BRITISH STANDARD

BS 2461:1983

Specification for

Gas washing bottles

Confirmed
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Committees responsible for this British Standard

This British Standard was published under the direction of the Laboratory Apparatus Standards Committee LBC/-. Its preparation was entrusted to Technical Committee LBC/25 upon which the following bodies were represented:

British Laboratory Ware Association
British Lampblown Scientific Glassware Manufacturers' Association Ltd.
Chemical Industries Association
Department of Health and Social Security
Department of Industry (Laboratory of the Government Chemist)
Glass Manufacturers' Federation
Institute of Medical Laboratory Sciences
Institute of Science Technology
Royal Society of Chemistry

This British Standard, having been prepared under the direction of the Laboratory Apparatus Standards Committee, was published under the authority of the Board of BSI and comes into effect on
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The following BSI references relate to the work on this standard:
Committee reference LBC/25
Draft for comment 82/51731 DC

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Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

Foreword

This British Standard has been prepared under the direction of the Laboratory Apparatus Standards Committee and supersedes the 1961 edition which is withdrawn.

The first edition of this standard was published in 1954 with the aim of reducing unnecessary variety in the types and sizes of gas washing bottles used in laboratories. The types of bottle specified then were: the ordinary general purpose Drechsel bottle, the Drechsel bottle with a sintered glass distributor and the Muencke bottle.

In the 1961 revision the Drechsel bottle fitted with an upward-facing flat distributor was replaced by one with an inverted dome sintered distributor. The latter had been found to give a better spread of bubbles and to be capable of passing through a considerably smaller ground glass socket than the former; consequently the bottle with the 40/38 (previously B40) joint at the neck was omitted and a 24/29 (previously B24)[1)] joint adopted for all Drechsel bottles. Alternative forms of foot were also introduced for Drechsel bottles to facilitate manufacture.

As in the previous editions, no dimensions have been specified in this revision, but for the specified nominal capacities recommended dimensions have been included to ensure adequate clearance between the bottom of the delivery tube and the inside of the base of the bottle and reasonable uniformity in height above the bench of the entry and exit tubes of similar bottles. Details of the Muencke bottle have been omitted, the design being no longer in common use, and an adjustable Drechsel head has been added.

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 4, 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)] As an interim measure prior to the complete adoption of the ISO designation 24/29, BS 572 permits the use of two alternative designations, namely B24 or B24/29.

1 Scope

This British Standard specifies the nominal sizes and construction of two types of gas washing bottle suitable for general use in laboratories. This standard does not specify dimensions.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Types and sizes

2.1 Types. Gas washing bottles shall be of one of the following two types.

a) Drechsel bottle with a fixed head, as illustrated in Figure 1, with a standard ground joint at the neck and a fixed position dip tube. The form of foot shall be one of those shown in Figure 2.

b) Drechsel bottle with an adjustable head where the height of the dip tube can be adjusted and with other design features as described in item a).

2.2 Sizes. Gas washing bottles shall be of three nominal sizes: 125 mL, 250 mL and 500 mL.

NOTE 1 Attention is drawn to the fact that the hollow foot illustrated in Figure 2(b) increases the capacity of the bottle; consequently, for a given volume of liquid, the effective depth of the liquid may be significantly reduced.
NOTE 2 Table 1 and Figure 1, Figure 3 and Figure 4 give recommended dimensions for gas washing bottles.

3 Construction

3.1 Materials. Gas washing bottles, including the heads and dip tubes, shall be made of clear glass and shall be well annealed. If made from borosilicate glass, this shall comply with the requirements of BS 5895.

NOTE The glass should be reasonably free from visible defects.

3.2 Ground joints. The ground joints of the bottles shall be of size 24/29, complying with the requirements of BS 572.

3.3 Inverted dome sintered distributor. If fitted, the distributor shall be as shown in Figure 3 and shall be of porosity grade numbers 0, 1, 2, or 3, complying with the requirements of BS 1752[2)]. The tubing shall comply with the requirements of BS 5895.

3.4 Fabrication. The foot of the bottle shall be substantial enough to ensure that a bottle, complete with head, shall not topple when placed empty on a surface inclined at 15° to the horizontal.

The lower lip of the head shall be provided with not less than three supports (e.g. indentations) to support the dip tube (see Figure 1 and Figure 4).

NOTE 1 The base of the foot may be lightly ground to ensure stability.
NOTE 2 The outer surface of the head should be provided with opposing flat surfaces to facilitate grip for safe removal.

4 Marking

Each gas washing bottle shall be permanently and legibly marked with the following information:

a) the number and date of this British Standard, i.e. BS 2461:1983[3)];

b) the manufacturer's or vendor's name or identification mark on both the body and the head;

c) the nominal capacity on the body, and also the standard joint size on both the body and the head (see **3.2**);

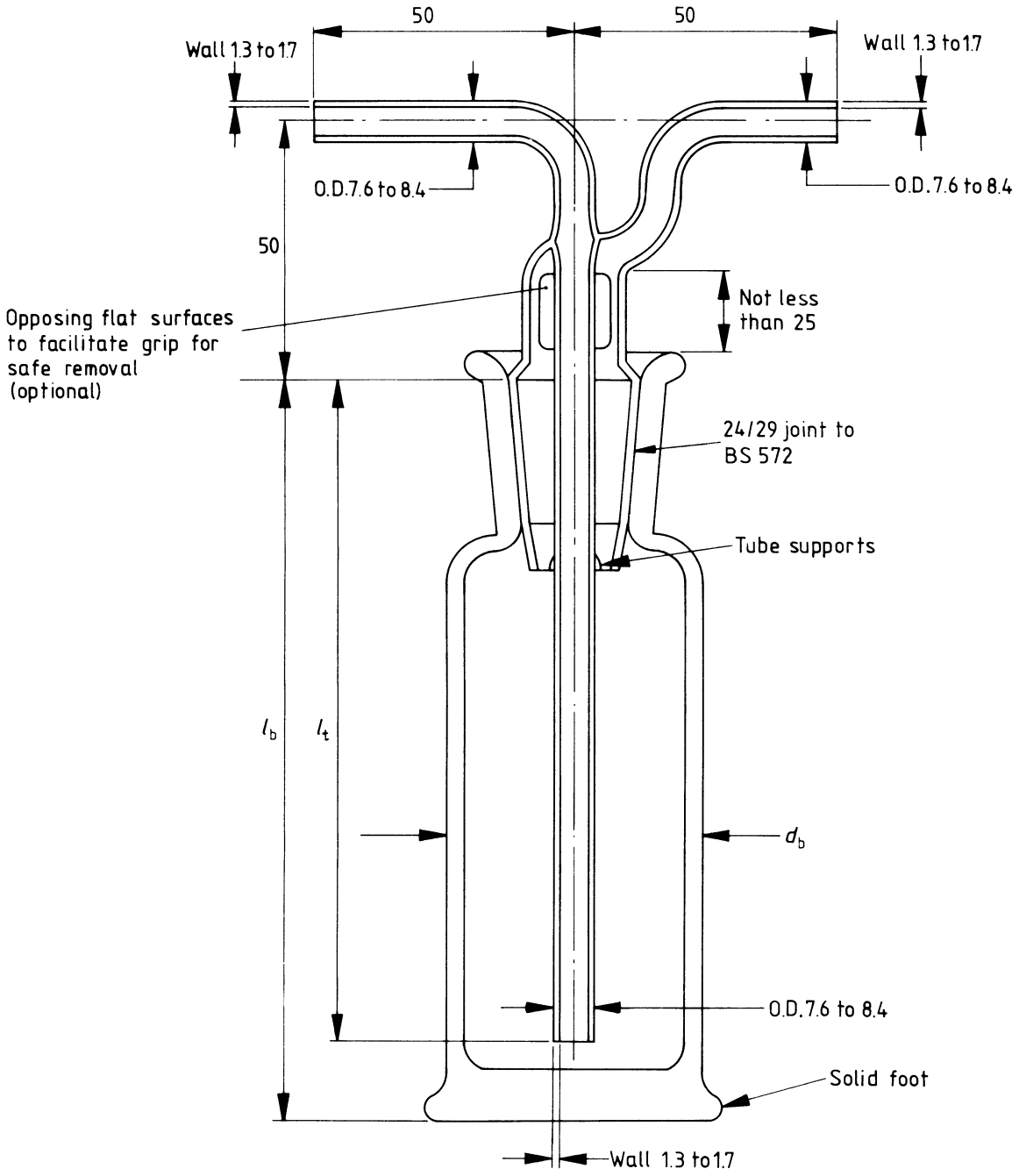
d) for bottles fitted with porous distributors, the porosity grade number on the head (see **3.3**).

Table 1 — Recommended dimensions for Drechsel bottles

Nominal capacity	Overall length of body, l_b	Length from top of cone to bottom of distributor, l_t	Diameter of body, d_b
mL	mm	mm	mm
125	148	130	48
250	188	165	56
500	240	215	70

NOTE Dimensions which are the same for all the sizes are shown on Figure 1.

[2)] A revision of BS 1752 is in course of preparation and will be identical with ISO 4793:1980 published by the International Organization for Standardization (ISO); porosity grades P250, P160, P100 or P40 will then be substituted for porosity grade numbers 0, 1, 2 or 3.
[3)] Markings BS 2461:1983 on or in relation to a product is a claim by the manufacturer that the product has been manufactured in accordance with the requirements of the standard. The accuracy of such a claim is therefore solely the manufacturer's responsibility. Enquiries as to the availability of third party certification to support such claims should be addressed to the Director, Quality Assurance Division, BSI, Maylands Avenue, Hemel Hempstead, Herts HP2 4SQ in the case of certification marks administered by BSI or to the appropriate authority for other certification marks.



NOTE All dimensions are in millimetres.

Figure 1 — Drechsel bottle with fixed head, fitted with solid foot and plain tube, showing recommended dimensions

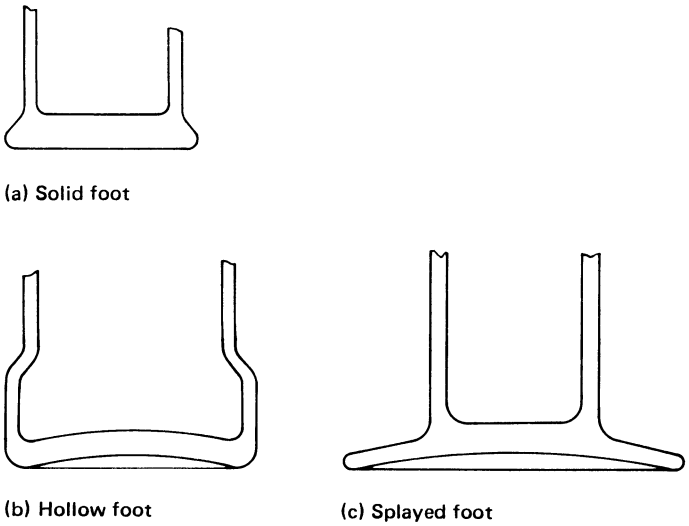
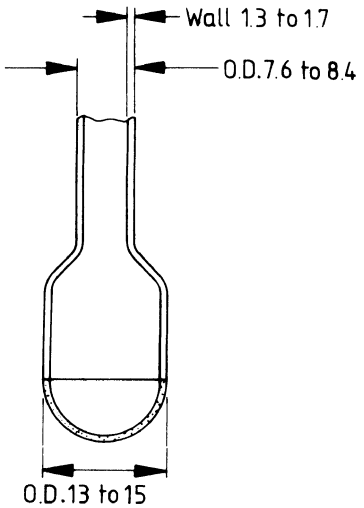
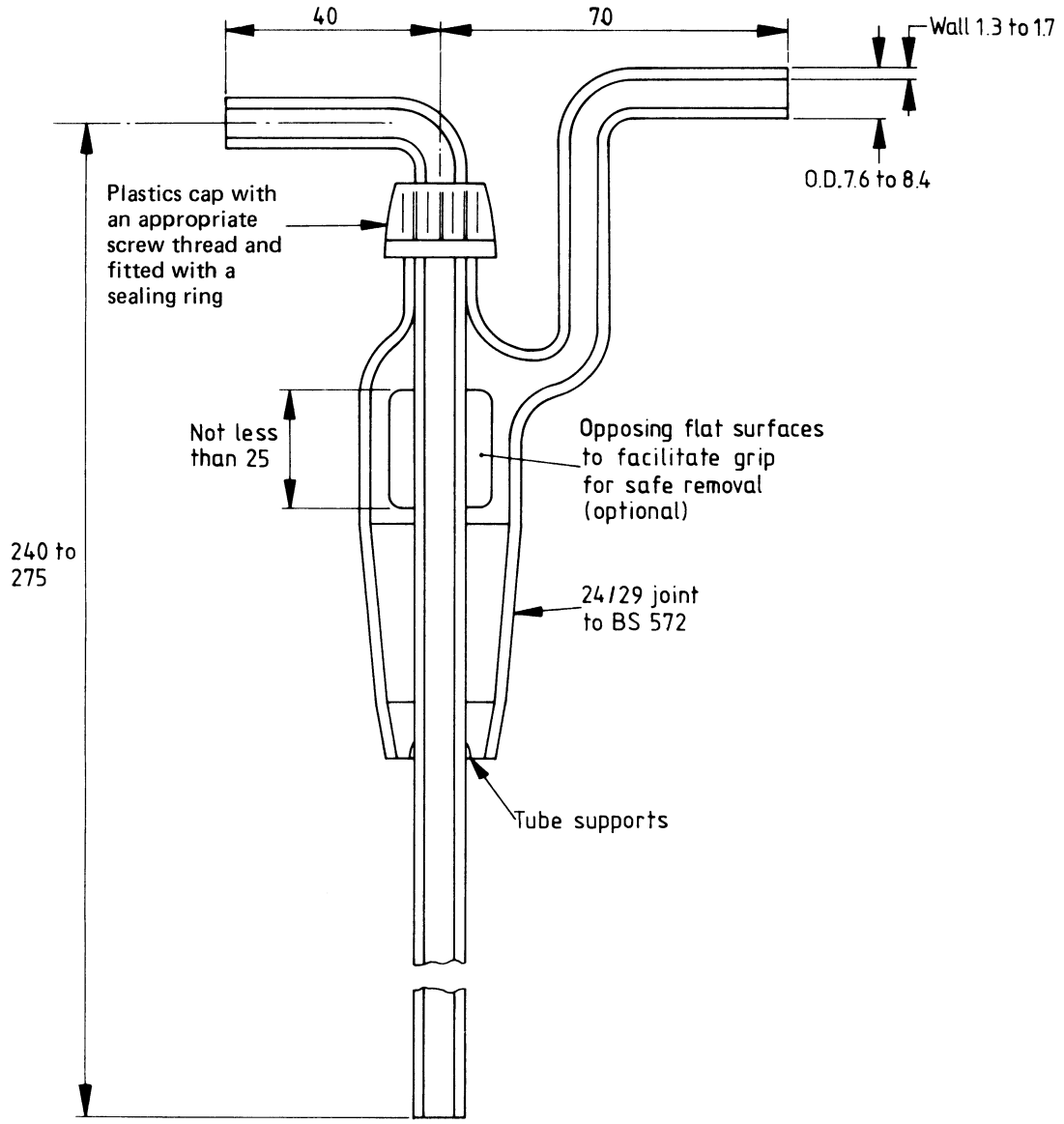


Figure 2 — Forms of foot



NOTE All dimensions are in millimetres.

Figure 3 — Inverted dome sintered distributor showing recommended dimensions



NOTE All dimensions are in millimetres.

Figure 4 — Adjustable Drechsel bottle head with adjustable tube, showing recommended dimensions

Publications referred to

BS 572, *Interchangeable conical ground glass joints.*
BS 1752, *Laboratory sintered or fritted filters.*
BS 5895, *Specification for borosilicate glass tubing for laboratory apparatus.*
ISO 4793, *Laboratory sintered (fritted) filters — Porosity grading, classification and designation.*

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