Gaas-keskküttekatlad. B11 ja B11BS tüüpi katlad, millel on atmosfääriõhul töötavad põletid nominaalsoojussisendiga mitte üle 70 kW

Gas-fired central heating boilers - Type B11 and B11BS boilers, fitted with atmospheric burners of nominal heat input not exceeding 70 kW

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 297:1999 sisaldab Euroopa standardi EN 297:1994+A2,3,5:1998+AC:2006 ingliskeelset teksti.	This Estonian standard EVS-EN 297:1999 consists of the English text of the European standard EN 297:1994+A2,3,5:1998+AC:2006.
Standard on kinnitatud Eesti Standardikeskuse 23.11.1999 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 23.11.1999 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 297

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Descriptors: Heaters, central heating, boilers, gas appliances, burners, heat balance, equipment specifications, performance evaluation, safety, tests, verification, marking, name plate

English version

Gas-fired central heating boilers - Type B11 and B11BS boilers fitted with atmospheric burners of nominal heat input not exceeding 70 kW

Chaudières de chauffage central utilisant les combustibles gazeux - Chaudières des types B11 et B11BS equipées de brûleurs atmosphériques dont le débit calorifique nominal est inférieur ou égal à 70 kW

Heizkessel für gasförmige Brennstoffe - Heizkessel der Typ B11 und B11BS mit atmosphärischen Brennern mit einer Nennwärmebelastung kleiner als oder gleich 70 kW

This European Standard was approved by CEN on 1994-05-18. 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.

The European Standards exist 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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Contents

Foreword

The European standard EN 297 has been prepared by the Technical Committee CEN/TC 109 "Gas-fired central heating boilers", the Secretariat of which is hold by the IBN.

It was established to deal with aspects related to :

- safety;
- rational use of energy;
- fitness for purpose.

Other types of boilers, and those of higher nominal heat input excluded from this standard, are dealt with in separate standards.

Amendment 1, dealing with combustion products discharge safety devices, has been included in this standard.

Other amendments are being prepared and will complete EN 297 eventually.

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

This standard covers only type testing.

Matters related to quality assurance systems, tests during production and to certificates of conformity to auxiliary devices are not dealt with in this standard.

If the manufacturer indicates that the boiler has been tested in accordance with EN 297, the boiler must comply completely with the requirements of this standard.

Type B_{11} boilers must be fitted with a combustion products discharge safety device in order to meet the Essential Requirement of clause 3.4.3 of the Directive 90/396/EEC. In this standard these boilers are designated as type B_{11BS}.

However, boilers intended to be installed :

- either in the open air
- or in a room separated from living rooms and provided with appropriate ventilation directly to the outside,

need not to carry such a device, but in this case, appropriate warnings on the packaging and in the instructions must clearly indicate the limit on the use of this type of boiler. In this standard these boilers are designated as type B_{11}.

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 December 1995, and conflicting national standards shall be withdrawn at the latest by December 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 General

1.1 Field of application

This European standard specifies the requirements and test methods for the construction, safety, fitness for purpose, rational use of energy, classification and marking of gas-fired central heating boilers, hereafter referred to as "boilers".

This standard applies to type B_{11} and B_{11BS} boilers :

- fitted with atmospheric burners;
- that use gases corresponding to the three gas families and to the pressures stated in 4.1.4;
- that have a nominal heat input not exceeding 70 kW (on net calorific value);
- where the temperature of the water does not exceed 95 °C during normal operation;
- where the maximum water-side operating pressure does not exceed 6 bar.

This standard does not contain all the necessary requirements for :

boilers :

- intended to be installed in the open;
- having multiple heating units with a single draught diverter;
- with fan-assisted combustion;
- of the condensing type;
- intended to be connected to a common flue having mechanical extraction;
- fitted with manual or automatic means of adjusting the air supply and/or adjusting the evacuation of the combustion products;
- of the combination type (central heating and domestic hot water production);

appliances :

- combining the functions of an independent space heater and a hot water generator for central heating.

This standard only covers type testing.

1.2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 88	Pressure governors for gas appliances for inlet pressures up to 200 mbar.
EN 125	Flame supervision devices for gas burning appliances - thermoelectric flame supervision devices.
EN 126	Multifunctional controls for gas burning appliances.
EN 161	Automatic shut-off valves for gas burners and gas appliances.
EN 278	Rubber materials for diaphragms in domestic appliances using combustible gases up to 200 mbar.
EN 279	Homogeneous rubber materials for dynamic seals in domestic appliances using combustible gases up to 200 mbar.
EN 291	Rubber seals - Static seals in domestic appliances for combustible gas up to 200 mbar - Specification for material.
EN 298	Automatic gas burner control systems for gas burners and gas-burning appliances with or without fans.
EN 437	Test gases - Test pressures - Appliance categories
prEN 1057	Copper and copper alloys - Seamless, round copper tubes for water and gas in sanitary and heating applications.
EN 10021	General technical delivery requirements for steel and iron and steel products.
EN 10029	Hot rolled steel plate 3mm thick or above - Tolerances on dimensions, shape and mass.
EN 24063	Welding, brazing, soldering and braze welding of metals - Nomenclature of processes and reference numbers for symbolic representation on drawings (ISO 4063 : 1990).
EN 60335-1	Safety of household and similar electrical appliances. Part 1 : General requirements.
EN 60529	Degrees of protection provided by enclosures (IP code).
EN 60742	Isolating transformers and safety isolating transformers - Requirements.
ISO 7-1	Pipe threads where pressure-tight joints are made on the threads. Part 1- Designation, dimensions and tolerances.
ISO 185	Grey cast iron - Classification.
ISO 228-1	Pipe threads where pressure-tight joints are not made on the threads, Part 1- Designation, dimensions and tolerances.
ISO 262	ISO general purpose metric screw threads - Selected sizes for screws, bolts and nuts.

ISO 301	Zinc alloy ingots intended for casting.
ISO 857	Welding, brazing and soldering processes - Vocabulary Bilingual edition .
ISO 2553	Welded, brazed and soldered joints - Symbolic representation on drawings.
ISO 7005	Metallic flanges.
IEC-730-2-9	Automatic electrical controls for household and similar use. Part 2 : Particular requirements for electrical controls for household appliances.

1.3 Definitions

For the purposes of this standard the following definitions apply.

1.3.1 reference conditions : Dry gas at a temperature of 15 °C, and at an absolute pressure of 1013,25 mbar.

1.3.2 Combustible gases

1.3.2.1 Reference gas - limit gases

In each gas family or group, test gases are defined :

- one or several "reference gas(es)" : gas(es) with which the boilers operate in nominal conditions, when they are supplied at the corresponding normal pressure;

- "limit gases" : gases representative of the extreme variations in the characteristics of the gases capable of being used.

1.3.2.2 calorific value : The quantity of heat produced by the combustion at a constant pressure of 1013,25 mbar of unit volume or mass of gas, the constituents of the combustible mixture being brought to 15 °C and 1013,25 mbar, the combustion products being brought to the same conditions.

Two types of calorific value are identified :

- gross calorific value : water produced by combustion is taken to be condensed

  Symbol : H_s

- net calorific value : water produced by combustion is taken to be in the vapour state

  Symbol : H_i

Units :

- either megajoules per cubic meter of dry gas brought to reference conditions (MJ/m^3);

- or megajoules per kilogram of dry gas (MJ/kg).