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Specification for Burettes

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Laboratory Apparatus Standards Committee (LBC/-) to Technical Committee LBC/27, upon which the following bodies were represented:

- Association of Clinical Biochemists
- British Laboratory Ware Association
- British Lampblown Scientific Glassware Manufacturers Association Ltd.
- Department of Health and Social Security
- Department of Trade and Industry (Laboratory of the Government Chemist)
- Department of Trade and Industry (National Weights and Measures Laboratory)
- Glass Manufacturers' Federation
- Institute of Medical Laboratory Sciences
- Medical Sterile Products Association
- Ministry of Defence
- Society of Chemical Industry

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Foreword

This British Standard has been prepared under the direction of the Laboratory Apparatus Standards Committee.

BS 846 was first published in 1939 and was revised in 1952, 1962 and 1980.

The 1962 revision formed the basis for the development of the ISO

Recommendation ISO/R 385:1964 "*Burettes*". The UK actively participated in the work on the revision and conversion of ISO/R 385 into an International Standard which was started in 1968 by ISO Technical Committee 48, Laboratory glassware and related apparatus. As a result of that work, BS 846:1980 was published, conforming in most respects to the ISO draft under discussion at that time and taking into account UK proposals which were being considered by ISO. Subsequent ISO work has resulted in the publication of an ISO 385-1 to ISO 385-3.

There is no demand in the UK for burettes of a specified waiting time, therefore ISO 385-3 will not be adopted as a British Standard.

In finalizing ISO 385-1:1984 and ISO 385-2:1984 it was not possible to accommodate all the UK comments, and in particular those concerning dimensions, the smallest scale division and delivery time, which were proposed to align with established UK practice.

This British Standard has been prepared by combining ISO 385-1 and ISO 385-2, and taking account of the UK Member Body comments which were not accommodated.

For ease of production Figure 1 to Figure 4 and Appendix A have been taken from ISO 385/1. In these figures the comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Certification. Attention is drawn to the certification facilities offered by BSI described on the inside back cover of this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for a range of burettes suitable for general laboratory use.

Two classes of accuracy are specified.

The details specified in this standard are in conformity with BS 5898.

NOTE The titles of the publications referred to in this standard are listed on page 10.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1

standard reference temperature

the temperature at which the burette is intended to deliver its nominal volume (nominal capacity)

2.2

delivery time

the time occupied by the descent of the water meniscus from the zero line to the lowest graduation line

3 Basis of adjustment

3.1 Unit of volume

The unit of volume shall be either the millilitre or the cubic centimetre.

NOTE The millilitre is commonly used as a special name for the cubic centimetre in accordance with the International System of units (SI).

3.2 Reference temperature

The standard reference temperature shall be 20 °C, except when the burette is required for use in a country that has adopted a standard reference temperature of 27 °C, in which case this value shall be substituted for 20 °C.

NOTE 27 °C is the alternative standard reference temperature recommended in BS 5898 for tropical use.

4 Volumetric accuracy

There shall be two classes of accuracy:

- class A for higher grade burettes;
- class B for lower grade burettes.

5 Limits of volumetric error

Errors in the delivered volume shall not exceed the limits given in Table 1 when tested in accordance with ISO 4787 using water complying with BS 3978.

NOTE 1 These limits represent the maximum permitted error at any point and also the maximum permissible difference between the errors at any two points.

NOTE 2 The relationship between limits of error and capacity for class A burettes is given in Appendix A.

NOTE 3 The relationship between limits of error and the meniscus diameter for class A burettes is given in Appendix B.

Table 1 — Capacities, subdivisions and limits of error

Nominal capacity	Smallest scale division	Limits of error	
		Class A	Class B
mL	mL	mL	mL
1	0.01	± 0.01	± 0.02
2	0.02	± 0.01	± 0.02
5	0.02	± 0.01	± 0.02
10	0.02	± 0.02	± 0.05
10	0.05	± 0.02	± 0.05
25	0.05	± 0.03	± 0.05
25	0.1	± 0.05	± 0.1
50	0.1	± 0.05	± 0.1
100	0.2	± 0.1	± 0.2

NOTE If burettes are required with nominal capacities and/or subdivisions other than those listed in this table, it is recommended that they conform with the essential requirements of this British Standard.

6 Construction

6.1 Material

The burettes shall be manufactured from colourless soda-lime-silica or borosilicate glass complying with class 3 or better of BS 3473-2.

NOTE The burettes should be reasonably free from visible defects and internal stress.

6.2 Dimensions

Burettes shall comply with the dimensional requirements specified in Table 2.