BRITISH STANDARD

BS 7566-2: 1992

Installation of factory-made chimneys to BS 4543 for domestic appliances —

Part 2: Specification for installation design

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/506, Chimneys, to Subcommittee B/506/5, Chimneys and their components having inner linings of metal, upon which the following bodies were represented:

Association of British Solid Fuel Appliances Manufacturers
British Coal Corporation
British Combustion Equipment Manufacturers' Association
British Flue and Chimney Manufacturers' Association
British Gas plc
British Precast Concrete Federation Ltd.
British Steel Industry
Building Services Research and Information Association
Clay Pipe Development Association Limited
Department of the Environment
Department of the Environment (Construction Directorate)
Health and Safety Executive
Institute of Domestic Heating and Environmental Engineers
National Association of Plumbing, Heating and Mechanical Services Contractors
National Federation of Master Steeplejacks and Lightning Conductor Engineers
National House-building Council

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Department of the Environment (Building Research Establishment)
Institute of Vitreous Enamellers
Real Fire Association
Society of British Gas Industries
Vitreous Enamel Development Council

This British Standard, having been prepared under the direction of Technical Committee B 506, was published under the authority of the Standards Board and comes into effect on 15 July 1992

The following BSI references relate to the work on this standard:
Committee reference B/506/5
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Contents

Foreword

This British Standard has been prepared under the direction of the Technical Committee B/506, Chimneys, and together with Parts 1, 3 and 4 of BS 7566 supersede BS 6461-2:1984, which is withdrawn.

This standard covers the installation of factory-made chimneys complying with the requirements of BS 4543. Masonry chimneys are covered by BS 6461-1:1984.

BS 7566 is published in separate Parts in an attempt to highlight the interfaces involved in the successful specification, design and installation of factory-made chimneys.

Part 1 of BS 7566 gives a method of specifying the information which should be supplied by the purchaser to the installation designer.

This Part of BS 7566 specifies design instructions to be followed by the installation designer to take account of the purchaser's requirements and relevant standards, when developing a chimney design for the particular application.

Part 3 of BS 7566 specifies installation practices which are to be followed in order to ensure that the designers intentions are satisfactorily realized and which reflect good site supervision and working practices.

Part 4 of BS 7566 gives guidance to the purchaser, designer and installer on the options which have to be identified and the methods of achieving specified requirements in a manner that will ensure a safe and satisfactory installation. It also gives important guidance on matters such as maintenance and cleaning.

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 8, 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 7566 gives the design criteria and practice to be followed by the installation designer when designing an installation for a factory-made chimney complying with BS 4543 which, when installed in accordance with BS 7566-3, will successfully convey products of combustion to the outside atmosphere.

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

2 Definitions

For the purposes of this Part of BS 7566 the definitions in BS 4543-1 apply.

3 Exchange of information and structural check

The installation designer shall be in possession of and thoroughly conversant with the information given by the purchaser in accordance with BS 7566-1.

The installation designer shall check that the building structure is capable of supporting the chimney.

NOTE Attention is drawn to the need to comply with all local and general regulations, planning permission, clean air act, fire regulations, etc.

4 Openings into chimney flue

Openings in factory-made chimneys for the purpose of inspection or cleaning (see Figure 1) or for fitting a flue draught stabilizer shall be formed by the use of standard sections from the chimney manufacturers' standard range and shall be accessible after installation (see BS 7566-4).

Any opening other than a flue draught stabilizer, shall be fitted with a close fitting, durable, non-combustible cover as supplied by the chimney manufacturer.

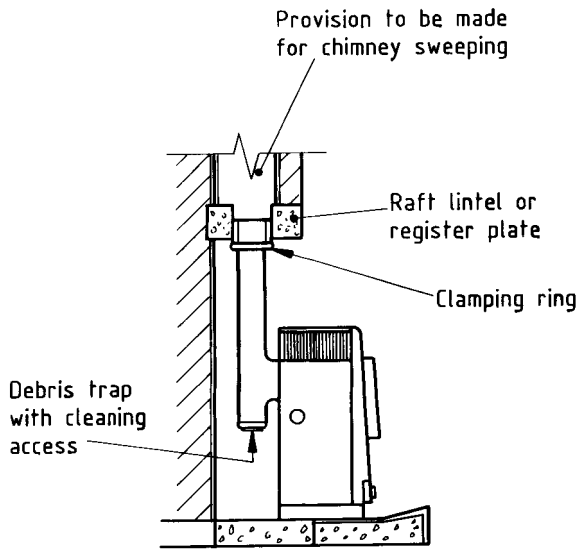


Figure 1 — Example of cleaning access/debris trap

5 Chimney flues

5.1 Number of appliances

A chimney flue shall serve only one appliance.

5.2 Chimney flue size

5.2.1 The chimney flue shall be sized in accordance with Table 1 and **5.2.2**.

5.2.2 In the case of room heaters, cookers and independent boilers the flue size shall be not less than the cross-sectional area of the flue outlet from the appliance. In the case of multi-fuelled appliances the appliance manufacturer's recommendations on flue sizes shall be followed.

6 Enclosure

Throughout its length, including passage through a cupboard or other storage space or through a roof space, the chimney shall be enclosed by a rigid, non-combustible barrier. This shall be separate from the outside of the chimney by at least the distance recommended in the manufacturer's instructions, commonly referred to as the manufacturer's specified distance *X* mm.

Table 1 — Size of flue

Installation	Minimum flue size
Fireplace recess with an opening up to 500 mm × 550 mm	200 mm diameter or square section of equivalent area
Inglenook recess appliances	A free area of 15 % of the area of the recess opening
Open fire	200 mm diameter or square section of equivalent area
Closed appliance up to 20 kW rated output burning bituminous coal	150 mm diameter or square section of equivalent area
Closed appliance up to 20 kW rated output	125 mm diameter or square section of equivalent area
Closed appliance above 20 kW and up to 30 kW rated output	150 mm diameter or square section of equivalent area
Closed appliance above 30 kW and up to 45 kW rated output	175 mm diameter or square section of equivalent area

NOTE Should an offset be necessary in a flue run then the flue size should be increased by 25 mm on each dimension (diameter or each side of square flue).

7 Chimney route

7.1 General

The chimney route shall be the shortest, most direct, vertical distance between the two predetermined points, with the chimney passing through the roof as near to the ridge as is practicable (see Figure 2). The chimney route shall be determined by the intended position of the installed appliance, its flue outlet and the point of chimney termination at high level. Flue outlets shall terminate outside the shaded area shown in Figure 2. The chimney route selected shall enable the chimney manufacturer's standard components to be used in carrying out the installation.

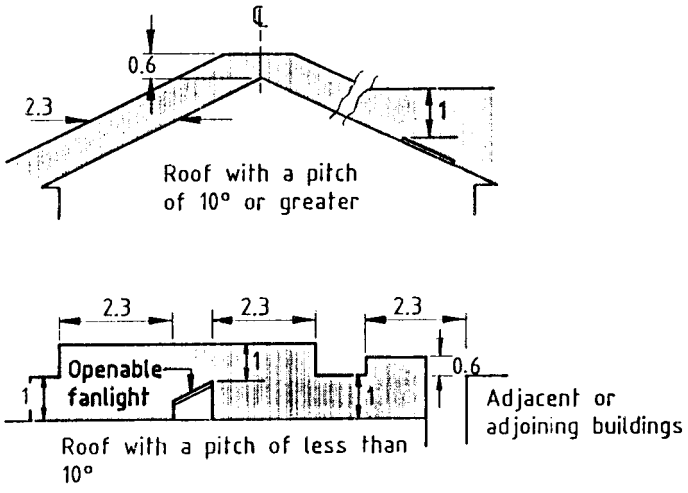
Chimney sections shall not be modified or cut.

7.2 Distance from combustibles

The chimney route shall permit any combustible material to be kept at the manufacturer's distance *X* mm (see BS 4543-1) from the external surface of the chimney (see BS 7566-4).

The chimney shall not pass through any part of the building forming a separate compartment or pass through any wall/partition, unless it is cased in non-combustible material giving at least half the fire resistance of the compartment wall or floor.

CAUTION. If modification of trusses or rafter involves cutting away timbers, it is imperative to ensure this action does not adversely affect the structure.



All dimensions are in metres.

NOTE ℄ is the centre line.

Figure 2 — Outlets from flues

7.3 Chimney bends

The chimney shall have no more than two bends in its length and each shall provide a change of direction not greater than 30° from the vertical. The run of chimney between bends shall not exceed 20 % of the total chimney length.

7.4 Exposed sections

7.4.1 *Height* (see Figure 2)

Where the chimney passes through a pitched roof more than 0.6 m from the ridge the horizontal distance between the roof and the chimney termination shall be not less than 2.3 m unless the termination is at least 0.6 m above the ridge (excluding any chimney terminal).

Where the discharge end of the chimney flue is within a horizontal distance of 2.3 m from any adjoining structure or opening into a building the termination height shall be not less than 1 m above that structure or opening.

Where the chimney passes through a flat roof, or a shallow pitched roof having a slope of less than 10°, the chimney termination shall be 1 m above the level of the roof at the point of penetration through the structure.

7.4.2 *Stability of exposed sections*

The roof structure shall provide lateral support for the chimney, (see BS 6060 and BS 5268-3). When the chimney projects above the last point of lateral restraint it shall be stabilized by further lateral restraints as recommended by the manufacturer by the use of restraints attached to the chimney and anchored to the building structure (see BS 7566-4).

7.4.3 *Termination*

There shall be no termination device that impedes the discharge of flue gases or prevents chimney cleaning (see BS 7566-4).

7.4.4 *Lightning protection*

Where lightning protection on chimney earthing is considered to be desirable (see BS 7566-1), it shall be designed in accordance with BS 6651 (see also BS 7566-4).

7.5 Support

7.5.1 The appliance shall not support the chimney. The chimney shall be supported above the fire place recess by either a raft lintel or a fire place hood, or otherwise by a load bearing plate.

Chimney offsets shall be supported and additional intermediate supports shall be positioned as appropriate (see Figure 3 and Figure 4).

7.5.2 All fixings shall be such that the assembly is non-combustible and durable.

7.6 Joints

Joints between chimney sections and associated locking bands shall not occur within any ceiling joist space or wall/partitions.

The lower end of the chimney shall extend at least 150 mm below the ceiling.

Where the flue pipe connects to the chimney the connection shall be made using a standard connecting piece from the chimney manufacturer's range.

7.7 Weatherproofing

The opening through which the chimney passes from within the building to the outside shall be weatherproofed.

7.8 Access

Access for testing, maintenance and cleaning throughout the full height of the installed chimney shall be possible without dismantling the chimney (see BS 7566-4).

7.9 Fire-stop

Fire-stops or fire-stops/spacers shall be fitted to the frame formed between each building compartment through which the chimney passes (see Figure 3, Figure 4 and Figure 5, also BS 7566-4).

7.10 Chimneys in multi occupancy buildings

Where the chimney passes through any part of the building forming a separate compartment, it shall be cased in non-combustible material having a rated fire resistance of at least half the fire resistance of the compartment wall or floor. The enclosure shall be provided with a fire resistant access for maintenance and cleaning purposes, accessible from a public area.

7.11 Flue pipes

7.11.1 *General*

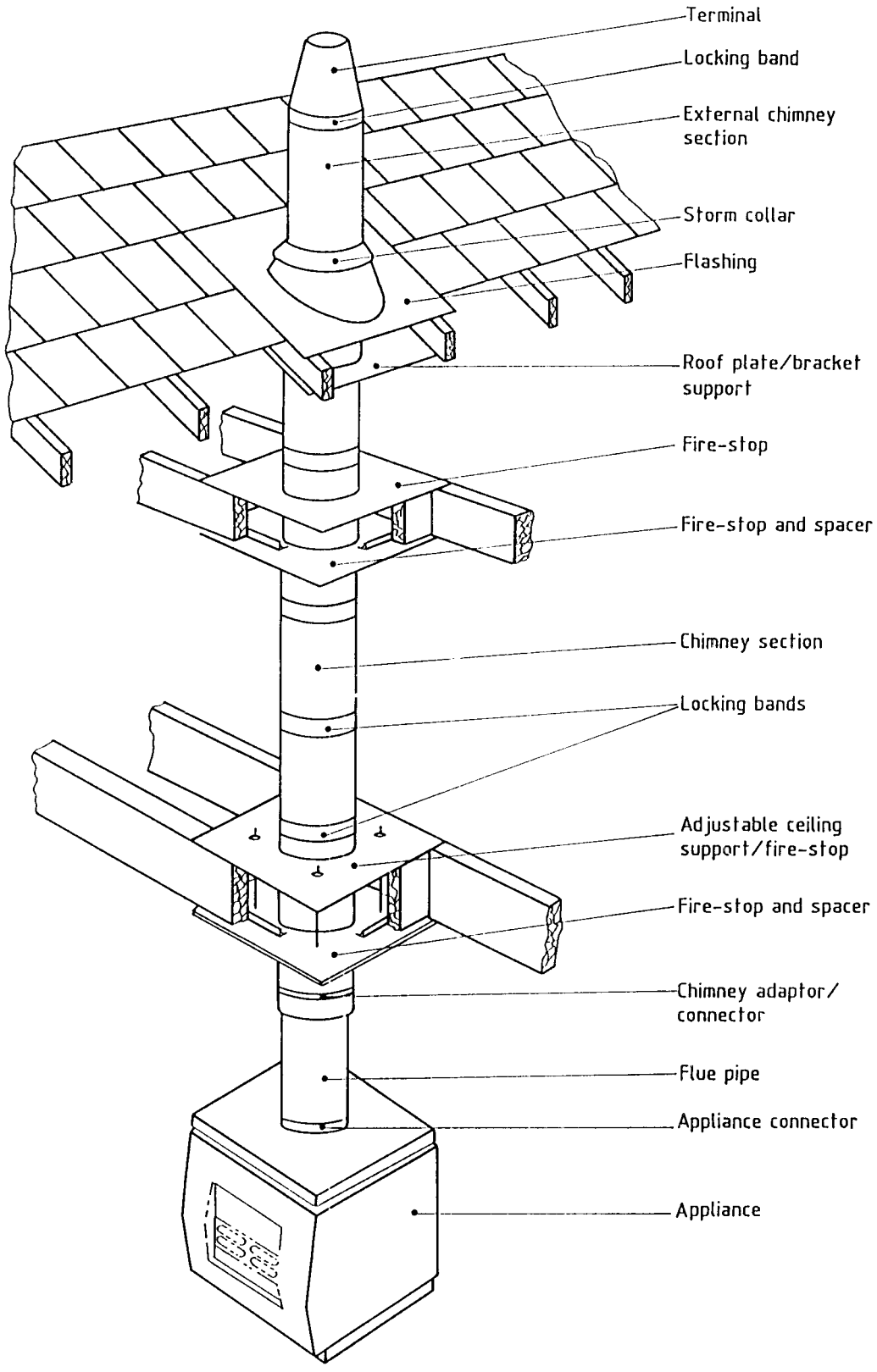
A flue pipe shall be used only to connect the appliance to the chimney, it shall serve only one appliance and shall not pass through any wall or ceiling.

NOTE A list of suitable materials of flue pipes is given in Appendix A.

7.11.2 *Flue pipe bends and horizontal flues*

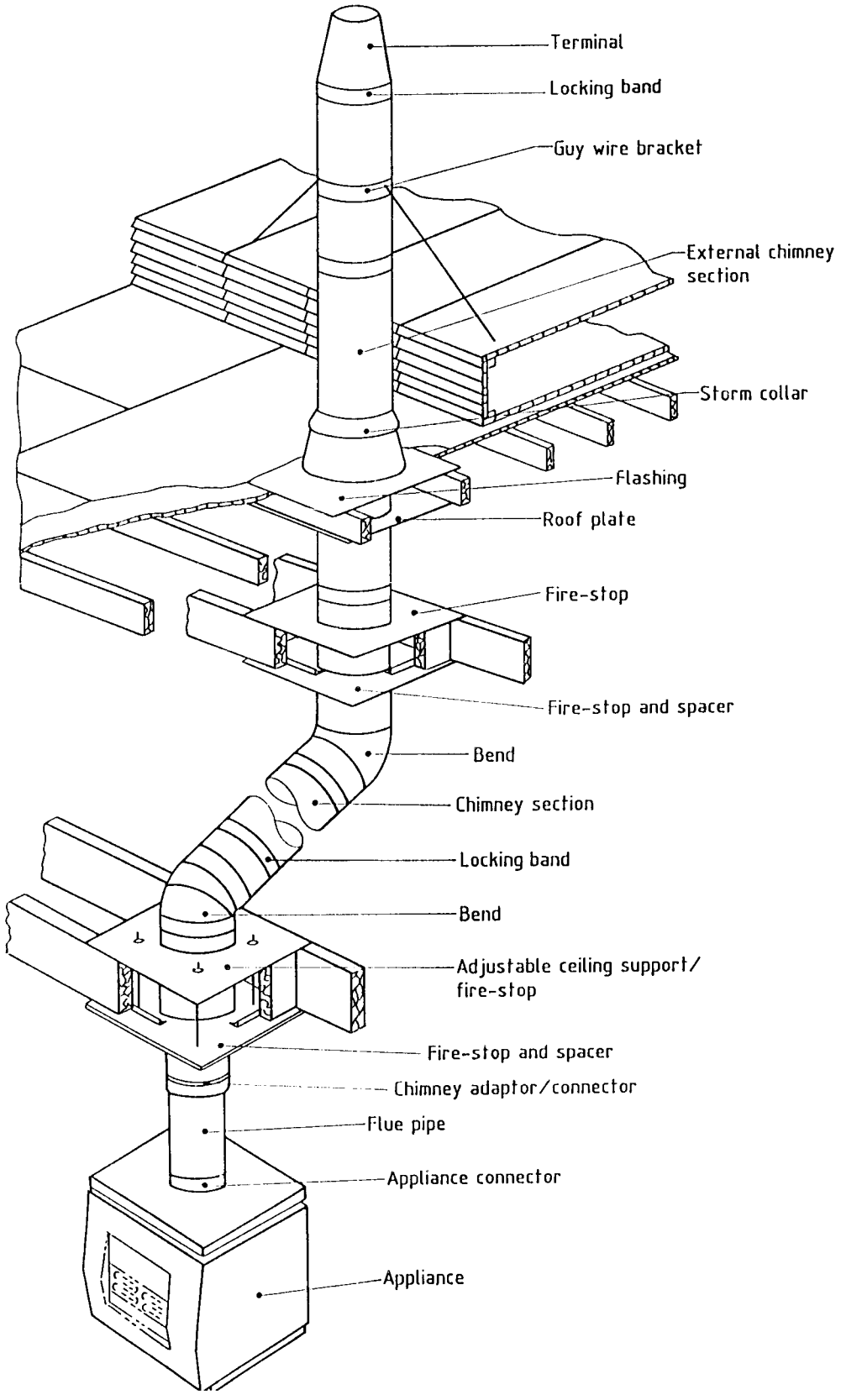
A flue pipe shall have no more than two bends each providing a maximum change of direction of 45° from the vertical, other than in the case of a back entry application using a 90° tee piece in accordance with the manufacturers' instructions.

A horizontal flue run shall only be used to connect a back outlet appliance to a chimney or flue pipe and shall be not more than 150 mm in length.



NOTE Always refer to manufacturer's installation instructions for full details regarding correct installation and use of support components.

Figure 3 — Typical straight chimney installation



NOTE Always refer to manufacturer's installation instructions for full details regarding correct installation and use of support components.

Figure 4 — Typical chimney installation incorporating bends

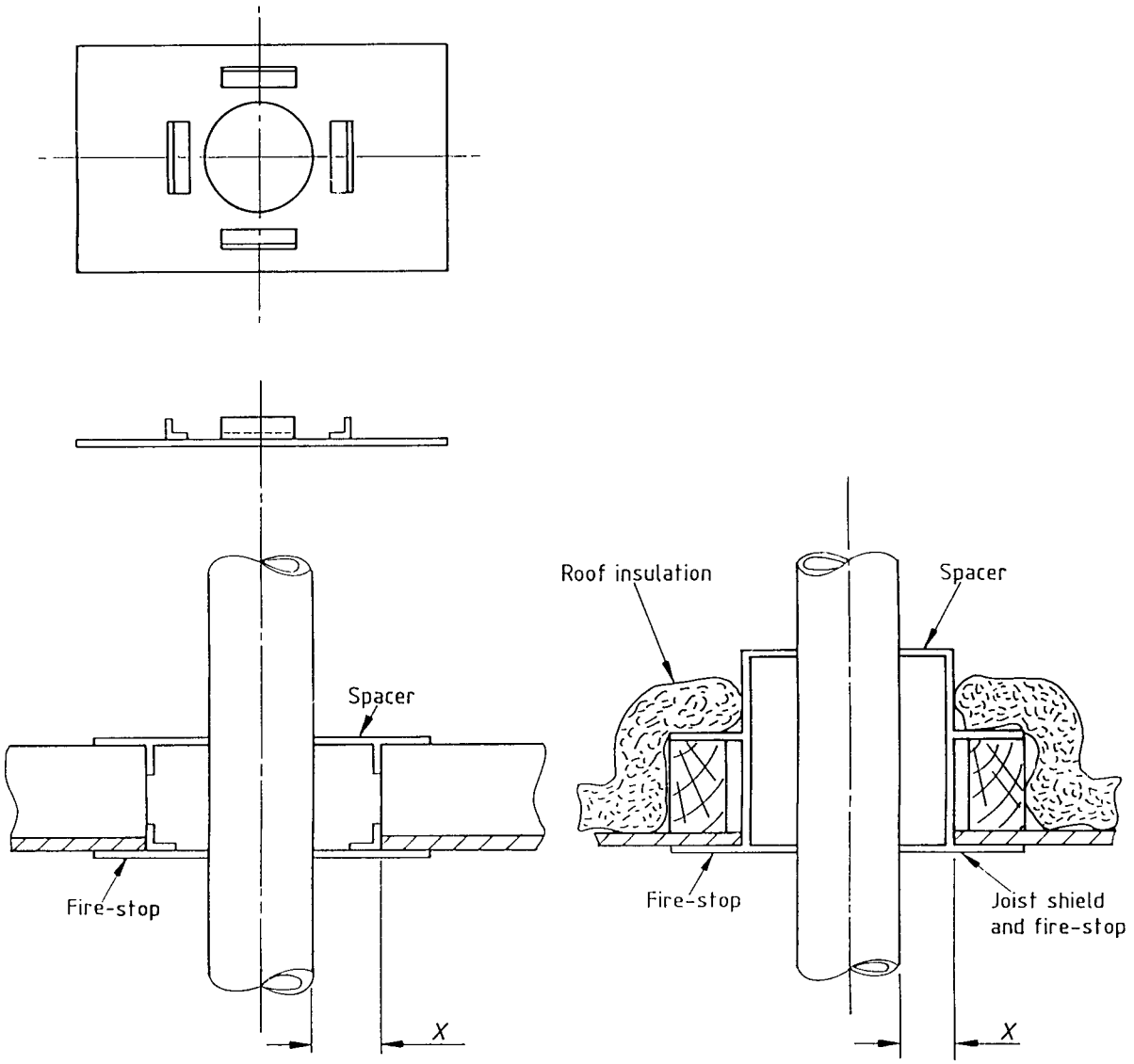


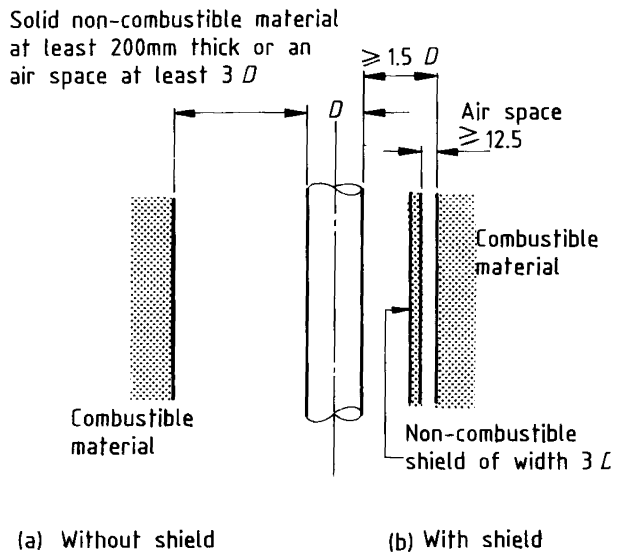
Figure 5 — Typical fire-stops and spacers

7.11.3 ***Access for cleaning***

Any flue pipe shall be erected in such as way that it can be cleaned thoughout its length. A sealed cleaning door having a durable fixing shall be fitted to the flue pipe if access for cleaning cannot be achieved through the appliance or via a suitable soot door with the chimney that allows easy access to the flue pipe (see BS 7566-4).

7.11.4 ***Separation from combustible material***

Flue pipes shall be separated from combustible materials by at least the distances shown in Figure 6.



Dimensions is in millimetres.

NOTE *D* is the diameter of the flue pipe.

Figure 6 — Separation of flue-pipe from surface of adjacent combustible materials

Appendix A Materials of flue pipes

The following materials are suitable for the manufacture of flue pipes:

a) cast iron to BS 41;

b) low carbon steel to BS 6323 with a wall thickness of at least 3 mm;

c) stainless steel to BS 1449-2 for Grade 316 S11, 316 S13, 316 S16, 316 S31, 316 S33 or to the equivalent Euronorm 88-71 designation with a wall thickness of at least 1 mm;

d) vitreous enamelled steel of low carbon content, coated internally and externally with acid-resistant enamel to BS 6999.

The nominal thickness of steel should be at least 0.9 mm for pipes up to 113 mm and 1.2 mm if larger. The vitreous enamel should be resistant to thermal shock, combustion products and heat when tested in accordance with BS 1344-1 and BS 1344-7. In the test for resistance to combustion products the enamel should achieve a classification of at least SA;

e) other materials not covered by a British Standard where the manufacturer's recommendations express their suitability (see BS 7566-4).

Publication(s) referred to

BS 41, *Specification for cast iron spigot and socket flue or smoke pipes and fittings.*

BS 1344, *Methods of testing vitreous enamel finishes.*

BS 1344-1, *Determination of resistance to thermal shock of coatings on articles other than cooking utensils.*

BS 1344-7, *Determination of resistance to heat.*

BS 1449, *Steel plate, sheet and strip.*

BS 1449-2, *Specification for stainless and heat-resisting steel plate, sheet and strip.*

BS 4543, *Factory-made chimneys.*

BS 4543-1, *Methods of test.*

BS 4543-2, *Specification for chimneys with stainless steel flue linings for use with solid fuel fired appliances.*

BS 4543-3, *Specification for chimneys with stainless steel flue linings for use with oil fired appliances.*

BS 5268, *Structural use of timber.*

BS 5268-3, *Code of practice for trussed rafter roofs.*

BS 6060, *Specification for nipple-type lubrication fittings for earth-moving machinery.*

BS 6323, *Specification for seamless and welded steel tubes for automobile, mechanical and general engineering purposes.*

BS 6461, *Installation of chimneys and flues for domestic appliances burning solid fuel (including wood and peat).*

BS 6461-1, *Code of practice for masonry chimneys and flue pipes*[1)].

BS 6651, *Code of practice for protection of structures against lightning.*

BS 6999, *Specification for vitreous-enamelled low-carbon-steel flue pipes, other components and accessories for solid-fuel-burning appliances with a rated output of 45 kW.*

BS 7566, *Installation of factory-made chimneys to BS 4543 for domestic appliances.*

BS 7566-1, *Method of specifying installation design information.*

BS 7566-3, *Specification for site installation.*

BS 7566-4, *Recommendations on installation design and installation.*

[1)] Referred to in the foreword only

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