

Specification for underground fire hydrants and surface box frames and covers

ICS 13.220.10

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Fire Standards Committee (FSM/-) to Technical Committee FSM/8 upon which the following bodies were represented:

British Fire Services Association
British Plastics Federation
British Valve Manufacturers' Association Ltd.
Chief and Assistant Chief Fire Officers' Association
Department of the Environment (Property Services Agency)
Fire Extinguishing Trades Association
Greater London Council
Home Office
Institution of Fire Engineers
Ministry of Defence
National Water Council

This British Standard, having been prepared under the direction of the Fire Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 January 1984

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First published August 1937
First revision January 1950
Second revision August 1964
Third revision February 1977
Fourth revision January 1984

ISBN 0 580 13552 7

Amendments issued since publication

Amd. No.	Date	Comments
7658	June 1993	
10434	April 1999	
14520	8 July 2004	
15667 Corrigendum	24 August 2005	Correction to Amendment No. 1 affecting Clause 9, D.4.3.4, Figure 6 and Figure 7 Indicated by a sideline in the margin

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Foreword

This British Standard has been prepared under the direction of the Fire Standards Committee and is a revision of BS 750:1977 which is withdrawn.

In this revision the opportunity has been taken of introducing type tests for plastics screwed outlets and additional grades of metals for certain components. In addition spindle sealing for screw-down type hydrants is now specified. Flange requirements have also been revised.

Surface box frames and covers with modified test procedures are specified in greater detail in this edition.

Appendix A and Appendix B do not contain requirements of this standard and are incorporated for guidance only. Appendix C, Appendix D and Appendix E do form part of the requirements of the standard.

BS 5306-1 contains recommendations for the planning, installation, testing and maintenance of underground fire hydrants.

It has been assumed in the drafting of this British Standard that the execution of its provisions is entrusted to appropriately qualified and experienced people, for whose guidance it has been prepared.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its 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 23 and a back cover.

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Section 1. General

1 Scope

This British Standard specifies the operational and safety requirements for underground fire hydrants conforming to BS EN 1074-6. It includes hydrants with valves of the wedge gate type and the screw-down type suitable for a maximum allowable operating pressure (PFA) of 1.6 MPa¹⁾ and 2.5 MPa. It also specifies requirements for their surface box frames and covers.

NOTE 1 The titles of the publications referred to in this standard are listed on page 23.

NOTE 2 PFA is defined in BS EN 805.

¹⁾ 1 MPa = 10 bar.

Section 2. Fire hydrants

2 Classification and design

Hydrants shall have a design life of 50 years. This shall be determined by reference to the materials used in the construction, their properties, the engineering design of the hydrant, the normal situation of installation and conditions of use. The manufacturer shall demonstrate compliance with this requirement by reference to the materials of construction being in accordance with standards contained herein. Where materials have time-dependent properties these shall be selected with reference to the manufacturer's data on such properties to determine their suitability for the function and lifespan.

Where elements of the hydrant are designed to be serviceable, this shall not be regarded as reason to design for a shorter operating life. Serviceable components shall include those having potential for accidental damage and wear from abnormal use. The manufacturer shall ensure that parts that are considered to be subject to wear shall be available for the lifetime of the valve.

Hydrants shall be one of the following two types:

- type 1 wedge gate (see Clause 3 and Figure 1);
- type 2 screw-down (see Clause 4 and Figure 2).

Screw-down hydrants of type 2 shall conform to one of the following patterns.

a) Type 2a: The bonnets and/or outlets of this pattern shall be secured in such a manner that they cannot be removed when installed in a pipeline. With the exception of stem sealings, it shall be made clear in the manufacturer's literature that the hydrant cannot be maintained whilst in situ.

b) Type 2b: Designed to facilitate maintenance of obturator, stem, outlet and their seals, in situ, whilst mounted in a chamber having a surface box frame and cover conforming to Section 3. They shall have:

- 1) Y and Z flanges DN 50, PN 16 or PN 25 compatible with the mating dimensions given in BS EN 1092-2 and BS EN 1092-3 as appropriate, and using bolts, studs or set screws specified (i.e. M16). They need not be circular and are not required to have raised faces.

NOTE Y or Z flanges may have a groove in the face to accommodate an "O" ring. The bolt holes may be slotted and the slots may extend to the periphery of the flange.

- 2) A bolted connection at the body/bonnet joint with a minimum of three bolts.

c) Type 2c: Designed to facilitate maintenance as type 2b. They shall have bolted connections between both the outlet and body and the bonnet and body. These connections shall each have a minimum of three bolts.

d) Type 2d: Designed to facilitate maintenance as type 2b, but having means of connection of the outlet and/or bonnet to the hydrant body other than type 2c (see 5.2.4 and 5.9).

Type 2b, type 2c and type 2d hydrants shall be capable of being dismantled in situ using standard, readily available tools.

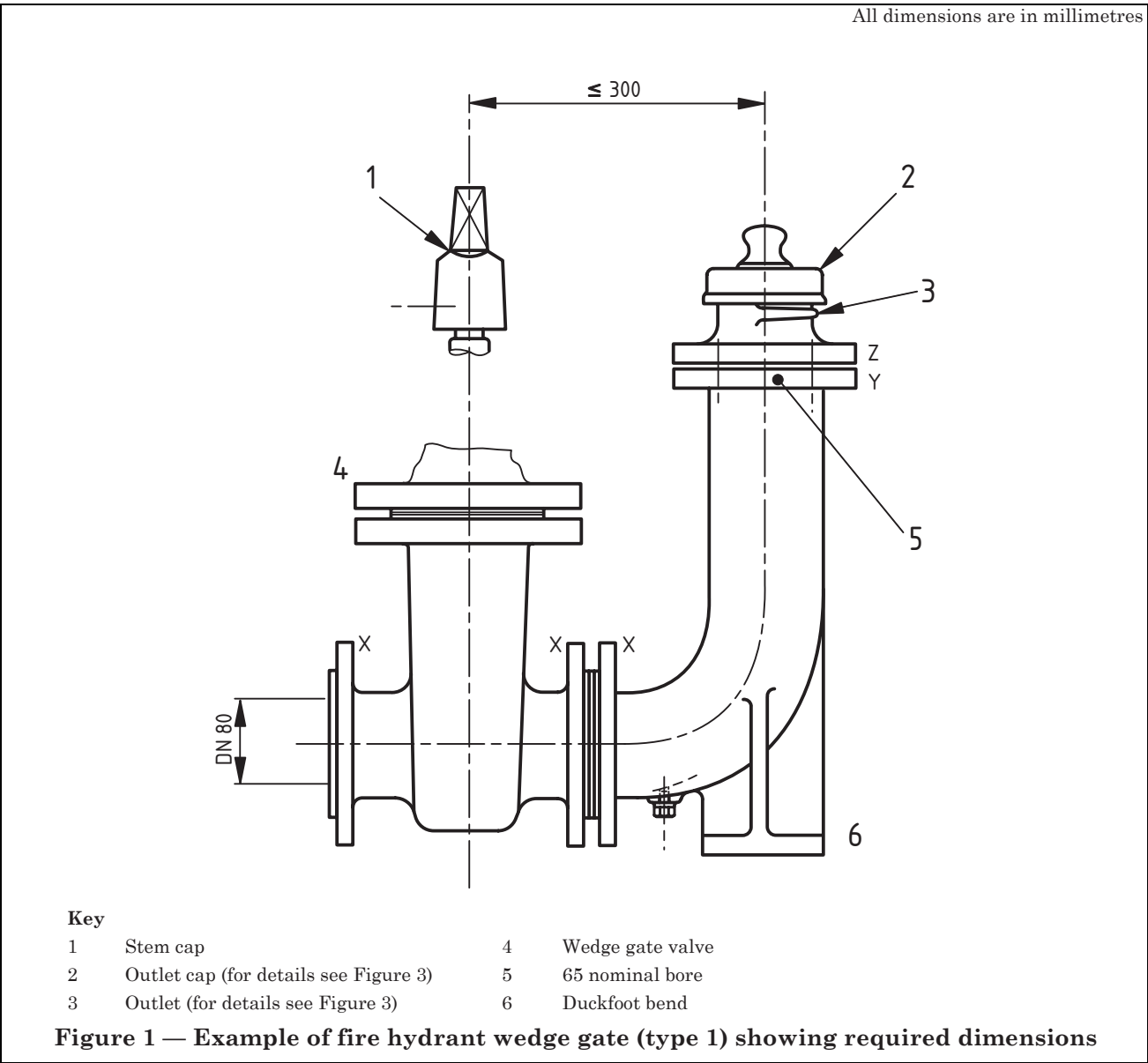
3 Wedge gate (type 1)

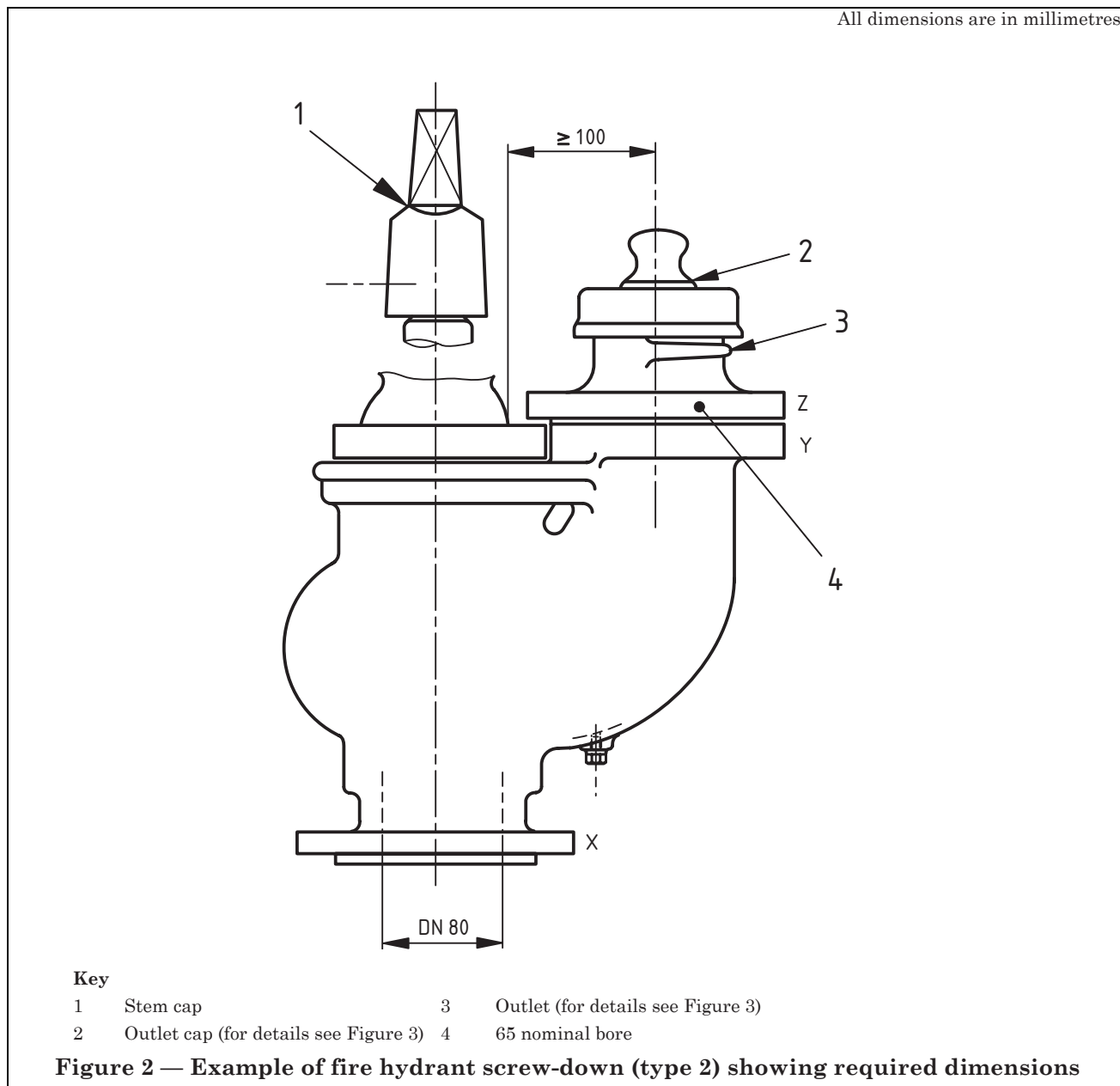
3.1 Hydrants of the wedge gate type shall conform to the dimensions shown in Figure 1.

3.2 The wedge gate valve shall conform to the recommendations and requirements of BS 5163-1, BS 5163-2, BS EN 1074-1 and BS EN 1074-2 for PN 16 or PN 25 valves (see also 5.4).

3.3 Materials for duckfoot bends shall conform to BS EN 545.

Table 1 — Deleted





4 Screw-down (type 2)

4.1 Hydrants of the screw-down type shall conform to the dimensions shown in Figure 2.

The clearance between the back of flange X and the body shall be not less than 17 mm at the position of any bolt hole.

4.2 Materials for the bodies of screw-down type hydrants shall conform to BS EN 1503-3.

Table 2 — Deleted

4.3 Hydrants shall be fitted with either captive or loose valves, which shall be faced with a resilient material in accordance with BS EN 681-1 type WA (for cold potable water).

Table 3 — Deleted