



SLOVENSKI STANDARD

SIST EN 483:2001

01-februar-2001

Plinski kotli za centralno ogrevanje - Tip kotlov C z imensko močjo do vključno 70 kW

Gas-fired central heating boilers - Type C boilers of nominal heat input not exceeding 70 kW

Heizkessel für gasförmige Brennstoffe - Heizkessel des Typs C mit einer Nennwärmebelastung gleich oder kleiner als 70 kW

Chaudières de chauffage central utilisant les combustibles gazeux - Chaudières des types C dont le débit calorifique nominal est inférieur ou égal à 70 kW

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

Ta slovenski standard je istoveten z: EN 483:1999

ICS:

91.140.10	Sistemi centralnega ogrevanja	Central heating systems
97.100.20	Plinski grelniki	Gas heaters

SIST EN 483:2001

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 483:2001

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 483

October 1999

ICS 91.140.10

English version

Gas-fired central heating boilers - Type C boilers of nominal heat input not exceeding 70 kW

Chaudières de chauffage central utilisant les combustibles gazeux - Chaudières des types C dont le débit calorifique nominal est inférieur ou égal à 70 kW

Heizkessel für gasförmige Brennstoffe - Heizkessel des Typs C mit einer Nennwärmebelastung gleich oder kleiner als 70 kW

This European Standard was approved by CEN on 2 August 1998.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 483:2001

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

CONTENTS

	page
Foreword	7
1. Scope	7
2. Normative references	8
3. Definitions	9
3.1 reference conditions	9
3.2 Combustible gases	10
3.2.1 Test gases	10
3.2.2 reference gas	10
3.2.3 limit gases	10
3.2.4 calorific value	10
3.2.5 relative density	10
3.2.6 Wobbe index	10
3.2.7 Gas pressures	11
3.3 Constituent parts of the boiler	11
3.3.1 Gas supply	11
3.3.2 Air supply and combustion products evacuation	13
3.3.3 Adjusting, control and safety devices	14
3.4 Operation of the boiler	16
3.4.1 Gas rates	16
3.4.2 Outputs	17
3.4.3 useful efficiency	17
3.4.4 Gas combustion	17
3.4.5 Times	18
3.4.6 spark restoration	18
3.4.7 recycling	18
3.4.8 controlled shutdown	18
3.4.9 safety shutdown	18
3.4.10 locking out	18
3.4.11 de-energised to trip principle	19
3.4.12 purge	19
3.4.13 Air proving device	19
3.4.14 gas/air ratio control	19
3.4.15 nominal voltage	19
3.4.16 living space dedicated boiler	19
3.5 Country of destination	19
3.5.1 direct country of destination	19
3.5.2 indirect country of destination	19
4. Classification of boilers	19
4.1 Gases and categories	19
4.2 Mode of air supply and evacuation of the combustion products	20
4.2.1 General	20
4.2.2 Type of installation of the boiler	20
4.2.3 Presence and position of a fan	21
4.3 Maximum water-side operating pressure	21
4.4 Expansion system	21

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 483:2001](https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001)

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

5.	Constructional requirements	21
5.1	General	21
5.2	Conversion to different gases	21
5.3	Materials and thicknesses	21
5.3.1	General	21
5.3.2	Materials and thicknesses of sheet metal walls or tubes under water pressure for boilers of pressure class 3	22
5.3.3	Thermal insulation	30
5.3.4	Control and safety devices	30
5.3.5	Separate combustion products evacuation duct	31
5.3.6	Design	31
5.4	Method of construction	32
5.4.1	Use and servicing	32
5.4.2	Connections to the gas and water pipes	32
5.4.3	Soundness	33
5.4.4	Supply of combustion air and evacuation of the combustion products	33
5.4.5	Checking the state of operation	35
5.4.6	Drainage	35
5.4.7	Operational safety in the event of failure of the auxiliary energy	35
5.5	Electrical equipment	35
5.6	Requirements for adjusting, control and safety devices	36
5.6.1	General	36
5.6.2	Adjusters and range-rating devices	36
5.6.3	Gas circuit	37
5.6.4	Gas governor	38
5.6.5	Ignition devices	38
5.6.6	Flame supervision devices	39
5.6.7	Thermostats and water temperature limiting devices	40
5.6.8	Remote control	41
5.6.9	Expansion vessel and pressure gauge	41
5.7	Burners	41
5.8	Pressure test points	41
6.	Operational requirements	41
6.1	General	41
6.2	Soundness	41
6.2.1	Soundness of the gas circuit	41
6.2.2	Soundness of the combustion circuit	42
6.2.3	Soundness of the water circuit	43
6.3	Heat inputs and heat output	43
6.3.1	The nominal heat input or the maximum and minimum heat input	43
6.3.2	Adjustment of the heat input by the downstream gas pressure	43
6.3.3	Ignition rate	43
6.3.4	Nominal output	43
6.4	Safety of operation	43
6.4.1	Limiting temperatures	43
6.4.2	Ignition - Cross lighting - Flame stability	44
6.4.3	Reduction of the gas pressure	45
6.4.4	Defective closure of the gas valve immediately upstream of the main burner	45
6.4.5	Pre-purge	45
6.4.6	Functioning of a permanent ignition burner when the fan stops during the standby time	45
6.4.7	Leakage of combustion products for type C ₇ boilers	45
6.5	Adjusting, control and safety devices	45
6.5.1	General	45

6.5.2	Control devices	46
6.5.3	Automatic valves	46
6.5.4	Ignition devices	46
6.5.5	Flame supervision device	47
6.5.6	Gas governor	48
6.5.7	Thermostats and water temperature limiting devices	49
6.5.8	Air proving device	50
6.5.9	Functioning of the fan of a type C ₄ boiler	51
6.6	Combustion	51
6.6.1	Carbon monoxide	51
6.6.2	Other pollutants	51
6.7	Useful efficiencies	52
6.7.1	Useful efficiency at the nominal heat input	52
6.7.2	Useful efficiency at part load	52
6.8	Resistance of the materials to pressure	52
6.8.1	General	52
6.8.2	Boilers of pressure class 1	52
6.8.3	Boilers of pressure class 2	52
6.8.4	Boilers of pressure class 3	52
6.9	Hydraulic resistance	52
7.	Test methods	52
7.1	General test conditions	52
7.1.1	General	52
7.1.2	Characteristics of the reference and limit gases	53
7.1.3	Installation of the boiler	58
7.1.4	Gas circuit	58
7.1.5	Conduct of the test to obtain a heat input	58
7.1.6	Water circuit	59
7.1.7	Thermal equilibrium	60
7.1.8	Electrical supply	60
7.1.9	Uncertainty of measurements	60
7.2	Soundness	60
7.2.1	Soundness of the gas circuit	60
7.2.2	Soundness of the combustion circuit	61
7.2.3	Soundness of the water circuit	63
7.3	Heat inputs and heat output	63
7.3.1	Determination of the nominal heat input or the maximum and minimum heat input	63
7.3.2	Adjustment of the heat input by the downstream pressure	64
7.3.3	Ignition rate	64
7.3.4	Nominal output	64
7.4	Safety of operation	64
7.4.1	Limiting temperatures	64
7.4.2	Ignition - Cross lighting - Flame stability	65
7.4.3	Reduction of the gas pressure	68
7.4.4	Defective closure of the gas valve immediately upstream of the main burner	68
7.4.5	Pre-purge	68
7.4.6	Functioning of a permanent ignition burner when the fan stops during the standby time	69
7.4.7	Leakage of combustion products for type C ₇ boilers	69
7.5	Adjusting, control and safety devices	69
7.5.1	General	69
7.5.2	Control devices	70
7.5.3	Automatic valves	70
7.5.4	Ignition devices	71

(standards.iteh.ai)

SIST EN 483:2001

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a5de5e49b9/sist-en-483-2001>

7.5.5	Flame supervision device	72
7.5.6	Gas governor	74
7.5.7	Thermostats and water temperature limiting devices	74
7.5.8	Air proving device	76
7.5.9	Functioning of the fan of a type C ₄ boiler	78
7.6	Combustion	78
7.6.1	Carbon monoxide	78
7.6.2	Other pollutants	81
7.7	Useful efficiencies	83
7.7.1	Useful efficiency at the nominal heat input	83
7.7.2	Useful efficiency at part load	84
7.8	Resistance of the materials to pressure	84
7.8.1	General	84
7.8.2	Boilers of pressure class 1	84
7.8.3	Boilers of pressure class 2	84
7.8.4	Boilers of pressure class 3	84
7.9	Hydraulic resistance	85
8.	Marking and instructions	85
8.1	Boiler marking	85
8.1.1	General	85
8.1.2	Data plate	85
8.1.3	Supplementary markings	86
8.1.4	Packaging	87
8.1.5	Warnings on the boiler and the packaging	87
8.1.6	Other information	88
8.2	Instructions	88
8.2.1	Technical instructions	88
8.2.2	User's instructions	90
8.2.3	Conversion instructions	90
8.2.4	Presentation	90

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 483:2001](#)

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

Annex A (informative) National situations	105
Annex B (informative) Particular national conditions	109
Annex C (informative) Classification of type C boilers	110
Annex D (informative) Composition of the gas circuit	118
Annex E (informative) Compilation of the test conditions	120
Annex F (normative) Test apparatus for type C₂ boilers	122
Annex G (informative) Practical method of calibrating the test rig to enable the heat loss D_p to be determined	123
Annex H (informative) A deviations	124
Annex J. (informative) Main symbols and abbreviations used	125
Annex K (informative) Examples for marking	126
Annex L (informative) Example of calculation of the weighting factors for a boiler with several rates following Table 17.	127
Annex M (informative) Calculation of conversions of NO_x	129
Annex N (informative) Requirements and test methods for separate air supply and combustion products evacuation ducts of type C₆ boilers	130
Annex ZA (informative)	134
Clauses of this European standard addressing essential requirements or other provisions of EU Directives.	134

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 483:2001](https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001)

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 109 "Central heating boilers using gaseous fuels", the secretariat of which is held by NNI.

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 April 2000, and conflicting national standards shall be withdrawn at the latest by April 2000.

This European Standard 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 standard.

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

It was established to deal with aspects related to:

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

Other types of boilers such as boilers of higher nominal heat input, excluded from this draft European standard, are dealt with in separate standards.

In addition, amendments to this standard are being prepared and will modify EN 483 to include requirements and test methods supporting the Boiler Efficiency Directive and to extend the scope to operational conditions in which condensation can occur.

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

To fulfil the Gas Appliance Directive this standard contains normative paragraphs specifying requirements for combustion products evacuation ducts which are part of an appliance. Constructional requirements may arise from the Construction Products Directive.

1. Scope

This 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 or premixed burners, and that are hereafter referred to as "boilers".

This European standard applies to type C₁ boilers as listed in 4.2:

- types C₁, C₃ and C₅ boilers including their combustion air supply and combustion products evacuation ducts and their terminals;
- types C₂ and C₄ boilers including their connection ducts but without the shared duct system; this shared duct system is part of the building;

1) Except for type C₆ boilers, type C boilers are marketed with ducts. Combustion products evacuation ducts for installation in areas of the building other than the room in which the boiler is installed or ducts and chimneys which are part of the building are also subject to the Construction Products Directive. National installation regulations may specify further requirements and may limit the modes of installation permitted in the territory of a CEN member state.

- type C₆ boilers without any ducts; these ducts are separately approved and marketed;
 - type C₇ boilers until the draught diverter/air-inlet but without the secondary flue;
 - type C₈ boilers with their connecting ducts but without the chimney, which is part of the building;
- and those
- that are fitted with atmospheric burners, atmospheric burners assisted by a fan for the supply of combustion air or evacuation of combustion products, or fully premixed burners;
 - that use one or more combustible gases corresponding to the three gas families and to the pressures stated in 7.1.2.4;
 - that have a nominal heat input (on net calorific value) not exceeding 70 kW;
 - 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 European standard does not contain all the requirements necessary for:

- type C₄₁, C₅₁, C₆₁, C₇₁ and C₈₁ boilers;
- boilers intended to be installed in the open;
- boilers of the condensing type;
- boilers of the combination type (central heating and production of domestic hot water).

This European standard only covers type testing.

2. Normative references

This European standard includes the provisions of other publications by undated reference. These normative references are quoted in appropriate places in the text and the publications are listed below. For the dated references, later amendments or revisions of any of these publications apply to this European standard only where they have been incorporated in it by amendment or revision. For the undated references, the latest edition of the publication to which reference is made applies.

EN 88	Pressure governors for gas appliances for inlet pressures up to 200 mbar
EN 125	Flame supervision devices for gas burning appliances thermo-electric flame supervision devices
EN 126	Multifunctional controls for gas burning appliances
EN 161	Automatic shut-off valves for gas burners and gas appliances
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
EN 549	Rubber materials for seals and diaphragms for gas appliances and gas equipment
EN 1057	Copper and copper alloys - Seamless, round copper tubes for water and gas in sanitary and heating applications
EN 1443	Chimneys – General requirements
EN 1561	Founding – Grey cast iron

prEN 1856-1	Chimneys- Performance requirements for metal chimneys - Part 1: System chimney products
prEN 1856-2	Chimneys- Performance requirements for metal chimneys - Part 2: Metal liners and connecting flue pipes products
EN 1859	Chimneys- Metal chimneys- Test methods
EN 10029	Hot rolled steel plate 3 mm thick or above - Tolerances on dimensions, shape and mass
EN 23166	Codes for the representation of names of countries (ISO 3166:1993)
EN 24063	Welding, brazing, braze-welding and soldering of metals - List of processes, for symbolic representation on drawings (ISO 4063:1990)
EN 50165	Electrical equipment of non-electric appliances for household and similar purposes – Safety requirements
EN 60335- 1:1991	Safety of household and similar electrical appliances - Part 1: General requirements (IEC 335-1:1991, modified)
EN 60529	Degrees of protection provided by enclosures (IP code) (IEC 529:1989)
EN 60730-2-9	Automatic electrical controls for household and similar use - Part 2: Particular requirements for temperature sensing controls (IEC 730-2-9:1992, modified)
EN 60742	Isolating transformers and safety isolating transformers - Requirements IEC 742:1983 + A1:1992, modified)
ISO 7-1	Pipe threads where pressure-tight joints are made on the threads - Part 1: Designation, dimensions and tolerances
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
ISO 2553	Welded brazed and soldered joints; symbolic -representation on drawings
ISO 7005-1	Metallic flanges; Part 1: Steel flanges
ISO 7005-2	Metallic flanges; Part 2: Cast iron flanges
ISO 7005-3	Metallic flanges; Part 3: Copper alloy and composite flanges

3. Definitions

For the purposes of this standard, the following definitions apply:

3.1 reference conditions

These correspond to 15 °C and 1 013,25 mbar, unless otherwise specified. [3.9 of EN 437:1993]

NOTE: 1 mbar = 10² Pa.

3.2 Combustible gases

3.2.1 Test gases

Gases intended for the verification of the operational characteristics of appliances using combustible gases. [3.2 of EN 437:1993]

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

3.2.2 reference gas

Test gases on which appliances operate under nominal conditions, when they are supplied at the corresponding normal pressure. [3.3 of EN 437:1993]

3.2.3 limit gases

Test gases representative of the extreme variations in the characteristics of the gases for which appliances have been designed. [3.4 of EN 437:1993]

3.2.4 calorific value

The quantity of heat produced by the complete combustion, at a constant pressure of 1 013,25 mbar of unit volume or mass of gas, the constituents of the combustible mixture being taken at reference conditions and the combustion products being brought to the same conditions.

A distinction is made between:

- gross calorific value in which the water produced by combustion is assumed to be condensed

Symbol: H_s

- net calorific value in which the water produced by combustion is assumed to be in the vapour state

Symbol: H_i

Unit:

- either megajoule per cubic metre (MJ/m^3) of dry gas brought to reference conditions,
- or megajoule per kilogram (MJ/kg) of dry gas.

[3.11 of EN 437:1993/A1:1997]

3.2.5 relative density

The ratio of the masses of equal volumes of dry gas and dry air under the same conditions of temperature and pressure: 15 °C and 1 013,25 mbar.

Symbol: d

[3.10 of EN 437:1993]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.2.6 Wobbe index

The ratio of the calorific value of a gas per unit volume to the square root of its relative density under the same reference conditions. The Wobbe index is said to be gross or net according to whether the calorific value used is the gross or net calorific value.

Symbol: gross Wobbe index: W_s ;
net Wobbe index: W_i

Unit:

- either megajoule per cubic meter (MJ/m^3) of dry gas at the reference conditions,
- or megajoule per kilogram (MJ/kg) of dry gas.

[3.12 of EN 437:1993/A1:1997]

3.2.7 Gas pressures

3.2.7.1 General

All the pressures are static pressures of the moving gas, relative to the atmospheric pressure, measured at right angles to the direction of flow of the gas.

Symbol: p

Unit: millibar (mbar).

3.2.7.2 test pressure

Gas pressures used to verify the operational characteristics of appliances using combustible gases. They consist of normal and limit pressures.

Unit: millibar (mbar).

[3.5 of EN 437:1993]

3.2.7.3 normal pressure

Pressure under which the appliances operate in nominal conditions when they are supplied with the corresponding reference gas.

Symbol: p_n

[3.6 of EN 437:1993]

3.2.7.4 limit pressures

Pressures representative of the extreme variations in the appliance supply conditions.

Symbol: maximum pressure: p_{\max}

minimum pressure: p_{\min}

[3.7 of EN 437:1993]

3.2.7.5 pressure couple

Combination of two distinct gas distribution pressures applied by reason of the significant difference existing between the Wobbe indices within a single gas family or group in which:

- the higher pressure corresponds only to gases of low Wobbe index;
- the lower pressure corresponds to gases of high Wobbe index.

[3.8 of EN 437:1993]

3.3 Constituent parts of the boiler

3.3.1 Gas supply

3.3.1.1 gas inlet connection

The part of the boiler intended to be connected to the gas supply.

3.3.1.2 gas circuit

An assembly of parts of the boiler that carry or contain the combustible gas between the boiler gas inlet connection and the point at which air is admitted.

3.3.1.3 restrictor

A device, which is placed in the gas circuit so as to create a pressure drop and thus bring the gas pressure at the burner to a predetermined value for a given supply pressure and a given rate.

3.3.1.4 injector

A component that admits gas into the burner.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 483:2001
<https://standards.iteh.ai/catalog/standards/sist/aabc-445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

3.3.1.5 gas rate adjuster

A component allowing the gas rate of the burner to be brought to a predetermined value according to the supply conditions.

The action of operating this device is called “adjustment of the gas rate”.

3.3.1.6 range-rating device

A component on the boiler intended to be used by the installer to adjust the nominal heat input of the boiler within the range of maximum and minimum heat inputs stated by the manufacturer, to suit the actual heat requirements of the installation.

3.3.1.7 primary aeration adjuster

A device enabling the primary aeration of a burner to be set to the desired value according to the supply conditions.

3.3.1.8 sealing an adjuster or control device

Arrangements made to make evident any attempt to change its adjustment (e.g. breakage of a device or a sealing material).

A sealed adjuster or control device is considered to be non-existent.

3.3.1.9 putting an adjuster or a control device out of service

Action intended to put an adjuster or control (rate, pressure, etc..) out of service.

3.3.1.10 Burners

3.3.1.10.1 main burner

A burner that is intended to assure the thermal function of the boiler and is generally called “the burner”.

3.3.1.10.2 premixed burner

A burner in which the gas and a quantity of air at least equal to that theoretically necessary for complete combustion are mixed before the flame ports.

3.3.1.10.3 ignition device

3.3.1.10.3.1 General

Any means (flame, electrical ignition device or other device) used to ignite the gas admitted to the ignition burner or the main burner.

3.3.1.10.3.2 manual ignition device

A device by means of which the ignition burner is ignited following manual intervention.

3.3.1.10.3.3 automatic ignition device

An automatic device which ignites the ignition burner or the main burner directly.

3.3.1.10.4 ignition burner

A burner intended to ignite a main burner.

[SIST EN 483:2001](https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001)

<https://standards.iteh.ai/catalog/standards/sist/aafbc445-ce0d-4a9b-bcac-08a3de5e49b9/sist-en-483-2001>

Those recognised are respectively:

a) Permanent ignition burner:

An ignition burner that operates continuously throughout the whole period that the boiler is in use;

b) Intermittent ignition burner:

An ignition burner that is ignited before and extinguished at the same time as the main burner;

c) Alternating ignition burner:

An ignition burner that is extinguished as soon as ignition of the main burner is effected. It re-ignites at the main burner flame just before the latter goes out;

d) Interrupted ignition burner

An ignition burner that operates only during the ignition sequence.

3.3.2 Air supply and combustion products evacuation**3.3.2.1 combustion circuit**

Circuit including the air supply duct, the combustion chamber, the heat exchanger, the combustion products evacuation duct and either the fitting piece or the connection to the terminal, if any.

3.3.2.2 combustion products circuit

Circuit including the combustion chamber, the heat exchanger, the combustion products evacuation duct and either the fitting piece or the connection to the terminal, if any.

3.3.2.3 combustion chamber

An enclosure inside which combustion of the air-gas mixture takes place.

3.3.2.4 protected combustion chamber

A combustion chamber which is constructed such that an ignition in the combustion chamber does not ignite an air/gas mixture outside the combustion chamber.

3.3.2.5 air supply and combustion products evacuation ducts

Means for transporting combustion air to the burner and combustion products to the terminal or fitting piece.

It is necessary to distinguish between:

- completely surrounded ducts:
the combustion products evacuation duct is surrounded by combustion air throughout its length.
- separate ducts:
the combustion products evacuation duct and the combustion air supply duct are neither concentric nor completely surrounded ducts.

3.3.2.6 terminal

A device fitted to the outside of the building, to which are connected:

- the air supply and combustion products evacuation ducts for type C₁ and C₃ boilers (one or two devices);
- the air supply duct on the one hand and the combustion products evacuation duct on the other hand for type C₅ boilers (two devices);
- the air supply duct for type C₈ boilers (one device).

3.3.2.7 terminal guard

The device that protects the terminal from mechanical damage from outside influences.

3.3.2.8 fitting piece

A device which allows the fitting of:

- the air supply and combustion products evacuation ducts to a single shared duct for type C₂ boilers;
- the air supply and combustion products evacuation ducts to two ducts of a shared duct system for type C₄ boilers;
- type C₆ boilers to a system for air supply and combustion products evacuation that is approved and marketed independently from the boiler;
- the combustion products evacuation duct to a chimney that is part of the building for type C₈ boilers.

The fitting piece may be part of the boiler or of the air supply and/or combustion products evacuation system.