



BSI Standards Publication

Installation and maintenance of gas-fired ducted air heaters of rated heat input not exceeding 70 kW net (2nd and 3rd family gases) – Specification

Publishing and copyright information

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

© The British Standards Institution 2019

Published by BSI Standards Limited 2019

ISBN 978 0 539 00422 9

ICS 97.100.20

The following BSI references relate to the work on this document:

Committee reference GSE/30

Draft for comment 18/30375326 DC

Amendments/corrigenda issued since publication

Date	Text affected
<hr/>	

Contents

	Page
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Competence	4
<i>Table 1 — Approval bodies and statutory regulations by country/territory</i>	5
<i>Table 2 — Competence requirements by country/territory</i>	5
5 Environmental considerations	5
6 Selection of equipment and pre-installation	6
7 Installation	19
<i>Figure 1 — Typical installation where combustion air is supplied from a ventilated roof space</i>	20
<i>Figure 2 — Typical compartment installation of a down-flow fan-assisted ducted-air heater</i>	24
<i>Figure 3 — Airing cupboard partition and guard configuration</i>	26
<i>Figure 4 — Typical slot-fit installation</i>	27
<i>Figure 5 — Typical return air arrangements</i>	30
8 Post-installation	32
Annex A (informative) Servicing and maintenance of convection chamber installations	35
Annex B (normative) Connection options for condensate and combined pressure relief valve/condensate discharge	36
<i>Figure B.1 — Connection of condensate drainage pipe to internal soil and vent stack</i>	37
<i>Figure B.2 — Connection of a condensate drainage pipe downstream of a sink, basin, bath or shower waste trap</i>	40
<i>Figure B.3 — Connection of a condensate drainage pipe upstream of a sink, basin, bath or shower waste trap</i>	41
<i>Figure B.4 — Connection of condensate drainage pipe to external soil and vent stack</i>	42
<i>Figure B.5 — External drain, gully or rainwater hopper</i>	43
<i>Figure B.6 — External termination to rainwater downpipe</i>	44
<i>Figure B.7 — Example of a purpose made soakaway</i>	46
Annex C (informative) Checking the condition of the heat exchanger of open-flued heaters	47
Annex D (informative) Setting up the fan assisted provision of combustion air	48
Bibliography	49

Summary of pages

This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 51, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 28 February 2019. It was prepared by Technical Committee GSE/030, *Gas installations (1st, 2nd and 3rd family gases)*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 5864:2010, which is withdrawn.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- [Annex B](#) gives information about the connection options for condensate and combined pressure relief valve/condensate discharge.
- [Annex C](#) gives information on the procedure for inspecting a heat exchanger.
- [Annex D](#) gives information on the procedure for setting up the fan-assisted provision of combustion air.

Use of this document

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

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

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause J.1.1, which states, “Requirements should be expressed using wording such as: ‘When tested as described in Annex A, the product shall ...’”. This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

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.

In particular, attention is drawn to the following statutory regulations:

The Gas Safety (Installation and Use) Regulations 1998 [\[1\]](#)

The Gas Safety (Installation and Use) Regulations (Northern Ireland) 2004 [\[2\]](#)

The Gas Appliance (Safety) Regulations 1995 [\[3\]](#)

The Asbestos (Prohibitions) Regulations 2003 [\[4\]](#)

The Building (Amendment) Regulations 2009, as amended [\[5\]](#)

The Building (Scotland) Amendment Regulations 2007, as amended [\[6\]](#)

The Building (Northern Ireland) Amendment Regulations 2009 [\[7\]](#)

The Building Control Act (Isle of Man) 1991 [[8](#)]

The Building (Isle of Man) Regulations 2007 [[9](#)]

The Gas Safety (Application) (Isle of Man) Order 1996 [[10](#)]

The Water Supply (Water Fittings) Regulations 1999, as amended [[11](#)]

1 Scope

This British Standard specifies requirements for the selection, installation and maintenance (see Note 1) of flued, gas-fired, ducted-air heaters of rated heat input not exceeding 70 kW, based on net calorific value, burning 2nd or 3rd family gases to heat one or more rooms or internal spaces in either domestic premises (see Note 2) or commercial premises.

It is applicable to warm air heaters that incorporate a fan to circulate the warm air.

It is also applicable to combined air heater/circulator installations and to the servicing and maintenance of heaters that distribute warm air by natural convection (see [Annex A](#)).

It is not applicable to gas installations in towed or motorized leisure accommodation vehicles.

NOTE 1 For the purposes of this British Standard, installation includes design, inspection and commissioning. It is recognized that each of these tasks can be performed by the same person.

NOTE 2 As well as normally constructed dwellings, domestic premises include any permanently sited leisure accommodation vehicles, residential park homes and permanently moored boats.

NOTE 3 For the purposes of this British Standard, heat input is expressed in terms of the net calorific values (CV), unless otherwise stated. The ratio of gross CV (H_g) to net CV (H_n) heat input is approximately 1.11:1 for natural gas, 1.09:1 for propane, and 1.08:1 for butane.

NOTE 4 It is essential that persons carrying out the installation of any gas appliance be competent to do so.

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.

Standards publications

BS 476-22, *Fire tests on building materials and structures — Part 22: Methods for determination of the fire resistance of non-loadbearing elements of construction*

BS 5440-1:2008, *Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases) — Part 1: Specification for installation of gas appliances to chimneys and for maintenance of chimneys*

BS 5440-2:2009, *Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases) — Part 2: Specification for the installation and maintenance of ventilation provision for gas appliances*

BS 5482-1, *Code of practice for domestic butane- and propane-gas- burning installations — Part 1: Installations at permanent dwellings, residential park homes and commercial premises, with installation pipework sizes not exceeding DN 25 for steel and DN 28 for corrugated stainless steel or copper*

BS 5482-2, *Code of practice for domestic butane- and propane-gas-burning installations — Part 2: Installations in caravans and non-permanent dwellings*

BS 5546, *Specification for installation and maintenance of gas-fired water-heating appliances of rated input not exceeding 70 kW net*

BS 5871-3, *Specification for the installation and maintenance of gas fires, convector heaters, fire/back boilers and decorative fuel effect gas appliances — Part 3: Decorative fuel effect gas appliances of heat input not exceeding 20 kW (2nd and 3rd family gases)*