

Industry Standard Update 011



Title: BS 5546: 2010 - Specification for installation and maintenance of gas-fired water-heating appliances of rated input not exceeding 70 kW net

Date issued: 19 July 2010

This Industry Standard Update provides an overview of the requirements to the revised Industry Standard – BS 5546: 2010 and highlights areas of significant change from the preceding and now withdrawn Standard

Introduction

In June 2010, the British Standards Institution published a new updated version of BS 5546: 2010⁽¹⁾. This new Standard replaces the previous edition (published 2000) of this gas utilisation Standard which is now withdrawn.

The new Standard came into effect on **30 June 2010**.

To allow registered businesses time to carry out internal up-date training to reflect the technical changes in the revised Standard, Gas Safe Register will inspect to the requirements of this Standard from 1 October 2010. However, this should not restrict businesses from applying the specification sooner.

BS 5546⁽¹⁾ allows manufacturers' instructions to specify a method of installation, testing, commissioning or maintenance which differs in points of detail from the standard. The reference to manufacturers' instructions is allowed only where it will result in at least an equivalent level of safety. In such circumstances, it is important that the manufacturer's instructions are followed.

Scope of BS 5546: 2010⁽¹⁾ (Clause 1)

The Standard continues to cover the requirements for the selection, installation, inspection, and commissioning of gas-fired water-heating appliances (both condensing and non-condensing) burning 1st, 2nd and 3rd family gases and the Scope has now been expanded to cover both maintenance and servicing requirements.

The Standard does not cover the detailed design and installation of the whole hot water distribution system, which were originally specified in BS 5549⁽²⁾ (which is now withdrawn) and is now specified in BS EN 12828⁽³⁾, BS EN 12831⁽⁴⁾ and BS EN 14336⁽⁵⁾. Each 'EN' Standard contains a National Annex which provides guidance on their use in the United Kingdom (UK).

Note 1: *Some parts of BS 5546 may also be appropriate for the installation of pool and spa water-heating appliances. The manufacturer's instructions may advise which parts are not appropriate.*

Competence (Clause 4)

A new clause has been added which covers the requirements for competence in all geographical areas covered by Gas Safe Register.

Selection of equipment and pre-installation (Clause 5)

The Commentary and Recommendations on clause 5.1 highlight some of the different types of building structure that may be encountered (e.g. timber and light steel framed and multi-dwelling buildings) and direct the reader to relevant Industry Standards such as IGE/UP/7⁽⁶⁾ and IGE/G/5⁽⁷⁾ for further guidance.

The concern about running chimney/flue systems in voids is highlighted and refers the reader to Gas Safe Register Technical Bulletin (TB) TB 008⁽⁸⁾ for further guidance. TB 008⁽⁸⁾ can be viewed at: <https://engineers.gassaferegister.co.uk> - login and visit the Technical Information area.

The reader is also reminded of the importance of consulting with official bodies, such as the local water supply company regarding the proposed installation and obtaining consent to proceed with the installation. Additionally, the following official bodies might need to be consulted:

- the local authority - building regulations and planning application requirements;
- the fire authority, to establish compliance with relevant fire precautionary requirements;
- the Health and Safety Executive (HSE), to establish health and safety requirements compliance in commercial premises.

Installation and location of water-heating appliances (general) (Clause 6)

The section covering the installation of water heating appliances in compartments highlights that where a compartment houses an open-flued water-heating appliance, neither the door nor the air vents can communicate with a bedroom or bed-sitting room or a room containing a bath or shower. This supports the current requirements of BS 5440-2⁽⁹⁾ and is covered in more detail in the Gas Safe Register Industry Standards Update (ISU) ISU 009⁽⁹⁾, which can be viewed at: <https://engineers.gassaferegister.co.uk> - login and visit the Technical Information area

For roof space installations, guidance has been provided on the installation of chimney/flue systems which are connected to existing brick-built chimney systems, which supports information provided in BS 5440-1⁽¹⁾.

New information has been added that provides guidance on the installation of appliances in external locations and advises that manufacturer's instructions are consulted for other locations which are not covered by BS 5546⁽¹⁾.

Gas supplies and pipework (Clause 6.5)

This section which covers for all gas types, has been expanded to provide further guidance on the requirements of the gas supply generally both for upstream (gas services/service pipework) and downstream (the internal gas installation). The importance of both adequate pipe sizing feeding the appliance and gas metering requirements are also covered.

Boiler installations (Clause 6.13)

The section which covers the provision of 'make-up' water to the primary circuit of a closed (unvented) system (6.13.3) has been expanded to reflect current requirements in relation to the correct type of fittings to use and provides useful visual examples by way of line diagrams.

Thermal insulation (Clause 6.15.7)

Additional guidance is given on the need for the insulation of water storage vessels and pipework in order to meet the requirements of current building legislation.

Prevention of scalding (Clause 6.17)

Guidance is given on the need to limit the temperature of hot water to 60°C.

Installation and location of water-heating appliances (condensing) (Clause 7)

A new section has been included which brings together all the current requirements for the installation of condensing appliances and reminds the reader of the need to comply with current building legislation requirements.

Commissioning (Clause 8.2)

The importance of correctly commissioning the appliance/installation is stressed especially in relation to the fuel – gas. Particular guidance on the requirement to undertake the safety checks required by the Gas Safety (Installation and Use) Regulations (GSIUR) (reg 26(9)) is included. Where it is not possible to measure the gas rate (no meter) or operating pressure at the appliance, guidance is given on the use of a suitably calibrated electronic portable combustion gas analyser to measure the combustion performance of the appliance. Reference is made to the Gas Safe Register Technical Bulletin (TB) TB 021⁽¹⁰⁾ which covers this activity. TB 021⁽¹⁰⁾ can be viewed at: <https://engineers.gassaferegister.co.uk> - login and visit the Technical Information area.

Advice to the user (Clause 8.3)

The importance of manufacturer's instructions is stressed and the need to leave them with the consumer. Also the fitting of an audible carbon monoxide alarm to BS EN 50291⁽¹¹⁾ to give reassurance to the consumer is discussed.

Service and maintenance (Clause 8.4)

The importance of both maintenance and servicing is stressed. Again particular guidance on the requirement to undertake the safety checks required by the GSIUR (reg 26(9)) is included as described previously for **Commissioning**.

Summary

As previously stated, this Industry Standards Update is only a brief overview of the information contained in the fully revised Standard. Registered businesses should be aware that they have a responsibility to ensure that they are fully apprised of all of the requirements of the whole published Standard and their practical application.

Bibliography

- (1) *BS 5546: 2010 - Specification for installation and maintenance of gas-fired water-heating appliances of rated input not exceeding 70 kW net*
- (2) *BS 5449:1990 - Specification for forced circulation hot water central heating systems for domestic premises*
- (3) *BS EN 12828:2003 - Heating systems in buildings. Design for water-based heating systems*
- (4) *BS EN 12831:2003 - Heating systems in buildings. Method for calculation of the design heat load*
- (5) *BS EN 14336: 2004 - Heating systems in buildings — Installation and commissioning of water based heating systems*
- (6) *IGE/UP/7 Gas installations in timber framed and light steel framed buildings.*
- (7) *IGE/G/5 Gas in flats and other multi-dwelling buildings*
- (8) *TB 008 - Room-sealed fanned draught flue systems concealed within voids*
- (9) *ISU 009 - BS 5440-2: 2009 - Specification for the installation and maintenance of ventilation provision for gas appliances*
- (10) *TB 021- The Gas Safety (Installation and Use) Regulations 1998 - Certificate of Exemption No. 1 of 2008*
- (11) *BS EN 50291: 2001 Electrical apparatus for the detection of carbon monoxide in domestic premises – Test methods and Performance requirements*

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