

BRITISH STANDARD

Carbon monoxide in dwellings and the combustion performance of gas-fired appliances –

Part 4: Guide for using electronic portable combustion gas analysers as part of the process of servicing and maintenance of gas-fired appliances

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BSi
British Standards

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Foreword

Publishing information

This part of BS 7967 was published by BSI and came into effect on 29 June 2007. It was prepared by Technical Committee GSE/30, *Gas installations (1st, 2nd and 3rd family gases)*. A list of organizations represented on this committee can be obtained on request to its secretary.

Relationship with other publications

The standard is issued in four parts:

- *Part 1: Guide for identifying and managing sources of fumes, smells, spillage/leakage of combustion products and carbon monoxide detector activation;*
- *Part 2: Guide for using electronic portable combustion gas analysers in the measurement of carbon monoxide and the determination of combustion performance;*
- *Part 3: Guide for responding to measurements obtained from electronic portable combustion gas analysers;*
- *Part 4: Guide for using electronic portable combustion gas analysers as part of the process of servicing and maintenance of gas-fired appliances.*

This part of BS 7967 is intended to be used in conjunction with BS 7967-2, BS 7967-3 and the gas appliance manufacturer's servicing and maintenance instructions.

Information about this document

This standard has been prepared to provide best practice guidance on the use of electronic portable combustion gas analysers, as referred to in Clause 4, as part of a servicing and/or maintenance procedure for gas appliances in dwellings. It contains guidance on the use of combustion gas analysis as a diagnostic tool to assist a gas operative before proceeding to final checks and reports that meet the relevant requirements of the Gas Safety (Installation and Use) Regulations [1]. It supplements gas appliance manufacturers' servicing requirements through a generic approach to servicing and maintenance activity and by identifying situations where combustion gas analysis cannot be deployed or is not appropriate.

It is not intended that a combustion gas analysis be used as a substitute for normal servicing and/or maintenance carried out in accordance with the gas appliance manufacturer's instructions. It is to be regarded and used as a diagnostic tool to help in the process of carrying out these activities to ensure the safe and efficient ongoing operation of the gas appliance installation.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

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.

The word “should” is used to express recommendations of this standard. The word “may” is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word “can” is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

Contractual and legal considerations

Attention is drawn to the following statutory regulations.

- a) Gas Safety (Installation and Use) Regulations 1998 [1]
- b) Gas Safety (Installation and Use) Regulations (Northern Ireland) 2004 [2]
- c) Gas Safety (Application) Order (Isle of Man) 1996 [3]
- d) Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 [4]
- e) Gas Safety (Management) Regulations 1996 [5]
- f) Gas Safety (Management) Regulations (Northern Ireland) 1997 [6]

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.

1 Scope

This part of BS 7967 gives guidance on the use of an electronic portable combustion gas analyser as a diagnostic instrument to assist a gas operative:

- a) in determining the level of servicing required for a gas-fired appliance;
- b) in confirming satisfactory combustion following servicing in accordance with manufacturer's instructions;
- c) in confirming satisfactory combustion following maintenance.

This standard is intended to ensure the safe and efficient operation, in dwellings, of:

- 1) flueless gas-fired appliances (type A gas-fired appliances), e.g. cooking appliances, space heaters.
- 2) open flued appliances (type B gas-fired appliances).
- 3) room sealed appliances (type C gas-fired appliances).

NOTE 1 Types A, B and C classifications of gas-fired appliances are described in PD CEN/TR 1749.

This standard is for use with appliances using 1st, 2nd or 3rd family gases.

This standard deals with the measurement of carbon monoxide (CO), the determination of carbon dioxide (CO₂) and their ratio in combustion products from gas-fired appliances.

NOTE 2 This standard does not cover the use of an analyser during commissioning. However, an appliance manufacturer may specify the need for a combustion test during commissioning. If this is called for, and if either due to the absence of the necessary equipment or through lack of expertise, the manufacturer's methods and figures cannot be applied, the appliance needs to be turned off, disconnected and labelled as an un-commissioned appliance until such time as either the necessary equipment and/or expertise is available.

NOTE 3 Following a landlord's gas safety check in accordance with regulation 36(3) of The Gas Safety (Installation and Use) Regulations 1998 [1], an electronic portable combustion gas analyser can also be used in accordance with this standard as a diagnostic instrument to determine the need for further work.

NOTE 4 Combustion products from gas appliances will contain nitrogen oxides (NO_x), predominantly nitrogen monoxide (nitric oxide, NO) and nitrogen dioxide (NO₂). This standard does not deal with the measurement of combustion products such as nitrogen oxides and aldehydes. Such products could be present in the air in sufficient quantities to prove an irritant and could be harmful. For guidance on the occupational health considerations associated with these combustion products, reference can be made to the following documents.

- a) *The Institute for Environment and Health's IEH assessment on indoor air quality in the home: Nitrogen dioxide, formaldehyde, volatile organic compounds, house dust mites, fungi and bacteria [7].*
- b) *The Health and Safety Executive's (HSE's) Chemical Hazard Alert Notices, CHAN 28 on nitrogen monoxide [8] and CHAN 29 on nitrogen dioxide [9]. Please note that these CHANs refer to occupational levels specifically related to the workplace situation. For further guidance refer to the HSE¹⁾.*

¹⁾ HSE Infoline, Caerphilly Business Park, Caerphilly CF83 3GG.
Tel. 0845 345 0055. www.hse.gov.uk.