

Specification for

Manually operated copper alloy valves for radiators

ICS 91.140.10

Confirmed November 2008

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Refrigeration, Heating and Air Conditioning Standards Policy Committee (RHE/-) to Technical Committee RHE/16, upon which the following bodies were represented:

- Association of Manufacturers of Domestic Unvented Supply Systems Equipment (MODUSSE)
- BEAMA Ltd. [Association of Control Manufacturers (TACMA)]
- British Gas plc
- British Plumbing Fittings Manufacturers' Association
- British Valve and Actuator Manufacturers' Association
- Building Services Research and Information Association
- Department of the Environment (Property Services Agency)
- Heating and Ventilating Contractors' Association
- Hevac Association
- Institute of Domestic Heating Engineers
- Institute of Refrigeration
- Institution of Gas Engineers
- Society of British Gas Industries

This British Standard, having been prepared under the direction of the Refrigeration, Heating and Air Conditioning Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 January 1991

© BSI 03 December 2001

First published December 1956
Second edition August 1972
Third edition January 1991

The following BSI references relate to the work on this standard:
Committee reference RHE/16
Draft for comment 87/73087 DC

Amendments issued since publication

Amd. No.	Date	Comments
13147	03 December 2001	Indicated by a sideline

ISBN 0 580 19042 0

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Definitions	1
3 Designation of valves by size	1
4 Pressure and temperature ratings	2
5 Marking	2
6 Materials and manufacture	2
7 Design and construction	4
8 Type tests	9
9 Routine pressure tests	9
Appendix A Information to be supplied and requirements to be agreed	11
Appendix B Method of testing the torque strength of the handwheel when assembled to the valve	11
Appendix C Method of testing the torque strength of the union nut	12
Figure 1 — Typical angle pattern valve	5
Figure 2 — Typical Y-pattern valve	6
Figure 3 — Typical gate pattern valve	7
Figure 4 — Tailpiece incorporating an auxiliary valve	10
Figure 5 — Arrangement for testing the resistance of the handwheel to torque	12
Table 1 — Materials	3
Table 2 — Minimum flow area through valve and tailpiece	4
Table 3 — Component dimensions	5
Table 4 — Test requirements for rubber stem seals	8
Table 5 — Torque values for testing the handwheel when assembled to the valve	11
Table 6 — Torque values for testing the union nut	12
Publication(s) referred to	13

Foreword

This revision of BS 2767 has been prepared under the direction of the Refrigeration, Heating and Air Conditioning Standards Policy Committee and supersedes BS 2767:1972 which is withdrawn. It takes into account developments in manufacture and testing of radiator valves, and latitude is allowed for variation in design of these valves.

The principal changes in this revision are as follows.

- a) The title includes the words “manually operated” to indicate exclusion of thermostatic radiator valves which are covered in BS 6284.
- b) Pressure and temperature ratings are unchanged but guidance is given where compression or capillary ends in accordance with BS 864-2 are used.
- c) A test for the torque strength of the handwheel is included.
- d) Unions have been omitted owing to the decrease in their use.
- e) A test for the torque strength of the union nut is included.
- f) The 1 ¼ size valve has been deleted owing to diminished use, but connections for 8 mm, 10 mm and 12 mm copper tube are now included.
- g) Compression type tailpiece connections are included (see Figure 1).
- h) Tests are divided into type tests and routine tests.
- i) The grade of chromium plating is specified.
- j) A new method of defining minimum flow area is given that aligns with BS 864-2.
- k) Provisions have been made for a draining facility to be incorporated in the valve body or tailpiece.
- l) Tests for rubber stem seals have now been related to valve types.

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 13 and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Sidelining in this document indicates the most recent changes by amendment.

1 Scope

This British Standard specifies materials, essential aspects of design, and performance requirements for manually operated copper alloy valves for connection to hot water radiators.

Two types of valve are specified on the basis of their pressure ratings; type 4 with a maximum working pressure of 4 bar¹⁾ and type 10 with a maximum working pressure of 10 bar.

The range of sizes covered is suitable for use with radiators having ½ in, ¾ in, or 1 in female threaded connections in accordance with BS 21.

End connections for connection to the valve of 8, 10, 12, 15, 22 and 28 mm copper tube, and threads for ½, ¾ and 1 in threaded iron pipe are included.

The standard also covers valves with tailpieces, including tailpieces which incorporate a draining facility or an auxiliary valve.

NOTE 1 All pressures given are gauge pressures.

NOTE 2 Figure 1, Figure 2 and Figure 3 are solely for the purpose of showing alternative types, part names and, collectively, some typical variations of detail; they are not intended to influence design.

NOTE 3 Information to be supplied by the purchaser and requirements to be agreed between supplier and purchaser are given in Appendix A.

NOTE 4 The publications 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

manually operated valve

a valve controlling the flow of water to or from a radiator to which it is fitted
the flow is set by the operation of a handwheel or loose key

2.2

handwheel valve

a valve fitted with a handwheel to control the flow of water

2.3

lockshield valve

a valve, fitted with a lockshield, which, after having been set to a desired flow, cannot be altered except by use of a special key or the removal of the lockshield

2.4

draining facility

a facility incorporated in a valve by which an individual radiator can be drained

NOTE The radiator is drained by closing the valves and opening the draining facility.

2.5

auxiliary valve

an additional valve incorporated within the tailpiece to enable the radiator to be removed without draining

3 Designation of valves by size

The size by which the valves are designated shall be the nominal diameter of the tube or pipe with which the valves are to be used. For example:

- a) for an 8 mm copper tube the designation shall be 8;
- b) for a ½ in threaded pipe the designation shall be ½.

¹⁾ 1 bar = 10⁵ N/m² = 10⁵ Pa.

4 Pressure and temperature ratings

The pressure and temperature ratings for the two types of valve shall be as follows.

- a) Type 4 valves shall have a maximum service temperature of 95 °C and a maximum working pressure of 4 bar.
- b) Type 10 valves shall have a maximum service temperature of 120 °C and a maximum working pressure of 10 bar.

NOTE Where type 10 valves having inlet and outlet connections for compression and capillary fittings are intended to be used, reference should be made to Table 5 of BS 864-2:1983.

The stem seals shall comply with 7.3.

5 Marking

Valves shall be permanently and legibly marked with the following:

- a) the manufacturer's name or mark;
- b) the number of this British Standard, i.e. BS 2767²⁾, followed by the type of valve, i.e. 4 or 10.

NOTE 1 The marks may be applied to any convenient external part of the valve.

NOTE 2 Additional marking is not precluded.

6 Materials and manufacture

6.1 The materials used in the manufacture of the component parts of the valves shall be as given in Table 1.

6.2 Materials shall be free from defects, such as cracking, laminations, voids and inclusions. Castings shall not be burned, plugged, stopped or patched. All surfaces shall be free from burrs.

6.3 Plastics handwheels shall comply with 8.2.

²⁾ Marking BS 2767 on or in relation to a product represents a manufacturer's declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.