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Akumulacijski plinski grelniki za pripravo sanitarne tople vode - Dopolnilo A1

Gas-fired storage water heaters for the production of domestic hot water

Gasbeheizte Vorrats-Wasserheizer für den sanitären Gebrauch

Appareils de production d'eau chaude par accumulation pour usages sanitaires utilisant les combustibles gazeux

Ta slovenski standard je istoveten z: **EN 89:1999/A1:1999**

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91.140.65

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EUROPEAN STANDARD

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ICS 91.140.65

English version

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This Amendment A1 modifies the European Standard 89:1999; it was approved by CEN on 12 June 1997.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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 amendment 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.

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

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

Ref. No. EN 89:1999/A1:1999 E

Foreword

This Amendment EN 89:1999/A1:1999 to EN 89:1999 has been prepared by Technical Committee CEN/TC 48 "Domestic gas-fired water heaters", the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN 89:1999 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of an identical text or by endorsement, at the latest by April 2000, and conflicting national standards shall be withdrawn at the latest by April 2000.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 Amendment to the European Standard EN 89:1999 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).

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.

This Amendment gives the additions, alterations, deletions to cover type tests of appliances equipped with a fan incorporated in the combustion air intake circuit or combustion products evacuation circuit.

Amend 1 : "Scope" to take into account the following paragraphs :

This amendment completes EN 89 : Gas-burning storage water heaters for domestic hot water uses with sealed combustion circuit with a fan incorporated in the combustion air circuit or combustion products evacuation circuit, or total premix burner circuit.

This amendment does not contain all the necessary requirements to make it applicable to appliances with a variable combustion air flow rate.

It is applicable to Type C_{12}, C_{13}, C_{32}, C_{33}, C_{42}, C_{43}, C_{52}, C_{53}, C_{62}, C_{63} appliances.

Add the following paragraphs :

3.4.12 Device for monitoring air supply or evacuation of combustion products

Device designed to switch the appliance to the shut-down position in the event of abnormal air intake or combustion products evacuation conditions.

3.5.11 Prepurging

Operation consisting of introducing forced air into the combustion circuit in order to evacuate any air/gas mixtures remaining ; this takes place between the start-up command and the activation of the ignition device.

3.6.5 Total premix burner

Burner in which the gas and a quantity of air, corresponding to the quantity which is at least equal to the theoretical value necessary for complete combustion, are mixed before pilot flame-formation orifices.

3.7.7 Air intake and combustion products evacuation ducts

Device used for transporting combustion air and combustion products from the appliance to the terminal or to the duct adapter.

The following should be noted :

— ducts completely surrounded : the combustion products evacuation duct is surrounded by combustion air along its whole length ;

— separated ducts : the combustion products evacuation duct and the combustion air intake duct are neither concentric nor completely surrounded.

Add to 4.3.2.1:

Type C_{12}

Type C_1 appliance in which the fan is incorporated downstream of the combustion chamber/heat exchanger.

Type C_{13}

Type C_1 appliance in which the fan is incorporated upstream of the combustion chamber/heat exchanger.

Add to 4.3.2.3:

Type C_{32}

Type C_3 appliance in which the fan is incorporated downstream of the combustion chamber/heat exchanger.

Type C_{33}

Type C_3 appliance in which the fan is incorporated upstream of the combustion chamber/heat exchanger.

Add to 4.3.2.4:

Type C_{42}

Type C_4 appliance in which the fan is incorporated downstream of the combustion chamber/heat exchanger.

Type C_{43}

Type C_4 appliance in which the fan is incorporated upstream of the combustion chamber/heat exchanger.

Add to 4.3.2.5:

Type C_{52}

Type C_5 appliance in which the fan is incorporated downstream of the combustion chamber/heat exchanger.

Type C_{53}

Type C_5 appliance in which the fan is incorporated upstream of the combustion chamber/heat exchanger.

Add to 4.3.2.6:

Type C_{62}

Type C_6 appliance in which the fan is incorporated downstream of the combustion chamber/heat exchanger.

Type C_{63}

Type C_6 appliance in which the fan is incorporated upstream of the combustion chamber/heat exchanger.

Amend 6.1.7.1 :

6.1.7.1 All appliances

It shall not be possible to adjust the cross-section of the air intake leading to the combustion chamber or the cross-section of the combustion products evacuation flue, in the case of appliances without fans.

Except where otherwise stated, the fan-assisted appliances may be fitted with an adjustment component in the combustion air intake or combustion products evacuation circuit, designed to adapt the appliance to installation conditions. This adjustment is carried out by calibrating orifices, or by predetermined positioning applying the detailed instructions of the manufacturer.

Any appliances shall be designed so that the combustion air supply is ensured under normal conditions of use and maintenance.

Add a new paragraph 6.1.7.5 :

6.1.7.5 Requirements for fan-assisted appliances

6.1.7.5.1 Fan

Access to the rotating elements of any fan shall be prevented. Parts of any fan in contact with combustion products shall have adequate protection against corrosion if they are not made of corrosion-resistant material ; in addition, they shall be capable of withstanding the combustion products temperature.

6.1.7.5.2 Device for monitoring air supply

Before each start-up of the appliance, it shall be checked that there is no simulation of air flow. The supply of combustion air shall be checked continuously by :

a) checking the pressure of combustion air or combustion products. This solution is only accepted for appliances equipped with a constant-speed fan and when the combustion circuit is completely surrounded by the air intake duct. In addition, the following requirements shall be respected :

— the length of ducts shall not exceed 3 m ;

— the ducts shall have no mobile and/or adjustable blocking devices ; and

— the pressure loss of the heat exchanger shall not exceed 0.05 mbar ;

b) checking the flow rate of combustion air or combustion products.

Replace 7.2.2.2.2 Tests with :

7.2.2.2.2 Tests

Tests are carried out in such a way that the assembly has the maximum number of seals indicated by the manufacturer, between :

— the appliance and its ducts ;

— the connection ducts ;

— the ducts and bends if applicable ; and

— the ducts, the duct adapter, if applicable, or the terminal.

If necessary, the wall mounting or the seal with the duct adapter may be sealed in compliance with manufacturer's instructions.

According to the choice of the manufacturer, the test is carried out either on the body of the appliance and on the ducts separately, or on the appliance connected to its ducts.

The test pressure shall be :

— for appliances without fans and appliances in which the fan is incorporated downstream of the combustion chamber :

— 0,5 mbar ;

— for appliances in which the fan is incorporated upstream of the combustion chamber :

— 0,5 mbar + p_{br}

where

p_{br} is the pressure measured in the casing of the combustion chamber, the appliance being in thermal equilibrium at the nominal heat flow rate, equipped with longest ducts specified by the manufacturer.

The combustion circuit :

— of the body of the appliance and of the connection to the duct(s) ;

— of air intake ducts and combustion products evacuation flues ; or

— of the appliance connected to its ducts ;

shall be connected to a pressure source at one end and blocked at the other end.

Amend title of 7.7.2.2.2.1 : "**Type C_1 andC_3 appliances**"

Add 7.7.2.2.2.3:

7.7.2.2.2.3 Type C_4 appliances

The appliance is installed with the shortest ducts specified by the manufacturer. A suction of 0,5 mbar is applied to the combustion products evacuation duct (see Figure 10).

Add 7.7.2.2.2.4:

7.7.2.2.2.4 Type C_5 appliances

The appliance is installed with the shortest ducts specified by the manufacturer. A suction of 2,0 mbar is applied to the combustion products evacuation duct (see Figure 10).

Add 7.7.2.2.2.5:

7.7.2.2.2.5 Type C_6 appliances

The appliance is installed with ducts supplied by the manufacturer. A pressure loss of 0,5 mbar is introduced to the opening of the combustion products evacuation flue (see Figure 10).

Add 7.7.2.2.2.6:

7.7.2.2.2.6 Fan-assisted appliances

The appliance is supplied at nominal electrical voltage or at extreme voltages from the nominal range. The test is repeated at a voltage varying from 85 % to 110 % of the nominal value.

Add 7.7.4:

7.7.4 Additional requirements relating to operation of the permanent ignition burner when the fan is stopped

7.7.4.1 Requirements

The stability of the pilot flame of the ignition burner shall be correct.

7.7.4.2 Test

The ignition burner is adjusted with the reference gas at normal pressure as specified in the manufacturers' instructions.

The test is carried out with the fan stopped, in still air, at maximum pressure with incomplete combustion gas and coal gas. When the appliance is cold, the ignition burner is ignited and maintained in operation for 1 h.

Amend title of 7.12.2.3.2 : "**Type C_1 and C_3 appliances**"

Add 7.12.2.3.4:

7.12.2.3.4 Appliances of types C_4, C_5 and C_6

In the test conditions of 7.7.2.2.2, it is checked that requirements of 7.12.1 are met.

Add 7.15:

7.15 Prepurging

7.15.1 Requirements

For fan-assisted appliances, prepurging is compulsory before each ignition of the main burner (one attempt or several sequential automatic ignition attempts), except if one of the following conditions is satisfied :

a) the appliance is equipped with a permanent or non-permanent ignition burner ;

b) if the heat flow rate is greater than 0,250 kW, the gas circuit features two taps which close simultaneously ;

1) of class C (or B, or A) ; or

2) one of class B (or A) and the other of class D (or C, or B, or A).

Under test conditions, the volume or duration of prepurging shall be at least the following :

— for appliances in which the prepurging air is drafted over the whole of the intake cross-section of the combustion chamber : at least the volume of the combustion chamber or at least 5 s at air flow rate corresponding to the nominal heat flow rate ;

— for other appliances, at least three times the volume of the combustion chamber or at least 15 s.

7.15.2 Test

Depending on the option chosen by the manufacturer, the volume or time for prepurging are determined as follows :

a) prepurging volume

— the air flow rate is measured at the combustion products flue output at ambient temperature ;

— the appliance is stopped at ambient temperature. The fan is powered at the electrical voltage specified for prepurging ;

— the flow rate measured precisely in a range of ± 5 % is returned to reference conditions (15 °C, 1,013.25 mbar) ;

— the volume of the combustion circuit is indicated by the manufacturer ;

b) prepurging time

— the duration between the fan start-up command and power up of the ignition device is determined.

Add 7.16:

7.16 Air monitoring device

7.16.1 Requirements

The gas flow rate shall cease before the CO content exceeds 0,2 %.