

Specification for

Roomheaters burning wood logs

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Solid Mineral Fuels Standards Policy Committee (SFC/-) to Technical Committee SFC/9, upon which the following bodies were represented:

- Association of British Solid Fuel Appliances Manufacturers
- British Ceramic Tile Council
- British Coal Corporation
- Consumer Policy Committee of BSI
- Department of Energy (Energy Efficiency Office)
- Department of the Environment
- Domestic Solid Fuel Appliances Approval Scheme
- Incorporated Association of Architects and Surveyors
- Institute of Building Control
- Low Temperature Coal Distillers Association of Great Britain Ltd.
- METCOM
- National Fireplace Council Manufacturers' Association
- National Society for Clean Air
- Solid Fuel Advisory Service
- Solid Smokeless Fuels Federation
- Waterheater Manufacturers' Association
- Wood & Solid Fuel Association of Retailers and Manufacturers

This British Standard, having been prepared under the direction of the Solid Mineral Fuels Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 August 1990

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The following BSI references relate to the work on this standard:
Committee reference SFC/9
Draft for comment 88/51476 DC

ISBN 0 580 17987 7

Amendments issued since publication

Amd. No.	Date of issue	Comments
6730	September 1991	Indicated by a sideline in the margin

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Foreword

This British Standard has been prepared under the direction of the Solid Mineral Fuels Standards Policy Committee.

In the last few years there has been an increasing need to provide a specification for domestic heating appliances designed to burn wood logs. There are long-established British Standards for appliances designed to burn solid mineral fuels, gas and oil and the present need to cover wood-burning appliances has come from two sources. Firstly, the Trade Descriptions Act 1972 and the Energy Conservation Act 1981 have provided an impetus for the specification of a test method providing the information for labelling wood-burning appliances with data on fuel consumption and rated output. Secondly, the Consumer Protection Act 1987 has made it important to ensure that there are proper specifications for the construction of wood-burning appliances, with particular emphasis on safety. This British Standard fulfils both these requirements for overnight roomheaters designed to burn wood logs. The constructional requirements in this standard have much in common with those in BS 3378. Also, the method for determination of rated heat output (wood logs) is based on the procedures described in BS 3250-2:1961, to which frequent reference is made.

This British Standard does not cover catalytic reactors that can be fitted as accessories to reduce smoke emission, as at present there is insufficient experience of their use in the UK to produce a precise specification. However, this position will be kept under review.

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 14, 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 and performance requirements and describes methods of test for overnight roomheaters designed to burn only wood logs. The standard covers inset and freestanding roomheaters with or without a boiler and with manual or thermostatic control. It does not apply to intermittent or multifuel appliances, nor to any catalytic device.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

1.2 Definitions

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

1.2.1

full load

the mass of the specified test fuel, corrected to 20 % total moisture content, when the appliance is filled to capacity (see B.1)

1.2.2

nett loading amount

the mass of the specified test fuel, corrected to 20 % total moisture content, equal to 90 % of the full load

1.2.3

target burning rate

the burning rate obtained when the nett loading amount is consumed in the refuelling interval

1.2.4

rated heat output (wood logs)

the mean rate of heat output from the roomheater over the refuelling interval when burning test fuel under conditions defined in Appendix A

1.2.5

direct room heating output

the sum of the radiation and convection outputs

1.2.6

log guard

one or more deepening bars

1.3 Refuelling interval

The refuelling interval, applied during the method described in Appendix A, shall be 120 ± 1 min.

Section 2. Construction

2.1 General

The body of the appliance shall be constructed of cast iron or steel plate.

No part of the appliance shall comprise or contain asbestos.

Materials for construction of the parts of the appliance that are in contact with the fuel or flue gases and are not water-backed shall comply with Table 1.

Provision shall be made for parts which form a seal to be capable of being located securely to prevent the leakage of air or combustion products between the firebox, the flue gas passageways and the ambient air. Joints between metal surfaces in the firebox or flue gas passageways shall be air tight and shall be welded, seam welded, riveted or bolted.

NOTE 1 Where a seal is to be made with fire-cement, the gaps should be as small as practicable and the cement should be well supported by the adjacent metal surfaces.

Appliances with separate charging doors on the side or top shall have a log guard fitted.

Component parts known to require periodic replacement shall be designed or marked to ensure correct fitting and shall bear identifying marks.

NOTE 2 Component parts should be easily replaceable.

Provision shall be made for fixing the roomheater to the hearth.

NOTE 3 The appliance finish should be durable and such that it can be easily cleaned or refurbished.

2.2 Log guard

If a log guard is fitted, the design shall be such that:

- it is removable;
- it cannot be accidentally dislodged;
- for appliances without separate charging doors, the distance between the top of the guard and the upper edge of the firedoor opening is at least 150 mm, to facilitate charging.

NOTE For appliances with separate charging doors, see 2.7.

2.3 Bottomgrate

If a bottomgrate is fitted, it shall be capable of being removed and shall be designed or marked to ensure correct assembly.

2.4 Ashpan

If a bottomgrate is fitted an ashpan shall be provided.

The ashpan shall be constructed of steel of minimum thickness 0.91 mm.

NOTE 1 The ashpan should be open ended at the rear.

The volume of the ashpan, determined geometrically, shall be not less than 10 % of the firebox capacity of the roomheater, determined in accordance with A.1 of BS 3378:1986.

NOTE 2 The ashpan should be designed and constructed to ensure the following:

- that it can be easily and safely withdrawn, carried and emptied, when hot using the tool(s) provided (see 2.15), without undue spillage of ash;
- that it does not distort in normal use to an extent that makes it unsuitable for use.

2.5 Ashpit cover

Any ashpit cover shall be designed to ensure that:

- its closure is not easily prevented by spilled undergrate material;
- when closed, it maintains a seal of the ashpit opening such that the clearance does not exceed 0.25 mm at any point;
- when hot, it can be opened or removed easily and safely either with the tool provided (see 2.15) or with a handle whose surface temperature does not exceed 55 °C during normal operation of the appliance.

NOTE It is strongly recommended that:

- the distance between the lower edge of the ashpit cover and the hearth should be not less than 6 mm;
- it should be difficult to dislodge the cover accidentally.

Table 1 — Minimum thickness of non water-backed materials

Component	Cast iron	Low carbon steel	Stainless steel ^a	Vitreous enamelled steel ^b
	mm	mm	mm	mm
Firebox ^c				
with replaceable protective lining ^d	3.00	2.75	0.91	Not suitable
without replaceable protective lining ^d	5.00	4.72	Not suitable	Not suitable
Flueways and other parts of firebox	3.00	2.75	0.91	1.82

^a Grades 316S11, 316S13, 316S31, 316S33 of BS 1449-2:1985.
^b Coated both sides with acid- and heat-resistant enamel.
^c That part of the firebox not above the datum level.
^d A lining of insulating refractory material or cast iron.