

Specification for

Galvanized mild steel indirect cylinders — Annular or saddle-back type —

Part 2: Metric units

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The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the Committees entrusted with the preparation of this British Standard:

Association of Manufacturers of Domestic Electrical Appliances	Institute of Building
British Non-ferrous Metals Federation	Institute of Plumbing
British Non-ferrous Metals Research Association	Institution of Gas Engineers
British Waterworks Association	Institution of Heating and Ventilating Engineers
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Copper Tube Fittings Manufacturers' Association	London Boroughs Association
Electricity Council, The Central Electricity Generating Board and the Area Boards in England and Wales	Metropolitan Water Board
British Gas Corporation	National Federation of Plumbers and Domestic Heating Engineers
Heating and Ventilating Contractors' Association	Royal Society of Health
	Scottish Association of Manufacturing Coppersmiths
	Individual manufacturers

This British Standard, having been approved by the Hardware and Ironmongery Industry Standards Committee, was published under the authority of the Executive Board on 15 March 1973

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Foreword

This British Standard has been prepared under the authority of the Hardware and Ironmongery Industry Standards Committee.

This Part of this standard has been prepared in accordance with the change to the metric system in the construction industry, giving values in terms of SI units. For further information on SI units, reference should be made to BS 3763, *“The International System of Units (SI)”* and PD 5686, *“The use of SI units”*.

The values in Part 2 represent the equivalent of the values in imperial units in BS 1565:1949, rounded to convenient numbers. Although the values are not exact equivalents of the imperial ones, this Part is not a technical revision of the standard.

For the purpose of compliance with this standard, the values in either BS 1565:1949 or this Part may be used, provided that one set of values is used consistently.

The components covered by this specification are shown with a B grade in PD 6432, *“Dimensional co-ordination in building. Arrangements of building components and assemblies within functional groups”*, Part 1: *“Functional groups 1, 2, 3 and 4”*, and where co-ordinating spaces are allotted for these components the sizes should therefore have regard for BS 4011, *“Recommendations for the co-ordination of dimensions in building. Basic sizes for building components and assemblies”* and BS 4330, *“Recommendations for the co-ordination of dimensions in building. Controlling dimensions”*.

Seven standards, covering water storage vessels mainly for domestic use, now form a series to which others may be added when such a course is considered necessary. The six other standards in this series are:

BS 417, *Galvanized mild steel cisterns and covers, tanks and cylinders*.

BS 699, *Copper cylinders for domestic purposes*.

BS 1566, *Copper indirect cylinders for domestic purposes — Part 1: Double feed indirect cylinders — Part 2: Single feed indirect cylinders*.

BS 2777, *Asbestos-cement cisterns*.

BS 3198, *Combination hot water storage units (copper) for domestic purposes*.

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.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, 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 galvanized mild steel indirect cylinders (in two classes, B and C, and eight sizes). The approximate capacities are from 109 litres to 455 litres. The cylinders are intended primarily for fixing in the vertical position and are shown in Figure 1, Figure 2 and Figure 3.

The information which should be provided by an intending purchaser is listed in Appendix A.

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

2 Definitions

For the purposes of this British Standard, the following definitions apply:

2.1 cylinder

a closed cylindrical vessel with domed ends, for circulation or storage of hot water

2.2 primary heater

a heater of annular or saddle-back form mounted inside a cylinder and fed by means of a water-heating apparatus

2.3 screwed connection

any threaded connection to which pipes or other apparatus can be fitted

3 Designation of cylinders for ordering purposes

For ordering purposes, galvanized mild steel cylinders shall be designated by the appropriate BS size number given in Table 1, followed by the grade required.

4 Sizes and classes

The sizes of cylinders, the number of classes and the thicknesses of material appropriate to each class shall conform to the details given in Table 1.

The diameter of a cylinder shall be measured internally, and the height externally from base to top of dome, excluding any screwed connection.

5 Primary heaters

The minimum heating surfaces and the thicknesses of material shall be as specified in Table 1.

Cylinders of sizes BSG.1M, BSG.2M, BSG.3M and BSG.8M may be fitted either with an annular or with a saddle-back type of primary heater. The remaining sizes shall be fitted with an annular heater.

6 Tolerances

The following shall be the permissible variations from the dimensions laid down in Table 1:

- | | |
|--|---|
| 1) Position of screwed connections: | 3 mm in any direction |
| 2) Diameter of cylinder: | ± 5 mm |
| 3) Height of cylinder: | ± 6 mm |
| 4) Thickness of mild steel sheet before galvanizing: | the relevant tolerances given in BS 1449 or BS 4360 shall apply |

7 Material

The cylinders shall be made from mild steel plate or sheet which shall be free from defects which would adversely affect the efficient functioning of the vessel.

8 Manufacture

Cylinders shall be soundly constructed and may be welded, riveted, or partly welded and partly riveted. Should the purchaser specifically require one or other of these methods of manufacture, this shall be stated in the enquiry and order.

9 Radius of curvature

Both ends of cylinders shall have a radius of curvature of not less than one diameter nor more than $1\frac{1}{2}$ times the diameter of the cylinder.

10 Bolted ends and handholes

Cylinders of 227 litres capacity and greater shall be fitted with a detachable top, and smaller cylinders shall be so fitted when specially required by the purchaser. The detachable top shall be fitted to an external mild steel angle ring of a minimum section of $38\text{ mm} \times 38\text{ mm} \times 5\text{ mm}$, which shall be welded externally to the shell of the cylinder. The bolts shall be not less than 12 mm diameter, and the pitch between centres of bolts shall be not more than 75 mm.

If a handhole is required, other than for mounting an immersion heater, it shall be of such design and size, and shall be placed in such position, as shall be agreed between the purchaser and the manufacturer.