

CONFIRMED
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Surface boxes, guards and underground chambers for gas and waterworks purposes —

Part 2: Specification for small surface boxes

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Department of the Environment (Transport and Road Research Laboratory)	Road Surface Dressing Association
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The organization marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

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British Gas Corporation	
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British Plastics Federation	Metal Trades Organizations
British Precast Concrete Federation Ltd.	National Clayware Federation
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Clay Pipe Development Association Ltd.	Severn Trent Water Authority
Institution of Gas Engineers	Water Companies Association

This British Standard, having been prepared under the direction of the Road Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 31 January 1983

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

As BS 1185 and BS 1426 & BS 3461 were inter-related, it was decided to publish the revisions as Parts 1 and 2 of a new British Standard. Part 1 "Specification for guards" has already been published and BS 1185 withdrawn. This Part of this standard supersedes BS 1426 & BS 3461 which is withdrawn.

Work on this Part was initiated under the direction of the Hardware and Ironmongery Standards Committee which has since been disbanded and it is now the responsibility of the Road Engineering Standards Committee.

Surface boxes are now made in materials other than grey cast iron and this revision deals with boxes made from grey iron, ductile iron, aluminium and plastics. It also deals with composite units in which a cover and frame made from one of these materials is set in a concrete surround. A move has been made towards a performance-based specification to afford an opportunity to improve designs and also to permit units not previously covered by BS 1426 & BS 3461 to be encompassed by this Part. It is desirable to check manufacturers' catalogues to ensure that units will meet any particular requirements of the user.

The designations in this Part have been changed from those in BS 1426 & BS 3461 and Heavy, Medium and Light boxes are now graded A, B and C respectively. This brings it into line with BS 497 "Manhole covers, road gully gratings and frames for drainage purposes". To avoid confusion with the previous designations, boxes have been given additional references. Grade B and grade C are subdivided into grades B1 and B2 and grades C1 and C2 respectively. Grade B1 and grade C1 boxes are suitable for use with pipe-type guards complying with the requirements of Part 1 of this standard. Boxes have been given an additional reference; N for non-rock, H for hinged and S for swivel cover. The full designations are given in Table 1.

Certification. Attention is drawn to the certification facilities described on the inside back cover of this standard.

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 10, 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 Part of BS 5834 specifies requirements for surface boxes for gas, waterworks and general purposes primarily intended for use with gas valves and regulator chambers and for stop valves and sluice valves on service pipes and water mains.

The largest size of surface box covered by this Part has a designated minimum clear opening of 300 mm in diameter.

A summary of optional items to be agreed between the manufacturer and the purchaser is given in Appendix B.

NOTE The titles of the publications referred to in this standard are listed on page 10.

2 Definitions

For the purposes of this Part of BS 5834 the following definitions apply.

2.1 surface box

an assembly of a frame and cover to give access to a valve or regulator chamber

2.2 frame

a part of a surface box which receives and supports the cover

2.3 cover

a part of a surface box which covers the access opening and which is constructed in one or two sections

2.4 composite unit

a cover and frame set in a concrete surround and suitable for bedding on a sectional-type guard as described in Part 1 of this standard

NOTE A cast iron surface box complying with the requirements of a grade A box, and subsequently surrounded by concrete, does not constitute a composite unit.

2.5 clear opening

the access opening in the surface box through which a horizontal disc of a diameter equal to the specified minimum clear opening will pass unimpeded, without deviation from a vertical axis, when the surface box is placed in its normal position and with the cover fully open

3 Materials

3.1 Surface boxes

3.1.1 General. The materials used for the manufacture of surface boxes shall comply with the requirements of **3.1.2**, **3.1.3**, **3.1.4** or **3.1.5**. The cover and the frame shall be of the same material, i.e. all cast iron, all aluminium or all plastics.

3.1.2 Cast iron units. The metal used for the manufacture of iron castings shall be either:

- a) grey iron (flake graphite iron) of a quality not less than that specified as grade 150 of BS 1452:1977; or
- b) ductile iron (spheroidal graphite iron or nodular graphite iron) complying with grades 500/7, 600/3 or 700/2 of BS 2789:1973 as selected by the manufacturer to suit the design and dimensions of the unit.

3.1.3 Aluminium units. The metal used for the manufacture of aluminium castings shall comply with grades LM4, LM6 or LM26 of BS 1490 as selected by the manufacturer to suit the design and dimensions of the unit.

3.1.4 Plastics units

3.1.4.1 General. The materials used for the manufacture of plastics surface boxes included in this standard shall be either:

- a) thermoplastics; or
- b) thermosetting materials.

NOTE It should be noted that plastics materials may be adversely affected by heat, and care should be taken to avoid contact with hot materials e.g. hot rolled asphalt or mastic asphalt.

3.1.4.2 Thermoplastics materials. Thermoplastics materials used for the manufacture of surface boxes shall have a Vicat softening point of not less than 100 °C when tested by Method 120A of BS 2782-1.

It is permissible for thermoplastics to be reinforced or unreinforced or to be filled or unfilled.

Thermoplastics shall be coloured black by the incorporation of between 1.5 % and 2.5 % by mass of finely dispersed carbon black. If colour coding of the lid is required for identification purposes, this shall be achieved by use of a coloured plastics insert.

3.1.4.3 Thermosetting materials. Thermosetting materials used for the manufacture of surface boxes shall be glass fibre reinforced polyester moulding compounds complying with BS 5734-3 or BS 5734-5.