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PAS 4444:2020+A2:2026

Hydrogen-fired gas appliances – Guide



UK Government

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Contents

Foreword	iii
1 Scope	1
2 Normative references	2
3 Terms, definitions, symbols and abbreviated terms	3
3.1 Terms and definitions	3
3.2 Symbols and abbreviated terms	6
4 Classification	8
4.1 Gases	8
4.2 Combustion products	10
5 Construction	11
5.1 General	11
5.2 Materials	11
5.3 Constructional requirements	12
5.4 Burners	13
6 Performance	15
6.1 Soundness of the gas circuit	15
6.2 Soundness of the combustion circuit	15
6.3 Heat inputs	16
6.4 Limiting temperatures	17
6.5 Ignition – cross lighting – flame stability	17
6.6 Nitrogen oxides	30
6.7 Combustion	31
6.8 Rational use of energy	32
7 Markings and instructions	34
7.1 Supplementary markings	34
7.2 Packaging	34
7.3 Technical instructions	35
7.4 User instructions	35
7.5 Appliance conversion risk assessment	35
Annexes	
Annex A (informative)	
Essential requirements of EU Regulation 2016/426 (“Gas Appliance Regulation”/“GAR”) [1]	36
Annex B (informative)	
European legislation	37
Annex C (informative)	
Ignition in the hydrogen supply pipe to the appliance	38
Bibliography	44

This is a preview of PAS 4444:2020+A2:2026. [Click here to purchase the full version from the ANSI store.](#)

List of figures

Figure 1 – Gas fires and cookers (enclosed and ventilated zones) 24

Figure 2 – Boilers (enclosed and ventilated zones) 24

Figure 3 – Test rig 28

Figure C.1 – Common types of burners 38

Figure C.2 – Burn back speeds 40

Figure C.3 – Flashback speeds for different nozzle shapes 41

List of tables

Table 1 – Hydrogen test gas characteristics – gas dry at 15 °C and 1 013.25 mbar 8

Table 2 – Hydrogen distributed gas 9

Table 3 – Gas supply pressure 10

Table 4 – Values for hydrogen combustion 33

Table A.1 – Essential requirements of the Gas Appliance Regulation [1] and where they are addressed in this PAS 36

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Foreword

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Presentational conventions

The guidance in this PAS is presented in Roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Additional commentary, explanation and general informative material is presented in smaller italic type.

Where words have alternative spellings, the preferred spelling of the *Shorter Oxford English Dictionary* is used (e.g. “organization” rather than “organisation”).

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1 Scope

This PAS gives guidance on the development and construction of hydrogen-fired gas appliances, which are either purpose-built to use hydrogen or are designed to be converted to use hydrogen.

A2 This PAS only covers equipment included in the Gas Appliance Regulation (GAR) [1].

NOTE 1 *If more specific standards or specifications are available these may be used. Once published, CEN TS 15502-3-3 is an example of such a standard. Other standards might be relevant to different specific appliance designs as described within Annex C.* **A2**

The PAS covers the functional specification of the appliance, including specific advice on the demonstration of safety, including reasonably foreseeable conditions to stress the appliance in excess of that which it is likely to experience in normal service. It also covers the setting of limit (upper and lower) hydrogen supply pressures and limit voltages. It discusses the possible arrangement of fittings and devices acknowledging the application to hydrogen-fired appliances.

The PAS also covers tests regarding both delayed ignition and unintended ignition of accumulated gas (which has leaked from the gas circuit) within the case of the appliance and/or its flue.

It also covers advice on manufacturer's instructions regarding installation of such appliances (including fluing) and their servicing requirements.

The PAS is intended to be used as a supplement to existing standards and generally assumes that any default performance requirements (for example, noise or pressure rating) align with those of an equivalent 2nd family gas appliance unless specifically stated otherwise.

It also includes an annex on where the requirements of the GAR [1] are addressed in the clauses of this PAS.

This PAS has been developed with reference to the product standards given as normative references but might be applicable to other similar products (see Annex B).

This PAS is not applicable to industrial or process equipment.

This PAS is for use by the manufacturers of hydrogen-fired gas appliances and manufacturers of gas appliances that are designed to be converted to use hydrogen.

The PAS is also of interest to Notified Bodies and other appliance test houses.

NOTE 2 *This PAS is intended to prepare the UK gas industry for "hydrogen ready" appliances, including appliances designed to be converted to use hydrogen.*

NOTE 3 *This PAS has been developed on the basis that currently hydrogen limit test gases do not exist and are to be the subject of a wider discussion. Accordingly, other test means have been suggested so as to stress the appliance in excess of that which it is likely to experience in normal service.*