SLOVENSKI STANDARD
oSIST prEN 13203-7:2019

01-december-2019

[Not translated]

Gas-fired domestic appliances producing hot water - Part 7: Assessment of energy consumption of combination boilers equipped with a passive flue heat recovery device

Gasbefeuerte Geräte zur Warmwasserbereitung für den Hausgebrauch - Teil 7: Bewertung des Energieverbrauchs von Kombigeräten, ausgerüstet mit einer passiven Vorrichtung zur Wärmerückgewinnung im Abgasschacht

Appareils domestiques produisant de l'eau chaude sanitaire utilisant les combustibles gazeux Partie 7: Evaluation de la consommation énergétique d'une chaudière équipée d'un dispositif passif de récupération de la chaleur dans les fumées

Ta slovenski standard je istoveten z: **prEN 13203-7**

ICS:

91.140.65 Oprema za ogrevanje vode Water heating equipment

oSIST prEN 13203-7:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 13203-7

October 2019

ICS

English Version

Gas-fired domestic appliances producing hot water - Part 7: Assessment of energy consumption of combination boilers equipped with a passive flue heat recovery device

Appareils domestiques produisant de l'eau chaude sanitaire utilisant les combustibles gazeux - Partie 7 : Évaluation de la consommation énergétique d'une chaudière à deux services équipée d'un dispositif passif de récupération de la chaleur dans les produits de combustion

Gasbeheizte Geräte für die sanitäre Warmwasserbereitung für den Hausgebrauch - Teil 7: Bewertung des Energieverbrauchs von Kombigeräten, ausgerüstet mit einer passiven Vorrichtung zur Wärmerückgewinnung im Abgasschacht

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 109.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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

Contents

Page

European Foreword

This document (prEN 13203-7:2019) has been prepared by CEN/TC 109, “Central heating boilers using gaseous fuels,” the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

Introduction

This document refers to clauses of EN 13203-2:2018 or adapts clauses by stating in the corresponding clause, on the principle:

— shall be according to EN 13203-2:2018, (clause number) with the following modification;

— shall be according to EN 13203-2:2018, (clause number) with the following addition;

— EN 13203-2:2018, (clause number) is replaced by the following;

— EN 13203-2:2018, (clause number) is not applicable.

1 Scope

This document is applicable to gas-fired appliances producing domestic hot water. It applies to condensing combination boilers with passive flue heat recovery device (PFHRD) that have:

— a heat input not exceeding 400 kW,

— a hot water storage tank capacity (if any) not exceeding 2000 l,

— a declared load profile between M to 4XL.

In the case of combination boilers, with or without storage tank, domestic hot water production is integrated or coupled, the whole being marketed as a single unit.

For this standard, some tests and calculation results of EN 13203-2:2018 are used to calculate the energy consumptions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13203-2:2018, *Gas-fired domestic appliances producing hot water - Part 2: Assessment of energy consumption*

EN 13203-1:2015, *Gas fired domestic appliances producing hot water - Part 1: Assessment of performance of hot water deliveries*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13203-2:2018 apply.

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 http://www.iso.org/obp

3.1
direct PFHRD contribution
energy contribution by the PFHRD to domestic hot water production recovered from flue gas energy during domestic hot water production

3.2
indirect PFHRD contribution
energy contribution by the PFHRD to domestic hot water production recovered from flue gas energy during domestic central heating production

3.3
nominal average heat input
Q_a
average of minimal and maximal heat input as declared by the technical documentation for range rating appliances

3.4
Passive Flue Heat Recovery Device
PFHRD
device integrated in the appliance or supplied with the appliance to transmit waste heat from the combustion products to the domestic hot water

3.5
thermal bridge
construction of the combination boiler with PFHRD, where useful heat of the combination boiler is transmitted to the PFHRD

4 General test conditions

4.1 Reference condition

Shall be according to EN 13203-2:2018, 4.1.

4.2 Measurement uncertainties

4.2.1 General

Shall be according to EN 13203-2:2018, 4.2.1.

4.2.2 Steady-state conditions

Shall be according to EN 13203-2:2018, 4.2.2.

4.3 Test conditions

4.3.1 General

Shall be according to EN 13203-2:2018, 4.3.1, with the following modifications:

The following sentence is not applicable:

"For combination gas boiler, the tests shall be carried out only in summer mode as defined in 3.3, and the appliance shall be set in summer mode."

The following sentence is modified as follows:

"The load profile used for the measurement shall be the one declared according to the technical instruction of the appliance".

4.3.2 Test room

Shall be according to EN 13203-2:2018, 4.3.2.

4.3.3 Water supply

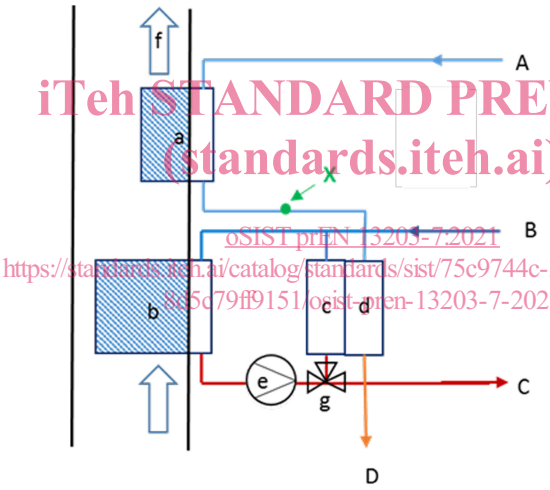
For the tests:

— The domestic water pressure is the static inlet pressure under dynamic conditions measured as close as possible to the product.

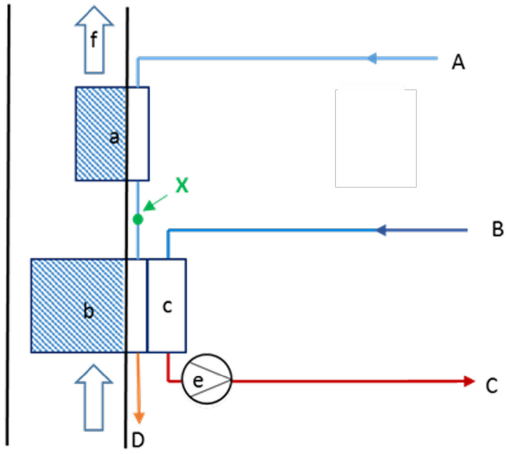
— The inlet temperatures are measured immediately upstream of the cold water inlet connection in the centre of the flow.

— An additional (rapid response) sensor X shall be placed immediately in the domestic water outlet of the PFHRD construction. This sensor shall be situated in the centre of the flow. If the PFHRD construction is an integrated part of the boiler, an adapter is needed to place the sensor X. The technical documentation shall give a figure of this adapter. The appliance for testing shall be delivered with this adapter (see Figure 1a and Figure 1b).

  Water temperatures shall be measured with a rapid response temperature sensor.



a) — Position of the X sensor for boilers with separated secondary heat exchanger



b) — Position of the X sensor for boilers with integrated secondary heat exchanger

Key

a	PFHRD	g	3 way valve
b	Boiler	X	Temperature measurement point
c	Heat exchanger (CH circuit)	A	DHW in
d	Heat exchanger (DHW circuit)	B	CH in
e	CH pump	C	CH out
f	Flue	D	DHW out

Figure 1 — Positioning of the X sensor for boilers

4.3.4 Initial adjustment of the appliance

Shall be according to EN 13203-2:2018, 4.3.4 with the following modification:

"Load profile XS is not applicable."

4.3.5 Conditions for the determination of the maximum load profile

EN 13203-2:2018, 4.3.5 is not applicable.

4.3.6 Electrical supply

Shall be according to EN 13203-2:2018, 4.3.6.

The following new Clause 5 is added:

5 Determination of applicability of the present standard

To ensure that the appliance is in the scope of this standard it shall be proved that during central heating production there is no significant heat transfer to the PFHRD construction.

This heat transfer can be caused by a so called "thermal bridge" where conduction, convection (even by self-circulation in a single tube with a net water flow of zero) and radiation during the production of central heating water can occur.