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Plinski vložki za gretje več prostorov

Gas-fired insets for heating more than one room

Heizeinsätze für gasförmige Brennstoffe zur Mehrraumbeheizung

Foyers utilisant les combustibles gazeux pour le chauffage de plusieurs pieces

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EUROPEAN STANDARD

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English Version

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Foyers utilisant les combustibles gazeux pour le chauffage de plusieurs pièces

Heizeinsätze für gasförmige Brennstoffe zur Mehrraumbeheizung

This European Standard was approved by CEN on 25 November 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14438:2006) has been prepared by Technical Committee CEN/TC 62 “Independent gas-fired space heaters”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard specifies the requirements and test methods for the construction, safety, marking and rational use of energy of gas-fired insets for heating more than one room that are intended to be built into a casing made from brickwork or similar material.

This European Standard is intended to be used in conjunction with EN 613:2000.

This European Standard is applicable to type B_{11BS} insets burning gas:

— that incorporate an atmospheric burner;

— that are installed directly to an open flue or to a device to evacuate the products of combustion;

— that have a nominal heat input not exceeding 20 kW (based on the net calorific value).

In addition, this European Standard is also applicable to insets for heating more than one room which have a live fuel effect.

This European Standard is not applicable to:

— open fronted appliances as specified in EN 13278;

— decorative fuel effect appliances as specified in EN 509;

— convection heating appliances as specified in EN 613;

— catalytic combustion appliances;

— appliances in which the supply of combustion air and/or evacuation of products of combustion is achieved by mechanical means as specified in EN 1266;

— warm air heaters (which are subject of CEN/TC 180).

This European Standard is only applicable to insets which are intended to be type tested.

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.

EN 125, *Flame supervision devices for gas-burning appliances — Thermo-electric flame supervision devices*

EN 298, *Automatic gas burner control systems for gas burners and gas burning appliances with or without fans*

EN 613:2000, *Independent gas-fired convection heaters*

EN 50165, *Electrical equipment of non-electric heating appliances for household and similar purposes — Safety requirements*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 613:2000 and the following apply.

3.1
heating inset
built-in convection heater, which is designed to heat more than one room (see Figure 1)

3.2
warm air chamber
chamber in which the heating inset is installed

4 Classification of appliances

Clause 4 of EN 613:2000 applies.

5 Constructional requirements

The constructional requirements given in Clause 5 of EN 613:2000 apply with the following modifications:

5.1 General

5.1.6.3 Built-in insets

Heating insets shall be delivered fully assembled for installation.

5.1.7 Supply of combustion air and evacuation of combustion products

5.1.7.1 General

The inset shall be of the type B_{11BS}. It shall include the whole of the combustion circuit, from the entry of the combustion air to the inset to the combustion products outlet of the inset.

5.1.7.2 Supply of combustion air

Combustion air inlets shall have fixed openings and shall be designed such that the requirements concerning combustion and flame stability are met.

5.1.7.3 Draught diverter

Heating insets shall have a draught diverter, which is integral part of the inset.

The draught diverter shall be constructed such that in case of spillage the combustion gases shall go directly into the room and not into the warm air chamber.

The openings of the draught diverter shall not be adjustable.

5.1.8 Electrical equipment

The inset shall be so designed and constructed as to obviate hazards of an electrical origin. The inset shall comply with the requirements of EN 50165 which cover such hazards.

If the inset is fitted with electronic components or electronic systems providing a safety function, these shall comply with the relevant requirements of EN 298 with regard to electromagnetic compatibility immunity levels.

If the manufacturer specifies the nature of the electrical protection of the inset on the data plate, this specification shall comply with EN 60529 to give the degree of personal protection against contact with dangerous electrical components.

5.2.5 Flame supervision systems

5.2.5.1 General

An inset shall have a flame supervision device. It shall control the gas supply to the main burner and to any ignition burner, if fitted.

A flame supervision device shall be securely located in relation to every component with which it is designed to operate.

In the event of failure of the means of sensing, the inset shall be safe.

5.2.5.2 Insets with thermoelectric safety devices

Heat sensitive flame supervision devices of the thermoelectric type shall comply with EN 125.

5.2.5.3 Insets with automatic burner systems

If an inset is fitted with an automatic burner control system, it shall comply with EN 298.

The manufacturer shall specify the safety time (see 6.10.2.2 of EN 613:2000). For insets above 10 kW, the safety time shall not be more than 5 s, and for those up to and including 10 kW, the safety time shall not be more than 10 s.

NOTE The safety times have been limited because this inset is installed within a secondary enclosure.

Upon flame failure during the running condition the flame supervision device shall cause non-volatile lock-out, except in the case of insets with direct ignition of the main burner, in which case:

a) spark restoration within 1 s is allowable, or

b) a single restart attempt is allowed within 10 s.

In the event that re-ignition is unsuccessful during either of these periods non-volatile lock-out shall occur.

The operation of push buttons, switches etc., incorrectly or out of sequence shall not adversely affect the safety of an automatic burner control system.

5.2.7 Automatic burner control system

This subclause is covered by the final paragraph of 5.2.5.3 above.

5.2.10 Manually operated devices

This subclause is covered by 5.2.5.3 above.

5.4 Flame supervision systems

This subclause is covered by 5.2.5 above.

6 Operational requirements

The operational requirements given in Clause 6 of EN 613:2000 apply with the following modifications:

6.4.3 Temperature of floor

The inset manufacturer shall provide in his installation instructions the necessary information for either insulating the walls and/or floors or indicating the required clearance distances to ensure that the temperature of any adjacent walls and/or floors constructed of non-combustible or combustible materials comply with the following requirements.

6.4.3.1 Insets to be installed on/against non-combustible surfaces

For insets intended to be installed in accordance with the inset manufacturer's installation instructions on, or against, non-combustible surfaces, when tested as described in 7.4.3, the temperature at any user touchable point of the floor on which an inset is to be placed shall not exceed the ambient temperature by more than 80 K.

6.4.3.2 Insets to be installed on/against combustible surfaces

For insets intended to be installed in accordance with the inset manufacturer's installation instructions on, or against, combustible surfaces, when tested as described in 7.4.3, the temperature at any point of any floor on which an inset is to be placed, shall not exceed the ambient temperature by more than 60 K.

6.9 Spillage monitoring system

Only 6.9.2 of EN 613:2000 applies.

6.11 Efficiency

When the inset is tested as described in 7.11, the minimum net efficiency obtained (see 7.11.2 of EN 613:2000) with the inset operating at its nominal heat input shall be 89 %.

7 Test methods

The test methods given in Clause 7 of EN 613:2000 apply with the following modifications:

7.1.5.3 Test installation

The appliance shall be installed in accordance with the manufacturer's instructions without installing it into the warm air chamber (the requirements of 8.2.2.2 have not to be taken into account).

7.4 Temperature of various parts of the inset

For the tests according to 7.4.1 to 7.4.3 the inset is installed according to the manufacturer's instructions onto a test rig including all convection air ducts; the heat-resistant casing is replaced by a suitable heat insulation (see Figures 2 to 6). If the manufacturer requires a certain heat insulation or safety distances to combustible parts of floors or walls, these specifications shall be respected.

The test rig consists of a plywood board with a thermal conductivity of 0,15 W/m·K and their internal surfaces coated with matt black paint (see Figures 2 to 6). Thermocouples are incorporated into each panel (sides and hearth) at the centre of squares of side 100 mm (see Figure 5); these thermocouples are situated in the test panels according to Figure 6.

The distance between the back and side surfaces and test panels are the minimum distances specified by the manufacturer or, where appropriate, that distance created by fixing to the wall. The side panel is placed at the side of the inset where the temperatures are the highest.

All measurements are taken when the difference between the surface temperature and the ambient temperature is constant.

7.4.3 Temperature of floor and walls

For an inset which is intended to be installed on a combustible surface, the manufacturer should indicate in the installation instructions the nature of the effective protection to be applied between the inset and the floor, shelf or walls. This protection shall be supplied to the test laboratory by the manufacturer.

The inset is adjusted to nominal heat input according to 7.1.3.2 of EN 613:2000 using a reference gas and is operated until thermal equilibrium is achieved.

The test is repeated with the inset fan, if any, inoperative.

7.9 Spillage monitoring system

The test is carried out according to 7.9.1 and 7.9.3 of EN 613:2000.

7.11 Efficiency

The test is carried out according to 7.11 of EN 613:2000 with the following modification:

The test rig as described in 7.4 is used.

For type B_{11BS} insets a sample of the products of combustion and the measurement of combustion gases temperature is taken 2*D* downstream the flue socket (see Figure 7) at a pressure of 10 Pa with a probe according to Figure 8.

8 Marking and instructions

8.1 Marking

The marking requirements given in 8.1 of EN 613:2000 apply.

8.2 Instructions

The instruction requirements given in 8.2 of EN 613:2000 apply with the following modifications:

8.2.2 Technical instructions for installation and adjustment

8.2.2.1 Issues concerning installation and adjustment of the inset in particular

The following statement shall be included:

"Before installation, ensure that the local distribution conditions (identification of the type of gas and pressure) and the adjustment of the inset are compatible".

In addition to the information specified in 8.1.1 of EN 613:2000, the technical instructions may include information indicating, where appropriate, that the inset has been certified for use in countries other than those stated on the inset[1)]. If such information is given, the instructions shall include a warning that modification of the inset and its method of installation are essential to use the inset safely and correctly in any of these additional countries. This warning shall be repeated in the official language(s) of each of these countries. The instructions shall indicate how to obtain the information, instructions and parts necessary for safe and correct use in the countries concerned.

The technical instructions for installation and adjustment, intended for the installer, shall be available with the inset and shall cover the following:

— the method of connection and the installation regulations in the country where the inset is to be installed (if such regulations exist); also the flue and ventilation dimensions shall be given for the purposes of installation in those countries where there are no appropriate regulations;

— the fixing of the inset;

— the gas rate in m^3/h in relation to the gas used;

— for an inset with an adjustable pressure governor, the setting pressure as measured upstream of the burner but downstream of any adjuster, in relation to the gas family or group used;

— a declaration by the manufacturer of area(s) to be considered as a working surface;

— minimum distances between the inset and any walls and/or shelves, if applicable;

— any necessary precautions to be taken to avoid over-heating of the floor, shelf, walls, or else a statement to use non-combustible materials for the floor, shelf or wall close to the inset.

The instructions shall provide the following:

— all information on the operations and adjustments to be carried out when converting from one gas to another, and the injector markings for each gas that may be used;

— necessary instructions for inspecting the flue;

— description of the performance and installation characteristics particular to the inset, and information necessary for commissioning and maintenance.

[1)] Indirect countries of destination.