

Oil burning equipment —

Part 2: Specification for vaporizing burners

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Refrigeration, Heating and Air Conditioning Standards Policy Committee (RHE/-) to Technical Committee RHE/13, upon which the following bodies were represented:

- Agricultural Engineers' Association
- Associated Offices Technical Committee
- British Combustion Equipment Manufacturers' Association
- Building Services Research and Information Association
- Chartered Institution of Building Services Engineers
- Department of the Environment (Building Research Establishment)
- Department of the Environment (Property Services Agency)
- Electricity Supply Industry in England and Wales
- Engineering Equipment and Materials Users' Association
- Institute of Domestic Heating and Environmental Engineers
- Institute of Energy
- Institution of Fire Engineers
- Loss Prevention Council
- Power Generation Contractors' Association (BEAMA Ltd.)
- Coopted Members

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

This Part of BS 799 has been prepared under the direction of the Refrigeration, Heating and Air Conditioning Standards Policy Committee. It replaces BS 799-2:1981 which is withdrawn.

This edition of BS 799-2 contains no technical changes from the 1981 edition. It does not reflect a full review, which will be undertaken in due course. The only changes implemented by this edition are:

- a) the references have been brought up-to-date;
- b) the clause numbering system has been changed;
- c) minor editorial changes have been included to bring the standard up to current BSI house style.

This Part of BS 799 is one of a series of standards on oil burning equipment and deals with types of vaporizing burners suitable for burning oil complying with classes C2 and D of BS 2869. It specifies requirements for the safe and reliable operation of vaporizing burners.

The object of this Part of BS 799 is to fulfil the need for a British Standard on various types of burners often associated with single family dwellings and not covered by BS 799-3 and BS 799-4, which deal with atomizing burners. For oil storage tanks, reference should be made to BS 799-5.

Where information is required relating to the installation of the types of oil burner covered by this Part of BS 799, reference should be made to BS 5410-1.

Product certification. Users of this British Standard are advised to consider the desirability of third party certification of product conformity with this British Standard based on testing and continuing surveillance, which may be coupled with assessment of a supplier's quality systems against the appropriate Part of BS 5750.

Enquiries as to the availability of third party certification schemes will be forwarded by BSI to the Association of Certification Bodies. If a third party certification scheme does not already exist, users should consider approaching an appropriate body from the list of Association members.

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.

Section 1. General

1.1 Scope

This Part of BS 799 specifies requirements for oil vaporizing burners and associated equipment for boilers, heaters, furnaces, ovens and other similar static flued plant such as free standing space heating appliances for single family dwellings. It is not intended to be applicable to atomizing burners¹⁾ or gas generators used for industrial purposes or to marine and mobile installations.

The standard does not apply to the appliances to which the burner is fitted.

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 Part of this British Standard the following definitions apply.

1.2.1

oil

petroleum oil fuel of classes C2 and D as specified in BS 2869

1.2.2

vaporizing oil burner

burner incorporating a vaporizing or gasifying device and including means of regulating the oil and combustion air. The burner may also include filter, pumps and fans. Ignition equipment control devices, safety devices and oil preheaters may be incorporated with the burner as a unit, according to the type of oil burning equipment

1.2.3

pot burner

burner consisting of a metal pot in which the oil is vaporized and in which combustion commences. A vaporizing surface, usually the base of the pot, is provided and oil is fed to it by gravity from a constant-level device via a metering device.

Combustion air usually enters through perforations in the walls of the pot in such a way that it mixes progressively with the oil vapour. Separate air feed pipes or additional air inlets forming an integral part of the burner, such as an annulus at the mouth of the pot, may also be used. Although combustion commences in the pot, the flame normally burns mainly outside the mouth of the pot

1.2.4

rotary burner

burner consisting of a centrally mounted motor that provides means of supplying air and oil to the combustion zone formed local to the appliance's heating surface. A vaporizing surface is provided upon which the oil strikes when thrown from the central oil distributor. Combustion air usually enters through the base of the motor housing and is drawn up through the motor by means of a fan on top of the distributor. It is then fed across the hearth plate where it mixes with the vaporized fuel. Normally this mixture then burns on a grill assembly situated above the vaporizing surface. Oil is fed to the burner by means of a constant-level device or oil-control device. From the control it is fed to the distributor, which, by its rotating action, throws the oil in a horizontal plane onto the vaporizing surface

1.2.5

perforated sleeve burner

burner consisting of one or more narrow vaporizing troughs into which the oil is fed by gravity from a constant-level device via a metering device. The sides of each trough are surmounted by perforated metal walls through which the combustion air enters and mixes with the oil vapour. Combustion takes place partially above, but mainly between, the pairs of perforated sleeves. A wick may be fitted in the trough for kindling purposes

1.2.6

fully automatic burner

burner that automatically performs a sequence of operations including starting and stopping. The oil consumption may be either preset or be automatically variable between predetermined limits fixed by the manufacturer

1.2.7

semi-automatic burner

burner that is started either manually or by manually controlled electric ignition, and is finally shut down by hand. Whilst the burner is alight the oil consumption is automatically varied from high to low or vice versa or to any other flow rate as may be determined by the heat requirements, e.g. boiler water temperature

¹⁾ See BS 799-3 and BS 799-4.