

Specification for

Open fires burning solid mineral fuels with convection, with or without boilers

Committees responsible for this British Standard

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- Association of British Solid Fuel Appliance Manufacturers
- Association of Building Engineers
- British Coal Corporation
- British Fuel and Chimney Manufacturers' Association
- Consumer Policy Committee of BSI
- Department of the Environment
- HETAS Ltd.
- Low Temperature Coal Distillers Association of Great Britain Ltd.
- METCOM
- National Fireplace Council Manufacturers' Association
- Waterheater Manufacturers' Association

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Foreword

This British Standard has been prepared under the direction of the Refrigeration, Heating and Air Conditioning Standards Policy Committee and supersedes BS 3376:1991 which is withdrawn.

This standard has been revised as a result of revisions to other standards referred to in the text, to prevent duplication and to reflect the latest information.

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 to iv, pages 1 to 20, 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.

Section 1. General

1.1 Scope

This British Standard specifies constructional, dimensional and performance requirements for inset or freestanding open fires giving space heating by convection in addition to radiation and designed to burn solid mineral fuels (i.e. bituminous coal, Welsh dry steam coal, anthracite or manufactured fuels derived from these coals).

NOTE This standard does not apply to inset open fires without convection (see BS 4834).

The standard covers appliances of nominal widths 350 mm, 400 mm, 450 mm, 500 mm and 550 mm designed for use either with fireplace components specified in BS 1251 or with special fireplace components or boilers supplied with the appliance.

The essential components of appliances covered by this standard are the firefront, bottomgrate, ashpit cover, ashpan, means of primary air control and a convection chamber.

Specified optional features may comprise a deepening bar, deepening plate, front firebars, undergrate gas igniter, boiler and throat restrictor. Fan(s) may be incorporated for supplying combustion air and/or convection air.

Appliances are designated as either intermittent or overnight.

1.2 References

1.2.1 Normative references

This British Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this British Standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

1.2.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

1.3 Definitions

For the purposes of this British Standard, the definitions given in BS 1846-1, BS 6100-1.5.1, BS 3250-1 and BS 3323 apply together with the following.

1.3.1

effective grate area

the area *Y* in the plane of the bottomgrate, enclosed by the back and sides of the firebox and by the firefront, when the appliance is installed in accordance with the manufacturer's instructions (see A.4.5)

1.3.2

rectangular bottomgrate

a bottomgrate, the sides of which form a rectangle

1.3.3

tapered bottomgrate

a bottomgrate, the sides of which form a trapezium

1.3.4

normal output boiler

a boiler designed to give a water heating output level of at least 2.3 kW but less than 3.5 kW at the target burning rate

1.3.5

high output boiler

a boiler designed to give a water heating output level of at least 3.5 kW at the target burning rate

1.3.6

target burning rate

a designated rate of fuel consumption (on a dry basis), depending upon the nominal width and category of the appliance under specified test conditions

1.3.7

ash shedding area

the area *Z* within the frame of the bottomgrate, as shown in Figure 1 a) or Figure 1 b), comprising the projected area of the firebars and the spaces between the firebars in the plane of the bottomgrate (see A.4.5)

1.3.8

firefront

the structure that forms the front of the appliance and which may also be decorative

1.3.9

ash collection area

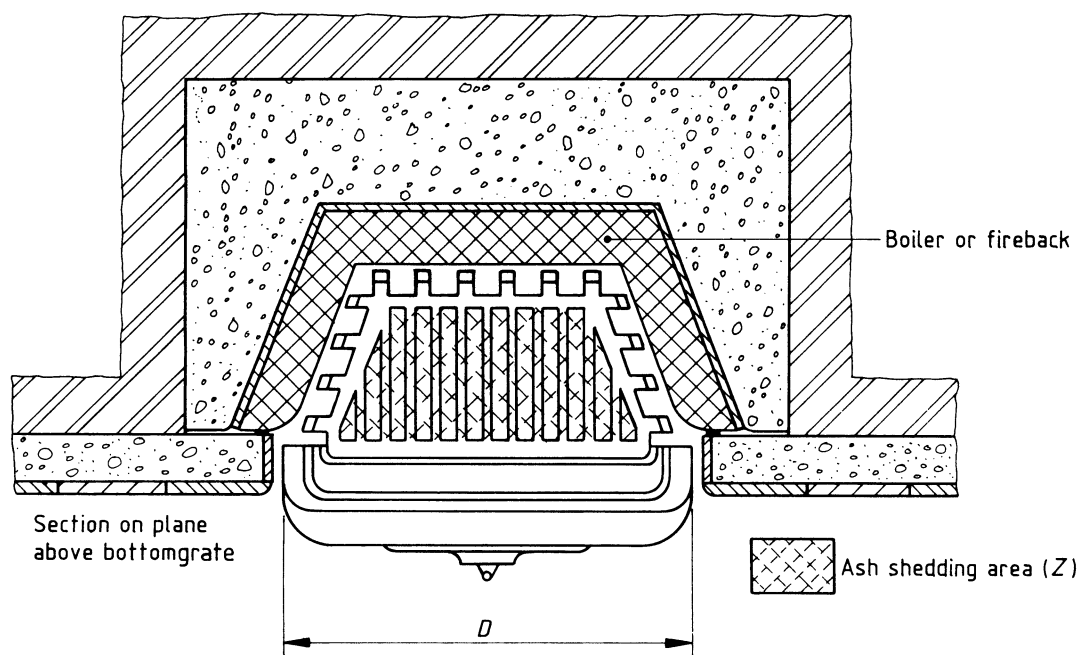
the maximum area X of the ashpan capable of collecting ash, unless ash deflectors or similar design features are fitted. In this case, the ash collection area X includes the projected area of those parts of the deflectors, etc., that do not overlap the ashpan when it is in place (see A.4.5)

1.4 Classification

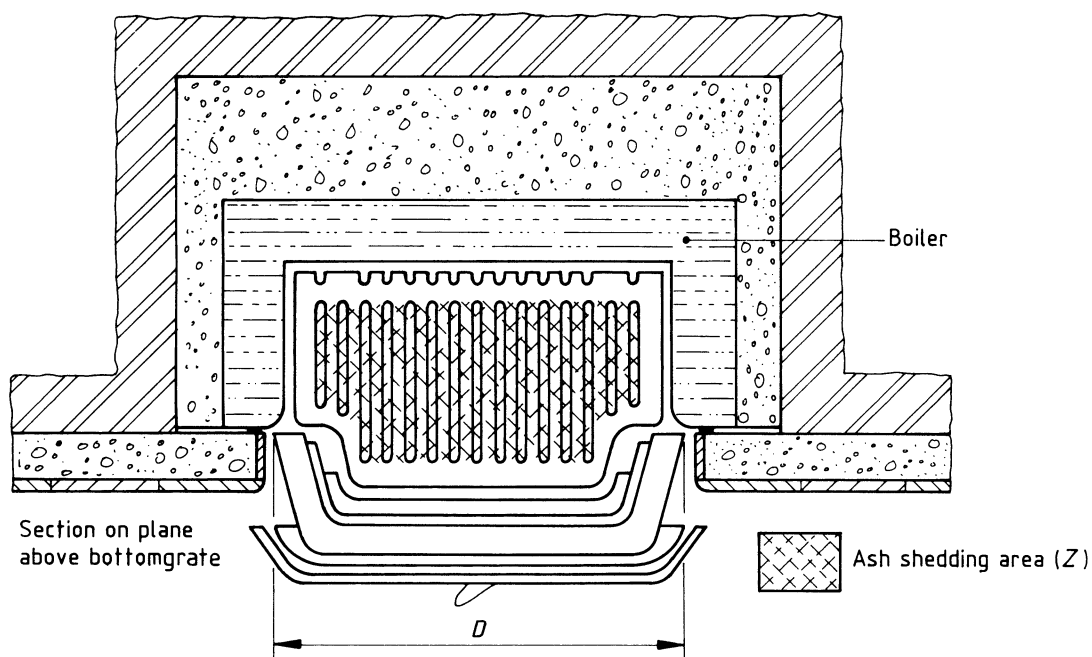
For the purposes of this standard, appliances are categorized as follows.

- a) Appliances with a tapered bottomgrate [see Figure 1 a)]:
 - 1) without a boiler;
 - 2) with a boiler designed for normal output;
 - 3) with a boiler designed for high output (see note).
- b) Appliances of minimum nominal width 400 mm (see note), with a rectangular bottomgrate [see Figure 1 b)], with a boiler designed for high output. This category includes appliances designated as capable of burning bituminous coal at enhanced efficiency. This category excludes intermittent appliances.

NOTE Appliances with a rectangular bottomgrate which do not conform the dimensions given in Table 2 and Table 3 are treated as category a) 3) appliances.



a) Tapered bottomgrate



b) Rectangular bottomgrate

Figure 1 — Typical inset open fire showing ash shedding area