

SLOVENSKI STANDARD oSIST prEN 1749:2018

01-december-2018

Evropski standard za razvrščanje plinskih aparatov glede na način odvajanja produktov zgorevanja (tipi)

European standard for the classification of gas appliances according to the method of supplying combustion air and of evacuation of the combustion products (types)

iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>SIST EN 1749:2020</u>

Ta slovenski standard je istoveten z: prEN 1749

<u>ICS:</u>

91.140.40 Sistemi za oskrbo s plinom Gas supply systems

oSIST prEN 1749:2018

en



iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>SIST EN 1749:2020</u> https://standards.iteh.ai/catalog/standards/sist/81bbf08c-80c4-41c5-b932-9af9b6df9f04/sisten-1749-2020



EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

DRAFT prEN 1749

November 2018

ICS 91.140.40

Will supersede CEN/TR 1749:2014

English Version

European standard for the classification of gas appliances according to the method of supplying combustion air and of evacuation of the combustion products (types)

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 238.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

oSIST prEN 1749:2018

prEN 1749:2018 (E)

Contents

European foreword		3
Introduction		
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4 4.1 4.2 4.3 4.4	General scheme General Type A Type B Type C	5 6 6
5	Supplementary classification scheme for type A and type B appliances fitted with particular safety devices	12
6	Supplementary classification scheme for type B appliances for use in limited installation conditions	12
6.1	Type B appliance utilizing a third subscript "D")	12
6.2 6.2.1	Type B appliances utilizing a third subscript "P") General	
6.2.2 6.2.3	Type B appliances without draught diverters Type B appliances with draught diverters	13
7	Supplementary classification scheme for type C appliances for use in limited 6d19f04/s installation conditions — Type C ₁ appliances utilizing a third subscript "R"	
Annex A (normative) Classification according to the evacuation of the products of combustion and air inlet		
Annex B (informative) Special appliance classification (types)		35
Annex C (informative) Appliance types designed for connection to separate chimney products		

European foreword

This document (prEN 1749:2018) has been prepared by Technical Committee CEN/TC 238 "Test gases, test pressures, appliance categories and gas appliance types", the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede CEN/TR 1749:2014.

iTeh STANDARD PREVIEW (standards.iteh.ai)

<u>SIST EN 1749:2020</u> https://standards.iteh.ai/catalog/standards/sist/81bbf08c-80c4-41c5-b932-9af9b6df9f04/sisten-1749-2020

Introduction

This standard has been prepared to provide reference to CEN Technical Committees who are preparing European Standards for appliances burning combustible gases.

It gives details of a general scheme for the classification of such appliances according to the method of air supply and evacuating the products of combustion. This standard concerns gas appliances that are intended to be installed within buildings or outside buildings. Nevertheless, it is recognized that this appliance classification scheme could be utilized in other circumstances. For example, in the case of appliances capable of utilizing heating other fuels.

This form of appliance classification is widely used in the preparation of European Standards for gas appliances to identify the requirements and methods of test that are applicable to the various methods of evacuating the products of combustion and air supply. Appliances classified in this way are generally described as "types" and this description has been retained for the purposes of this standard.

The definitions are written intentionally in very general terms in order to cover any possible variations in the basic appliance types.

The main purpose of the standard is to promote harmonization in the classification of appliance types. This should ensure that there is a clear understanding of the various appliance types and will avoid confusion arising from Technical Committees describing them in different ways. CEN Technical committees are therefore requested to use this standard as reference in all circumstances in which it is appropriate. They should not deviate from it unless there are sound technical reasons for so doing.

In the preparation of this scheme it was noted that there were methods of evacuating products of combustion that were particular to a specific Technical Committee or to a particular gas appliance. These particular methods have not been included in the present scheme because, as indicated above, the main purpose of the scheme is to promote harmonization across Technical Committees.

However, it is intended that this scheme should be reviewed from time to time in order to consider its extension to other, possibly new, methods of evacuating products of combustion. At that time, such specific methods of evacuating products of combustion may be included at the request of the Technical Committees concerned.

1 Scope

This document gives details for the classification of gas appliances according to the method of supplying combustion air and of evacuating the products of combustion (types). This classification refers to gas appliances that are intended to be installed within buildings and/or outside of the building¹.

The European Standard classifies appliances as type A, B or C according to the basic principle for the evacuation of the products of combustion and air inlet.

In references to a gas appliance/gas appliances connected via "**its**" or "**their**" duct or ducts, it is intended that the air inlet duct and/or the discharge duct for carrying any products of combustion are part of the gas appliance. This means that such ducts are certified together with the gas appliance.

In terms of this standard a "**single duct**" is a flue duct designed and capable to discharging the products of combustion and/or air inlet duct for the air supply for only one appliance.

In terms of this standard a "**common duct**" is a flue duct designed and capable to discharging the products of combustion and/or air inlet duct for the air supply for more than one appliance.

This European Standard is a guide for the harmonization of product standards, for the preparation of installation standards and for the common understanding of the types of gas appliances.

This European Standard is neither an installation standard nor a product standard.

2 Normative references

There are no normative references in this document.

3 Terms and definitions and ards.iteh.ai)

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at <u>http://www.iso.org/obp</u>

4 General scheme

4.1 General

The general scheme for Type A, type B and type C appliances is given in 4.2, 4.3 and 4.4 respectively.

A series of subscript numbers is used in addition to these letters to identify specific variations within these basic principles.

Where this first subscript number exceeds "9" it is given in brackets to clarify that it is a single subscript number and not two subscript numbers.

The last subscript number of each specific variation indicates the absence or presence of an integral fan for the supply of combustion air and/or for the evacuation of the products of combustion. Where such a

¹ If the appliance is installed outside of the building (if this circumstance is explicitly allowed by the manufacturer) it will not change its classification (i.e.: a type B53 boiler will remain B53 if installed outside according to manufacturer instructions). These appliances are subject to specific additional requirements and tests, according to specific product standards.

oSIST prEN 1749:2018

prEN 1749:2018 (E)

fan is present, the numbers 2, 3 or 4 are given. These three numbers are used solely to identify the location of this fan.

Figures are also given in Annex A to assist in the identification of the various appliance types.

Those pictures are to be considered as examples; for each type, they do not represent all the possible details of applications.

4.2 Type A

An appliance not intended for connection to a flue or to a device for evacuating the products of combustion to the outside of the room in which the appliance is installed.

Type A1. An appliance without a fan.

Type A2. An appliance with a fan downstream of the combustion chamber/heat exchanger.

Type A3. An appliance with a fan upstream of the combustion chamber/heat exchanger.

4.3 Type B

An appliance intended to be connected to a flue that evacuates the products of combustion to the outside of the room containing the appliance. The combustion air is drawn directly from the room.

Type B₁. A type B appliance incorporating a draught diverter, marketed without duct systems, intended to be connected to a separately approved and marketed system for discharge of the combustion products.

Type B11. A natural draught type B1 appliance.

Type B_{12} . A type B_1 appliance designed for a natural draught flue incorporating a fan downstream of the combustion chamber/heat exchanger and upstream of the draught diverter.

Type B₁₃. A type B₁ appliance designed for a natural draught flue incorporating a fan upstream of the combustion chamber/heat exchanger.og/standards/sist/81bbf08e-80e4-41e5-b932-9af9b6df9f04/sist

Type B₁₄. A type B₁ appliance having an integral fan downstream of both the combustion chamber/heat exchanger and the draught diverter.

Type B2. A type B appliance without a draught diverter, marketed without duct systems, intended to be connected to a separately approved and marketed system for discharge of the combustion products.

Type B₂₁. ²⁾ A natural draught type B_2 appliance.

Type B22. A type B_2 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type B23. A type B2 appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type B3. A type B appliance without a draught diverter, which is designed for connection via its concentric duct to a common duct system. This common duct system consists of a single natural draught flue. All pressurized parts of the appliance containing products of combustion are completely enclosed by parts of the appliance supplying combustion air. Combustion air is drawn into the appliance from the room by means of a concentric duct, which encloses the flue. The air enters through defined orifices situated in the surface of the duct.

²⁾ A type B21 appliance will not generally be included in the scope of European Standards for gas appliances. However, it may apply in special circumstances, e.g. gas-fired incinerators.

prEN 1749:2018 (E)

Type B₃₁. A natural draught type B₃ appliance.

Appliances of this type are not foreseen.

Type B₃₂. A type B_3 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type B33. A type B3 appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type B4. A type B appliance, incorporating a draught diverter, that is designed for connection via its flue duct to its flue terminal.

Type B₄₁. ³⁾ A natural draught type B_4 appliance.

Type B_{42} **.** A type B_4 appliance designed for a natural draught flue incorporating a fan downstream of the combustion chamber/heat exchanger and upstream of the draught diverter.

Type B₄₃**.** A type B₄ appliance designed for a natural draught flue incorporating a fan upstream of the combustion chamber/heat exchanger.

Type B₄₄. A type B₄ appliance having an integral fan downstream of both the combustion chamber/heat exchanger and the draught diverter.

Type B5. A type B appliance, without a draught diverter, that is designed for connection via its flue duct to its flue terminal.

Type B₅₁. ⁴) A natural draught type B5 appliance.

Type B₅₂. A type B_5 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type B₅₃. A type B₅ appliance incorporating a fan upstream of the combustion chamber/heat exchanger. **4.4 Type C**

An appliance in which the combustion circuit (air supply, combustion chamber, heat exchanger and evacuation of the products of combustion) is sealed with respect to the room in which the appliance is installed.

Type C₁. A type C appliance that is designed for connection via its ducts to its horizontal terminal, which at the same time admits fresh air to the burner and discharges the products of combustion to the outside through orifices that are either concentric or close enough to come under similar wind conditions.

Type C₁₁. A natural draught type C₁ appliance.

Type C_{12} . A type C_1 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₁₃. A type C₁ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

³⁾ Type B₄₁ appliances installed in mobile homes (caravan holiday homes) are commonly described as "closed flue" appliances; this terminology being used in EN 1949, which covers the installation of such appliances.

⁴⁾ A type B₅₁ appliance will not generally be included in the scope of European Standards for gas appliances. However, it may apply in special circumstances, e.g. gas-fired incinerators.

prEN 1749:2018 (E)

Type C₂. A type C appliance connected via its two ducts to a common duct system⁵) serving more than one appliance. This system consists of a single duct, which supplies the combustion air and evacuates the products of combustion⁶).

Type C₂₁. A natural draught type C₂ appliance.

Type C₂₂. A type C₂ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C23. A type C2 appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C3. A type C appliance that is designed for connection via its ducts to its a vertical terminal, which at the same time admits fresh air to the burner and discharges the products of combustion to the outside through orifices that are either concentric or close enough to come under similar wind conditions.

Type C₃₁. A natural draught type C₃ appliance.

Type C₃₂. A type C₃ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₃₃. A type C₃ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₄. A type C appliance connected via its two ducts to a common natural draught duct system⁷) designed for more than one appliance. This common duct system consists of two ducts connected to a terminal, which at the same time admits fresh air to the burner and discharges the products of combustion to the outside through orifices that are either concentric or close enough to come under similar wind conditions.

Type C₄₁. A natural draught type C₄ appliance.

Type C₄₂. A type C₄ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₄₃. A type C₄ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C5. A type C appliance connected via its separate ducts to its separate terminals for the supply of combustion air and the evacuation of the products of combustion. These ducts may terminate in zones of different pressure.

Type C₅₁. A natural draught type C₅ appliance.

Type C₅₂. A type C₅ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₅₃. A type C₅ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₆. A type C appliance which is intended to be connected to a separately approved and marketed system for the supply of combustion air and discharge of the combustion products.

⁵⁾ This common duct system is part of the building and not a part of the appliance.

⁶⁾ This appliance type is now obsolete and unlikely to be called up in future European standards for gas appliances.

⁷⁾ This common duct system is part of the building and not a part of the appliance.

Pictures for type C_6 appliances have not been included. This is because such appliances are marketed without duct systems. When installed such an appliance will have a configuration similar to one of the arrangements shown for other type C appliances.

Appliance Technical Committees have the responsibility for inclusion of requirements and methods of test in their standards to ensure that type C_6 appliances are suitable for their intended method of supplying combustion air and of evacuation of the combustion product.

Type C₆₁. A natural draught type C₆ appliance.

Type C_{62} . A type C_6 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₆₃. A type C₆ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₇. A type C appliance in which the combustion air supply and the combustion products evacuation is provided by its two vertical ducts. The combustion air is taken from a loft and the products of combustion are discharged above the roof. A draught diverter is incorporated in the combustion products evacuation duct at a location above the combustion air inlet orifice(s)⁸.

Type C₇₁. A natural draught type C₇ appliance.

Type C₇₂. A type C₇ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₇₃. A type C₇ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₈. A type C appliance connected via one of its ducts to a single or common duct system⁹). This duct system consists of a natural draught duct (i.e. not incorporating a fan) that evacuates the products of combustion. The appliance is connected via a second of its ducts to a terminal, which supplies air to the appliance from outside the building.

Type C₈₁. A natural draught type C_8^{10} appliance.²⁰²⁰

Type C $_{82}$. A type C $_{8}$ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C₈₃. A type C₈ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C9. A type C appliance that is designed for connection via its flue duct to its vertical terminal and via its air inlet duct to an existing vertical duct. The terminal at the same time admits fresh air to the burner and discharges the products of combustion to the outside through orifices that are either concentric or close enough to come under similar wind conditions.

The air inlet duct¹¹⁾, or part of it, is an existing vertical duct within the building, e.g. a converted chimney.

Type C91 .A natural draught type C9 appliance.

⁸⁾ This appliance type is now obsolete and unlikely to be called up in future European standards for gas appliances.

⁹⁾ This single or common duct system is part of the building and not a part of the appliance.

¹⁰⁾ A type C₈₁ appliance will not generally be included within the scope of European Standards for gas appliances.

¹¹⁾ The vertical air inlet duct is part of the building and not a part of the appliance.

Type C92. A type C9 appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type C93. A type C9 appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₍₁₀₎ A type C appliance connected via its two ducts to a common duct system¹²) designed for more than one appliance. This common duct system consists of two ducts connected to a terminal, which at the same time admits fresh air to the burner and discharges the products of combustion to the outside through orifices that are either concentric or close enough to come under similar wind conditions.

The $C_{(10)}$ appliance is designed to become connected to a common duct system that is designed to operate under the conditions where the static pressure in the common flue duct might exceed the static pressure in the common air duct.

Type C(10)2. A type C(10) appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type $C_{(10)3}$. A type $C_{(10)}$ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C(11). An assembly of two or more generally identical appliance modules, connecting ducts, a common flue duct, a common air duct, where the static pressure in the common flue ducts might exceed the static pressure in the air ducts and where the orifices of air duct and the flue duct to the outside are either concentric, or close enough to come under similar wind conditions.

A $C_{(11)}$ appliance is designed to be assembled by connecting its appliance modules via its connecting ducts to its common ducts. These common ducts consist of two ducts connected to their terminals, which at the same time admit fresh air to the burner of each appliance module, and discharges the products of combustion of each appliance module to the outside through orifices that are either concentric or close enough to come under similar wind conditions. The appliance has a single air inlet and a single flue outlet.

The $C_{(11)}$ appliance, made by an assembly of two or more modules, is designed as a single appliance; each appliance module is capable of independent operation and it consists of a heat exchanger, burner, control and safety devices.

The $C_{(11)}$ appliance is evaluated and certified in analogy with the types C_1 , C_3 , C_5 .

Type $C_{(11)2}$. A type $C_{(11)}$ appliance is an assembly of two or more appliance modules each incorporating a fan downstream of the combustion chamber/heat exchanger.

Type $C_{(11)3}$. A type $C_{(11)}$ appliance is an assembly of two or more appliance modules each incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C₍₁₂₎. A type C appliance connected via one of its ducts to a common flue duct system¹³). The appliance is connected via a second of its ducts to its terminal, which supplies air to the appliance from outside the building.

A type $C_{(12)}$ appliance is designed to become connected to a common flue duct that is designed to operate under the conditions where the static pressure in the common flue duct might exceed the static pressure in the individual air ducts.

¹²⁾ This common duct system is part of the building and not a part of the appliance.

¹³⁾ This single or common duct system is part of the building and not a part of the appliance.

Type C₍₁₂₎₂. A type C₍₁₂₎ appliance incorporating a fan downstream of the combustion chamber/heat exchanger.

Type $C_{(12)3}$. A type $C_{(12)}$ appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

Type $C_{(13)}$. An assembly of two or more generally identical appliance modules, single air ducts, connecting ducts and a common flue duct. The static pressure in the common flue duct might exceed the static pressure in its individual air supply duct.

A type $C_{(13)}$ appliance is designed to be assembled by connecting its appliance modules via its connecting ducts to its common flue duct. Each module is connected via its air supply duct to its terminal.

The $C_{(13)}$ appliance, made by an assembly of two or more modules, is designed as a single appliance; each module is capable of independent operation.

Each $C_{(13)}$ appliance module consists of a heat exchanger, burner, control and safety devices.

The $C_{(13)}$ appliance is evaluated and certified in analogy with the types C_1 , C_3 , C_5 .

Type $C_{(13)2}$. A type $C_{(13)}$ appliance is an assembly of two or more appliance modules each incorporating a fan downstream of the combustion chamber/heat exchanger.

Type $C_{(13)3}$. A type $C_{(13)}$ appliance is an assembly of two or more appliance modules each incorporating a fan upstream of the combustion chamber/heat exchanger.

Type C(14). An assembly of two or more generally identical appliance modules, connecting ducts and a common flue duct. The appliance modules are connected via their air inlet ducts to a common vertical air inlet duct, which supplies air to the appliance from outside the building. The static pressure in the common flue duct might exceed the static pressure in the air duct and the orifices of air duct and the flue duct to the outside are either concentric, or close enough to come under similar wind conditions.

A $C_{(14)}$ appliance is designed to be assembled by connecting its appliance modules via its connecting ducts to its common duct, to the common air inlet duct and to its terminal, which at the same time admit fresh air to the burner of each appliance module, and discharges the products of combustion of each appliance module to the outside through orifices that are either concentric or close enough to come under similar wind conditions. The appliance has a single air inlet and a single flue outlet.

The common air inlet duct¹⁴), or part of it, is an existing vertical duct within the building (e.g. a converted chimney).

The $C_{(14)}$ appliance, made by an assembly of two or more modules, is designed as a single appliance; each module is capable of independent operation.

The $C_{(14)}$ appliance is evaluated and certified in analogy with the types C_1 , C_3 , C_5 .

Type $C_{(14)2}$. A type $C_{(14)}$ appliance is an assembly of two or more appliance modules each, incorporating a fan downstream of the combustion chamber/heat exchanger.

Type $C_{(14)3}$. A type $C_{(14)}$ appliance is an assembly of two or more appliance modules each incorporating a fan upstream of the combustion chamber/heat exchanger.

Type $C_{(15)}$. A type C appliance that is designed for connection via its flue duct to its a vertical terminal and via its air inlet duct to an existing common air inlet vertical duct. The terminal at the same time admits

¹⁴⁾ The vertical air inlet duct is part of the building and not a part of the appliance.