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Drawing and writing instruments — Ball point pens and roller ball pens — Vocabulary

Instruments de dessin et d'écriture — Stylos à pointe bille et stylos rollers — Vocabulaire

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 10, *Technical product documentation*.

This second edition cancels and replaces the first edition (ISO 12756:1998), of which it constitutes a minor revision in Clause 2, Bibliography, 3.1.3, 3.1.4, 3.1.7 and 3.2.2.1.

It also incorporates the Amendment ISO 12756:1998/Amd 1:2011.

Drawing and writing instruments — Ball point pens and roller ball pens — Vocabulary

1 Scope

This document defines terms related to ball point pens and roller ball pens.

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 terminological databases for use in standardization at the following addresses:

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

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1 General

3.1.1
pen
writing instrument equipped with a feeding system which deposits a writing fluid on a surface

Note 1 to entry: It is available in a refillable or non-refillable (disposable) form.

3.1.2
ball pen
pen (3.1.1) with a writing fluid feeding system based on a rotatable ball writing tip integrated either within the pen itself or within a *refill* (3.1.6)

3.1.3
ball point pen
ball pen (3.1.2) which deposits a writing fluid with a dynamic viscosity greater than 1 000 mPa·s (1 000 cP) at 23 °C ± 2 °C, except gel ink ball pens

Note 1 to entry: A gel ink ball pen is defined in ISO 27668-1 as a ball pen which deposits a writing fluid whose viscosity decreases markedly with rotation of the ball when writing and increases back to or near to the original viscosity in non-movement, i.e. when not writing.

3.1.4
roller ball pen
ball pen (3.1.2) which deposits a writing fluid with a dynamic viscosity of less than 20 mPa·s (20 cP) at 23 °C ± 2 °C, except gel ink ball pens

3.1.5
cartridge
disposable container for the writing fluid, which is detached when empty and replaced by a (new) full container

Note 1 to entry: See also ISO 9175-1.

3.1.6
refill
identifiable assembly of components, usually removable from a complete *pen* (3.1.1), with which it is possible to write independently of the complete pen, but which lacks either characteristics or components which would make it suitable for use as a pen

3.1.7
write test machine
device for mechanically generating a line with a *pen* (3.1.1) or *refill* (3.1.6) on a writing surface and which can be adjusted for

— a writing angle between 60° and 90°,

— writing load from 0,1 N to 5 N,

— writing speed between 1 m/min and 10 m/min, and

— line pitch between 1 mm and 5 mm,

with a continuous spiral line (100 mm circumference) and a fixed or rotating motion along the longitudinal axis of the pen or refill; the writing surface is to be placed on a polished stainless steel plate

3.2 Test parameters

3.2.1 Resistance to chemical influences including water

3.2.1.1
water resistance
ability of a line written on specified testing paper to remain visible after immersion in distilled or de-ionized water for a specified length of time

3.2.1.2
ethanol resistance
ability of a line written on specified testing paper to remain visible after immersion in a specified ethanol solution for a specified length of time

3.2.1.3
hydrochloric acid resistance
ability of a line written on specified testing paper to remain visible after immersion in a specified hydrochloric acid solution for a specified length of time

3.2.1.4
ammonium hydroxide resistance
ability of a line written on specified testing paper to remain visible after immersion in a specified ammonium hydroxide solution for a specified length of time

3.2.1.5
bleaching resistance
ability of a line written on specified testing paper to remain visible after treatment in a specified bleaching solution for a specified length of time

3.2.2 Resistance to physical influences

3.2.2.1
erasure resistance
ability of a line written on specified testing paper to resist erasure using specified procedures with a specified eraser without altering the surface of the testing paper

3.2.2.2
light resistance
ability of a line written on specified testing paper to remain visible after exposure to specified light for a specified length of time

3.2.3 Other parameters

3.2.3.1
strike through
condition in which a writing fluid has penetrated through specified testing paper so as to appear on the opposite side of the paper from the written line

3.2.3.2
drying time
length of time required for a line drawn on specified testing paper to become non-smearing

Note 1 to entry: The drying time test estimates the resistance to transference to skin and to superimposed paper, under specified conditions.

3.2.3.3
reproducibility
ability of an original written line to be reproduced by a specified photocopier, microfilm processor or telefacsimile machine

3.2.3.4
shelf life
minimum expected storage life, measured from the date of manufacture, during which the product maintains its specified performance when stored under specified conditions, and during which the *pen* (3.1.1) or *refill* (3.1.6) is unused

3.2.3.5
cap-off time
length of time during which an unused *roller ball pen* (3.1.4) maintains its writing ability when stored horizontally without its cap after writing

3.2.3.6
writing speed
rate of line generation

3.2.3.7
point load
vertical component of force applied to a writing tip during line generation

3.2.3.8
writing angle
included angle measured from the plane of the writing surface to the longitudinal axis of a pen or refill when in writing position

Bibliography

[1] ISO 9175-1, *Tubular tips for hand-held technical pens using India ink on tracing paper — Part 1: Definitions, dimensions, designation and marking*

[2] ISO 12757-1, *Ball point pens and refills — Part 1: General use*

[3] ISO 12757-2, *Ball point pens and refills — Part 2: Documentary use (DOC)*

[4] ISO 14145-1, *Roller ball pens and refills — Part 1: General use*

[5] ISO 14145-2, *Roller ball pens and refills — Part 2: Documentary use (DOC)*

[6] ISO 27668-1, *Gel ink ball pens and refills — Part 1: General use*

[7] ISO 27668-2, *Gel ink ball pens and refills — Part 2: Documentary use (DOC)*