BS 8511:2010



**BSI Standards Publication** 

# Code of practice for the installation of solid fuel heating and cooking appliances in small craft

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



raising standards worldwide<sup>™</sup>

The BSI copyright notice displayed in this document indicates when the document was last issued.

© BSI 2010

ISBN 978 0 580 59973 6

ICS 97.100.30

The following BSI references relate to the work on this standard: Committee reference RHE/28 Draft for comment 09/30169955 DC

**Publication history** First published February 2010

#### Amendments issued since publication

Date Text affected

#### Foreword iii

- 1 Scope 1
- 2 Normative references 1
- **3** Terms and definitions *2*
- 4 Appliance selection 5
- 5 Installation General requirements 7
- 6 Hearth 7
- 7 Separation of the appliance from combustible material in surrounding structure 12
- 8 Chimney arrangements 17
- 9 Combustion and ventilation air 24
- 10 Commissioning 25

#### Annexes

Annex A (normative) Ventilation requirements 28 Annex B (normative) Information to be provided to the installer 29 Annex C (normative) Information to be provided to the appliance user 29 Annex D (normative) Additional information to be supplied with appliances with boilers 33

Bibliography 35

#### List of figures

Figure 1 – Schematic diagram of a typical appliance installation 5 Figure 2 – Example of a hearth for an appliance where the exposed surface of the hearth does not exceed 100 °C 8

Figure 3 – Example of hearth construction suitable for an appliance where combustible material is underneath the hearth and the exposed surface of the hearth might exceed 100 °C g

Figure 4 – Further example of hearth construction suitable for an appliance 9

Figure 5 – Non-combustible hearth surface surrounding an appliance installed substantially parallel to the surrounding structure 10 Figure 6 – Comparison of minimum upstand height and minimum

distance from appliance 10

Figure 7 – Non-combustible hearth surface surrounding an appliance installed at an angle to surrounding structure 11

Figure 8 – Example of suitable installation of surrounds to protect combustible material – Appliance installed substantially parallel to surrounding structure 13

Figure 9 – Example of suitable installation of surrounds to protect combustible material – Appliance installed at an angle to surrounding structure 14

Figure 10 – Example of suitable installation of surrounds to protect combustible material with appliance installed substantially parallel to surrounding structure 16

Figure 11 – Example of suitable installation of surrounds to protect combustible material with appliance at an angle to surrounding structure *17* 

Figure 12 – Examples of suitable chimney arrangements 21 Figure 13 – Examples of chimney arrangements where it passes through the roof 22

Figure 14 – Examples of chimney arrangements where it passes through the roof 23

Table 1 – Dimensions for non-compustible nearth surface where appliance sides and rear are substantially parallel to the surrounding structure (and applicable up to 30°) 10 Table 2 – Dimensions for non-combustible hearth surface where appliance is installed at an angle to the surrounding structure (and applicable where the smaller angle is greater than 30°) 11 Table 3 – Alternative dimensions and conductivity of insulation board for the installation arrangement of Figure 8 14 Table 4 – Alternative dimensions and conductivity of insulation board for the installation arrangement of Figure 9 15 Table 5 – Flue size guidance 18

**Summary of pages** This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 36, an inside back cover and a back cover.

#### **Publishing information**

This British Standard was published by BSI on 28 February 2010 and comes into effect on 28 February 2011. It was prepared by panel RHE/28/-/1, *Solid fuel appliances for small craft* on behalf of Technical Committee RHE/28, *Domestic solid fuel appliances*. A list of organizations represented on this committee can be obtained on request to its secretary.

NOTE Panel RHE/28/-/1 was constituted to include expertise from the boat industry and boat users, and representation from Technical Committee GME/33, Small craft.

#### Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

The figures in this British Standard are only illustrative of different installation methods. These are not intended to be implemented without first checking all the parameters specific to a particular installation.

#### Information about this document

In developing this British Standard, the responsible panel acknowledges that it is not always possible to install some appliances in a very limited space (e.g. in traditional narrowboat boatman's back cabins) strictly in accordance with this standard. However, in such instances, installers are encouraged to follow the recommendations of this standard to the most practicable degree.

In such installations, users have to be made aware that the level of safety, particularly the safety margin against damage of the surrounding structure due to over-firing, might be lower than for those which comply fully with this code of practice. End users have to be made aware that extra vigilance has to be exercised during the operation of the appliance.

#### **Presentational conventions**

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

#### **Contractual and legal considerations**

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This code of practice covers the design, installation and operation of solid fuel heating and cooking appliances (hereafter referred to as appliances) which are suitable for fitting into small craft from 2.5 m to 24 m in length. These appliances can burn either natural or manufactured solid mineral fuels, or natural or manufactured wood logs.

This code of practice gives guidance on appliance selection, design considerations, installation requirements, inspection and testing, and preparing instructions for the end user of the appliance. Guidance is also provided on the necessary safety information to be provided to the end user concerning the maintenance and safe use of these appliances.

This code of practice only applies to freestanding appliances with closable doors, with and without legs.

This code of practice does not apply to the installation of appliances with a firebox volume of less than  $0.01 \text{ m}^3$  and a grate size smaller than  $0.05 \text{ m}^2$ , and where the dimensional recommendations of the installation cannot be met (e.g. in traditional narrowboat boatman's back cabins).

NOTE The basic principles in this code of practice can be used in installation of appliances outwith its scope.

Warnings on the provisions necessary for appliances with boilers are given in Annex D, but this code of practice does not cover the installation details of hot water systems.

This code of practice does not cover open fires, inset appliances, or portable or other open appliances such as barbecues.

# 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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 EN 1443:2003, Chimneys – General requirements

BS EN 1856-1, Chimneys – Requirements for metal chimneys – Part 1: System chimney products

BS EN 1856-2, Chimneys – Requirements for metal chimneys – Part 2: Metal liners and connecting flue pipes

BS EN 10296-1, Welded circular steel tubes for mechanical and general engineering purposes – Technical delivery conditions – Part 1: Non-alloy and alloy steel tubes

BS EN 10297-1, Seamless circular steel tubes for mechanical and general engineering purposes – Technical delivery conditions – Part 1: Non-alloy and alloy steel tubes

BS EN 12815, Residential cookers fired by solid fuel – Requirements and test methods