



SLOVENSKI STANDARD

SIST EN ISO 385:2005

01-junij-2005

Laboratorijska steklovina – Birete (ISO 385:2005)

Laboratory glassware - Burettes (ISO 385:2005)

Laborgeräte aus Glas - Büretten (ISO 385:2005)

Verrerie de laboratoire - Burettes (ISO 385:2005)

Ta slovenski standard je istoveten z: **EN ISO 385:2005**

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ICS:

17.060	Merjenje prostornine, mase, gostote, viskoznosti	Measurement of volume, mass, density, viscosity
71.040.20	Laboratorijska posoda in aparati	Laboratory ware and related apparatus

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 385

April 2005

ICS 17.060; 71.040.20

English version

Laboratory glassware - Burettes (ISO 385:2005)

Verrerie de laboratoire - Burettes (ISO 385:2005)

Laborgeräte aus Glas - Büretten (ISO 385:2005)

This European Standard was approved by CEN on 14 April 2005.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 385:2005 (E)**Foreword**

This document (EN ISO 385:2005) has been prepared by Technical Committee ISO/TC 48 "Laboratory glassware and related apparatus" in collaboration with Technical Committee CEN/TC 332 "Laboratory equipment", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2005, and conflicting national standards shall be withdrawn at the latest by October 2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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The text of ISO 385:2005 has been approved by CEN as EN ISO 385:2005 without any modifications.

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INTERNATIONAL STANDARD

**ISO
385**

First edition
2005-04-15

Laboratory glassware — Burettes

Verrerie de laboratoire — Burettes

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Reference number
ISO 385:2005(E)

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Published in Switzerland

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ISO 385:2005(E)**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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 385 was prepared by Technical Committee ISO/TC 48, *Laboratory glassware and related apparatus*, Subcommittee SC 6, *Laboratory and volumetric ware*.

This first edition cancels and replaces ISO 385-1:1984, ISO 385-2:1984 and ISO 385-3:1984, which have been technically revised and combined into one document.

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Laboratory glassware — Burettes

1 Scope

This International Standard provides metrological and construction requirements for an internationally acceptable series of burettes, suitable for general laboratory purposes.

The details specified are in accordance with the principles of design and construction of volumetric glassware given in ISO 384.

NOTE For piston burettes, see ISO 8655-3.

2 Normative references

The following referenced documents are indispensable for the application 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 384:1978, *Laboratory glassware — Principles of design and construction of volumetric glassware*

ISO 719, *Glass — Hydrolytic resistance of glass grains at 98 °C — Method of test and classification*
<https://standards.iteh.ai/catalog/standards/sist/825e25e6-43e2-4fd5-8709-22247616117a/iso-719-2005>

ISO 4787:1984, *Laboratory glassware — Volumetric glassware — Methods for use and testing of capacity*

3 Terms and definitions

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

3.1

delivery volume

volume of liquid discharged from a volumetric instrument, such as a burette

NOTE Due to retention of liquid on the inner surface of the volumetric instrument, the volume of liquid delivered is not identical with the volume of liquid contained by the volumetric instrument.

3.2

delivery time

time required for the descent of the liquid meniscus from the zero line to the lowest graduation line of the volumetric instrument

3.3

waiting time

time to be observed after apparent completion of the liquid delivery of the volumetric instrument and before the final reading of the delivered volume is taken

NOTE A waiting time applies for burettes Class AS (see 5.2).

ISO 385:2005(E)**4 Basis of adjustment****4.1 Unit of volume**

The basic unit of volume shall be the millilitre (ml), which is equivalent to one cubic centimetre (cm³).

4.2 Delivery volume

Burettes shall be adjusted with water to deliver their volume (Ex), from the zero line to any graduation line, the outflow being unrestricted until approaching the final position of the meniscus. For burettes with a waiting time (Class AS), 30 s shall elapse before final setting of the meniscus.

4.3 Reference temperature

The standard reference temperature, i.e. the temperature at which the burette is intended to deliver its nominal volume (nominal capacity), shall be 20 °C.

When the burette is required for use in a country which has adopted a standard reference temperature of 27 °C (the alternative recommended in ISO 384 for tropical use), this value shall be substituted for 20 °C.

5 Types and classes of accuracy**5.1 Classes of accuracy iTeh STANDARD PREVIEW**

Two classes of accuracy are specified: **(standards.iteh.ai)**

- Class A (subdivided into Classes A and AS) for the higher grade;
- Class B for the lower grade.

5.2 Types of burette

The following two types of burette are specified:

- that for which no waiting time is specified (Classes A and B);
- that for which a waiting time of 30 s is specified (Class AS).

6 Maximum permissible errors

6.1 Errors in the delivered volume shall not exceed the limits given in Table 1. These limits represent the maximum permitted error at any point on the scale, and also the maximum permissible difference between the errors at any two points.

Table 1 — Capacities, subdivisions and maximum permissible error

Nominal capacity ml	Subdivision ml	Maximum permissible error	
		Classes A and AS ml	Class B ml
1	0,01	± 0,006	± 0,01
2	0,01	± 0,01	± 0,02
5	0,01	± 0,01	± 0,02
5	0,02	± 0,01	± 0,02
10	0,02	± 0,02	± 0,05
10	0,05	± 0,03	± 0,05
25	0,05	± 0,03	± 0,05
25	0,10	± 0,05	± 0,10
50	0,10	± 0,05	± 0,10
100	0,20	± 0,10	± 0,20

6.2 If burettes are required with nominal capacities and/or subdivisions other than those listed in Table 1, they shall conform to the essential requirements of this International Standard.

The relationships between maximum permissible error and capacity, as well as between maximum permissible error and meniscus diameter (as given in ISO 384:1978, Annex A and Annex B, shall be observed.

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7 Material

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Burettes shall be manufactured from glass of chemical resistance and thermal properties at least to HGB3 in accordance with ISO 719, shall be as free as possible from visible defects, and shall be free from internal stress. If the burette is of Schellbach tubing, the coloured stripe on the back of the burette shall be durable and shall not exceed 40 % of the circumference of the tube.

NOTE The durability of coloured enamel stripes can be assessed by the test methods specified in ISO 4794.

Some components of burettes may be manufactured from, or have components manufactured from, suitable inert materials such as ceramics or plastics (see 8.3).

8 Construction

8.1 Dimensions

Burettes may be supplied with an auto-zero device and liquid storage reservoir. In this case the overall length of the burette when assembled to the reservoir should not exceed 1 050 mm.

Burettes not provided with such a filling device shall comply with the dimensional requirements shown in Table 2.