

# SLOVENSKI STANDARD

## SIST EN 15502-2-2:2014

01-oktober-2014

### Nadomešča:

SIST EN 297:1997

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SIST EN 297:1997/A3:1997

SIST EN 297:1997/A4:2005

SIST EN 297:1997/A5:1999

SIST EN 297:1997/A6:2004

SIST EN 625:1997

SIST EN 677:1999

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**Plinski kotli za centralno gretje - 2-2. del: Posebne zahteve za tip kotlov B1 z imensko močjo do vključno 70 kW** SIST EN 15502-2-2:2014

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Gas-fired central heating boilers - Part 2-2: Specific standard for type B1 appliances of a nominal heat input not exceeding 70 kW

Heizkessel für gasförmige Brennstoffe - Teil 2-2: Heizkessel der Bauart B1 mit einer Nennwärmebelastung nicht größer als 70 kW

**Ta slovenski standard je istoveten z: EN 15502-2-2:2014**

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EUROPEAN STANDARD

EN 15502-2-2

NORME EUROPÉENNE

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Supersedes EN 15417:2006, EN 297:1994, EN 625:1995,  
EN 677:1998

English Version

## Gas-fired central heating boilers - Part 2-2: Specific standard for type B1 appliances

Chaudières de chauffage central utilisant les combustibles gazeux - Partie 2-2: Norme spécifique pour les appareils de type B1

Heizkessel für gasförmige Brennstoffe - Teil 2-2: Heizkessel der Bauart B1

This European Standard was approved by CEN on 28 May 2014.

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 CEN-CENELEC Management Centre or to any CEN member.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 15502-2-2:2014) has been prepared by Technical Committee CEN/TC 109 “Central heating boilers using gaseous fuels”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by January 2015 and conflicting national standards shall be withdrawn at the latest by July 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document will supersede EN 297:1994, EN 625:1995, EN 677:1998 and EN 15417:2006 three years after publication of this standard.

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 Annexes ZA and ZB, which are an integral part of this document.

It supports essential requirements as meant in Article 3 of EU Directive 2009/142/EC, relating to appliances burning gaseous fuels and the verification methods valid for production and measurements, as meant in Article 5.2 of EU Directive 92/42/EEC, relating to the efficiency requirements for new hot water boilers fired with liquid or gaseous fuels, with an output of 4 – 400 kW.

The EN 15502 series of standards is composed of the following parts:

- a) EN 15502-1, *Gas-fired heating boilers — Part 1: General requirements and tests*;
- b) EN 15502-2-1, *Gas-fired central heating boilers — Part 2-1: Specific standard for type C appliances and type B2, B3 and B5 appliances of a nominal heat input not exceeding 1 000 kW*;
- c) EN 15502-2-2, *Gas-fired central heating boilers — Part 2-2: Specific standard for type B1 appliances* (the present document).

**NOTE** This is intended to have no additional requirements in the parts 2 for the ERP. This is intended to include the requirements for this directive into the generic standard (EN 15502–1) covering all appliances.

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

**EN 15502-2-2:2014 (E)****Introduction**

A gas-fired heating boiler is an appliance using gaseous fuel designed to heat water with the purpose of providing heat to a building (or portion of a building) from one point to multiple rooms using heat emitters such as radiators and convectors to transmit the heat from the water to the room. The boiler may also be used to provide domestic hot water via an instantaneous heat exchanger or an indirect hot water storage tank.

The basic function of gas-fired heating boiler is to generate heat by direct heat transfer in a heat exchanger, from the combustion gases to the water.

The boiler may include in one design more than one function. It may include for example:

- a) a sanitary hot water function;
- b) a function to dispose the combustion products to the outside of the building.

The boiler design may be supplied to the Market in more than one part. If the boiler is supplied to the Market in multiple parts, the boiler is the assembly of various parts according to the technical instructions.

Boilers may be designed to be connected to specific parts of a building. Especially connection to a chimney may be relevant.

This European standard was established to deal with aspects related to:

- c) safety;
- d) rational use of energy;
- e) fitness for purpose.

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

Relation between this standard and EN 15502-1:

This European Standard will be used in conjunction with EN 15502-1:2012 and follows the numbering structure of EN 15502-1:2012.

This European standard refers to clauses of EN 15502-1:2012 or adapts clauses by stating in the corresponding clause:

- "Shall be according to EN 15502-1:2012, [clause number] with the following modification";
- "Shall be according to EN 15502-1:2012, [clause number] with the following addition".
- "EN 15502-1:2012, [clause number] is replaced by the following";
- "EN 15502-1:2012, [clause number] is not applicable".

This European Standard adds clauses or subclauses to the structure of EN 15502-1:2012 which are particular to this standard. It should be noted that these clauses and subclauses are not indicated as an addition. Clauses, subclauses and annexes which are additional to those in EN 15502-1:2012 are numbered starting from 101, respectively are designated as Annex AA, BB, CC, etc.



Annex V lists for which types existing standards are replaced by this standard in combination with EN 15502-1.

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**EN 15502-2-2:2014 (E)****1 Scope**

This European Standard specifies, the requirements and test methods concerning, in particular the construction, safety, fitness for purpose, and rational use of energy, as well as the classification and marking of gas-fired central heating boilers that are fitted with atmospheric burners, fan assisted atmospheric burners and are hereafter referred to as “boilers”.

Where the word boiler is used, this is to be read as the boiler including its connecting ducts, ducts and terminals, if any.

This European Standard covers gas-fired central heating boilers type B<sub>11</sub>, B<sub>11BS</sub>, B<sub>12</sub>, B<sub>12BS</sub>, B<sub>13</sub>, B<sub>13BS</sub> according to the classification in CEN/TR 1749:2009:

- a) that have a nominal heat input (on the basis of net calorific value) not exceeding 70 kW;
- b) that use one or more combustible gases of the three gas families at the pressures stated in EN 437;
- c) where the temperature of the heat transfer fluid does not exceed 105 °C during normal operation;
- d) where the maximum operating pressure in the water circuit does not exceed 6 bar;
- e) which are declared in the technical instructions to be either a “low temperature boiler” or a “standard boiler”. If no declaration is given the boiler is to be considered a “standard boiler”;
- f) which are intended to be installed either indoors or in a partially protected place;
- g) which are either not intended to produce hot water, or are intended to produce hot water either by the instantaneous or storage principle, the whole being marketed as a single unit.
- h) which are designed for either sealed water systems or for open water systems.

This European Standard is to be used in conjunction with the General Requirements Standard EN 15502-1.

For applications within the scope of the PED further requirements may be necessary (e.g. situations where the maximum allowable temperature exceeds 110 °C, or where volume times maximum allowable pressure is over 50 bar x litres).

This standard provides requirements for boilers with known constructions. For boilers with any alternative constructions, which might not fully be covered by this standard, the risk associated with this alternative construction shall be assessed.

An example of an assessment methodology, based upon risk assessment and which covers the essential requirements of the Gas Appliance Directive, is given in Clause 11.

This standard does not cover all the requirements for:

- i) appliances that are intended to be connected to gas grids where the quality of the distributed gas is likely to vary to a large extent over the lifetime of the appliance (see Annex DD of EN 15502-2-1:2012);
- j) appliances using flue dampers;
- k) appliances that have a nominal heat input (on the basis of net calorific value) exceeding 70 kW;
- l) appliances of the types A, B<sub>14</sub>, B<sub>2</sub>, B<sub>3</sub>, B<sub>4</sub>, B<sub>5</sub> and C;
- m) appliances intended to be connected to a (common) flue having mechanical extraction;

- n) appliances with gas/air ratio control;
- o) modular boilers;
- p) boilers which can give rise to condensation under certain circumstances;
- q) boilers intended to be installed in a room with a foreseeable negative pressure relative to the pressure in the flue system.

NOTE Negative pressure relative to the pressure in the flue system can for example be caused by mechanical or thermal ventilation in airtight buildings.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 437:2003+A1:2009, *Test gases — Test pressures — Appliance categories*

EN 14459:2007, *Control functions in electronic systems for gas burners and gas burning appliances — Methods for classification and assessment*

EN 15502-1:2012, *Gas-fired heating boilers — Part 1: General requirements and tests*

EN 60730-2-9, *Automatic electrical controls for household and similar use — Part 2-9: Particular requirements for temperature sensing controls (IEC 60730-2-9)*

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## 3 Terms, definitions and symbols

### 3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15502-1:2012, EN 437:2003+A1:2009 and the following apply.

NOTE They are numbered in accordance with the specific groups they belong to.

#### 3.1.3.101 draught diverter

device, placed in the combustion products circuit of a boiler, that is intended to maintain the quality of combustion within certain limits and to keep the combustion stable under certain conditions of updraught and downdraught

#### 3.1.4.101 combustion products discharge safety device

device that at least causes safety shutdown of the main burner when there is an unacceptable spillage of combustion products at the draught diverter

#### 3.1.12.101 minimum adjustable heat input

$Q_{min,a}$   
minimum value to which the nominal heat input can be adjusted according to the technical instructions for boilers fitted with a range-rating device

Note 1 to entry: Unit: kilowatt (kW).

**EN 15502-2-2:2014 (E)****3.1.12.102****minimum controlled heat input** $Q_{min,c}$ 

minimum value of the heat input which is allowed by the control system for modulating boilers

Note 1 to entry: Unit: kilowatt (kW).

**3.1.12.103****minimum heat input allowed by the controls** $Q_{min}$ 

lowest value of the minimum adjustable heat input  $Q_{min,a}$  and the minimum controlled heat input  $Q_{min,c}$

Note 1 to entry: Unit: kilowatt (kW).

**3.2 Symbols**

Shall be according to EN 15502-1:2012, 3.2.

**4 Classification**

Shall be according to EN 15502-1:2012, Clause 4.

**5 Construction**

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**5.1 General**

Shall be according to EN 15502-1:2012, 5.1. [SIST EN 15502-2-2:2014  
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**5.2 Conversion to different gases**

Shall be according to EN 15502-1:2012, 5.2.

**5.3 Materials****5.3.1 General**

Shall be according to EN 15502-1:2012, 5.3.1 with the following addition:

If there is a risk of condensation in the combustion products circuit it shall comprise materials which comply with the requirements of EN 15502-1:2012, 5.4.13.1. Other materials may be used when evidence is provided of their suitability for conditions in which condensation can occur.

**5.3.2 Materials and thicknesses of walls or tubes with water side operating pressure for boilers of pressure class-3**

Shall be according to EN 15502-1:2012, 5.3.2.

**5.3.3 Domestic water connections**

Shall be according to EN 15502-1:2012, 5.3.3.

#### 5.3.4 Thermal insulation

Shall be according to EN 15502-1:2012, 5.3.4.

### 5.4 Method of construction

#### 5.4.1 Design

Shall be according to EN 15502-1:2012, 5.4.1.

#### 5.4.2 Checking the state of operation

Shall be according to EN 15502-1:2012, 5.4.2.

#### 5.4.3 Use and servicing

Shall be according to EN 15502-1:2012, 5.4.3.

#### 5.4.4 Connections to the gas and water pipes

Shall be according to EN 15502-1:2012, 5.4.4.

#### 5.4.5 Soundness

Shall be according to EN 15502-1:2012, 5.4.5.

#### 5.4.6 Supply of combustion air and evacuation of the combustion products

Shall be according to EN 15502-1:2012, 5.4.6.

#### 5.4.7 Dampers

EN 15502-1:2012, 5.4.7 is not applicable.

#### 5.4.8 Air proving for type B<sub>12</sub> and B<sub>13</sub> boilers

EN 15502-1:2012, 5.4.8 is replaced by the following: Boilers with fans shall be fitted with a system for air proving.

Before each fan start it shall be checked that there is no simulation of air flow in the absence of air flow.

The system for supervision of the combustion air rate or combustion products rate is activated directly by the flow of combustion air or combustion products. This is also valid for boilers with more than one fan speed in which the flows associated with each fan speed are monitored.

- 1) The supply of combustion air shall be checked by continuous supervision of the combustion air rate or combustion products rate.

#### 5.4.9 Gas/air ratio controls for type B<sub>12</sub> and B<sub>13</sub> boilers

EN 15502-1:2012, 5.4.9 is not applicable.

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