

Specification for gas meter unions and adaptors

ICS 21.060.01

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee GSE/25, Gas meters, upon which the following bodies were represented:

- BSI Consumer Policy Committee
- Health and Safety Executive
- Office of the Gas and Electricity Markets
- Society of British Gas Industries
- Co-opted members

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The following BSI references relate to the work on this standard:

Committee reference GSE/25
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Amendments issued since publication

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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Materials	2
5 Dimensions	2
6 Machined surfaces	2
7 Screw threads	3
9 Finish	3
10 Gas tightness	3
Bibliography	12
Figure 1 — Basic Whitworth form	3
Table 1 — Boss dimensions	4
Table 2 — Nut dimensions	5
Table 3 — Liner dimensions	6
Table 4 — Reducing adaptor dimensions	7
Table 5 — Increasing adaptor dimensions	8
Table 6 — Union washer dimensions	9
Table 7 — Adaptor washer dimensions	9
Table 8 — Sealing disc dimensions	10
Table 9 — External thread dimensions	11
Table 10 — Internal thread dimensions	11

Foreword

This British Standard has been prepared by Technical Committee GSE/25. BS 746:2005+A1:2009 supersedes BS 746:2005, which is withdrawn.

In this revision, the following changes have been made.

- a) The terms and definitions have been revised.
- b) The polymer used for the meter washer is required to conform to BS EN 549.
- c) Minor changes have been made to the boss dimensions specified without affecting interchangeability.
- d) Adaptors that were specified in the 1967 edition but absent from the 1987 edition are again specified.
- e) The nominal sizes of adaptor washers are designated by a single value (which represents the end of the adaptor at which it is used) in place of the previous dual value designation.
- f) Dimensions for sealing discs have been added.

The start and finish of text introduced or altered by Amendment No.1:2009 is indicated in the text by tags **A1** **A1**.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

In particular, attention is drawn to the following statutory regulations:

The Gas Safety (Installation and Use) Regulations 1998 [1]

The Gas Safety (Management) Regulations 1996 [2]

The Gas (Meters) Regulations 1983, as amended [3]

The Building Regulations 2000, as amended [4]

The Building (Scotland) Regulations 2004 [5]

The Building Regulations (Northern Ireland) 2000 [6]

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 13, an inside back cover and a back cover.

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1 Scope

This British Standard specifies requirements and test methods for fittings for the installation of low pressure gas meters. It is applicable to fittings for gas meters for use with 1st, 2nd and 3rd family gases at temperatures between $-20\text{ }^{\circ}\text{C}$ and $+60\text{ }^{\circ}\text{C}$, up to a maximum operating pressure of 75 mbar and a maximum incidental pressure of 200 mbar. The gas tightness of the fittings is also specified.

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.

BS 970-1, *Specification for wrought steels for mechanical and allied engineering purposes — Part 1: General inspection and testing procedures and specific requirements for carbon, carbon manganese, alloy and stainless steels*.

BS 1936-1:1952, *Undercuts and runouts for screw threads — Part 1: Inch screw threads*.

A1 BS 7371-6:1998, *Coatings on metal fasteners — Part 6: Specification for hot dipped galvanized coatings* A1

BS EN 549:1995, *Specification for rubber materials for gas appliances and gas equipment*.

BS EN 1562, *Founding — Malleable cast irons*.

A1 BS EN 1652, *Copper and copper alloys — Plate, sheet, strip and circles for general purposes* A1

BS EN 1976, *Copper and copper alloys — Cast unwrought copper products*.

BS EN 1982, *Copper and copper alloys — Ingots and castings*.

A1 BS EN 10088-3:2005, *Stainless steels — Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes*

BS EN 10242:1995, *Threaded pipe fittings in malleable cast iron* A1

BS EN 12163, *Copper and copper alloys — Rod for general purposes*.

BS EN 12164, *Copper and copper alloys — Rod for free machining purposes*.

BS EN 12165, *Copper and copper alloys — Wrought and unwrought forging stock*.

BS EN 12167, *Copper and copper alloys — Profiles and rectangular bar for general purposes*.

A1 BS EN 12168, *Copper and copper alloys — Hollow rod for free machining purposes* A1

A1 BS EN 12329:2000, *Corrosion protection of metals — Electrodeposited coatings of zinc with supplementary treatment on iron or steel* A1

BS EN 12420, *Copper and copper alloys — Forgings*.

A1 PD 970:2005, *Wrought steels for mechanical and allied engineering purposes — Requirements for carbon, carbon manganese and alloy hot worked or cold finished steels* A1

A1 *Text deleted* A1

3 Terms and definitions

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

3.1

adaptor

metal fitting for connecting a nut and liner to a boss of a different size

3.2

boss

part of a fitting with an external screw thread

3.3

adaptor washer

elastomeric seal between a boss and an adaptor

3.4

liner

 metal  fitting with a flanged end to take a union washer

3.5

nut

metal fitting with an internal screw thread

3.6

sealing disc

metal fitting fitted between a boss and a nut, with or without a liner, designed to close off the gasway

3.7

union

metal fitting comprising a boss and a liner using a washer and nut for gas tightness

3.8

union washer

elastomeric seal between a boss and a liner

4 Materials

4.1 Metal fittings

Metal fittings shall be made from one of the following materials:

- a) brass for hot pressing, grade CW602N or CW617N to BS EN 12165 or BS EN 12420;
- b) brass for casting, grade CC490K, CC491K, CC750S, CC754S or CC760S to BS EN 1982;
- c) brass rod, grade CW602N, CW614N or CW617N to BS EN 12164, BS EN 12167 or BS EN 12168;
- d) brass sheet and strip, grade CW508L to BS EN 1652;
- e) copper, grade CR004A to BS EN 1976;
- f) malleable cast iron to BS EN 1562;
- g) carbon steel of any grade, with a content not exceeding 0.01% for lead, 0.06% for sulfur and 0.06% for phosphorous and which is suitable for welding, and forming or machining, as appropriate, to PD 970:2005;
- h) austenitic stainless steel to BS EN 10088-3:2005, grades 1.4404 and 1.4541. 

4.2 Elastomeric washers

Elastomeric washers shall be made from material of a hardness within the range 91 IRHD¹⁾ to 96 IRHD. The material shall otherwise conform to BS EN 549:1995, grade H3.

5 Dimensions

5.1 General

Fittings shall conform to the appropriate dimensions specified in Table 1 to Table 8, as applicable.

NOTE Reference numbers have been added to Table 2, Table 4, Table 5, Table 6, Table 7 and Table 8 to assist the ordering and purchase of fittings.

5.2 Undercuts

The thread undercuts shall be Grade 1, Form A, Width $2p$ in accordance with BS 1936-1:1952.

6 Machined surfaces

The machined surface of a fitting shall have:

- a) a concentricity tolerance on all threads and diameters of $\varnothing 0.4$ mm; and
- b) a surface roughness of not more than $1.6 \mu\text{m}$ on the sealing faces.

¹⁾ International Rubber Hardness Degrees.