be subjectively judged when a cigarette is smoked by a consumer/taste panel. Under such circumstances, draw resistance is not measured objectively because the conditions of the formal definition are not met.