

STN	Spotřebiče na přípravu teplej úžitkovej vody pre domácnosť spaľujúce plynné palivo Časť 5: Posudzovanie spotreby energie spotřebičov spaľujúcich plynné palivo v kombinácii s elektrickým tepelným čerpadlom	STN EN 13203-5 06 1012
------------	---	--

Gas-fired domestic appliances producing hot water - Part 5: Assessment of energy consumption of gas-fired appliances combined with electrical heat pump

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/19

Obsahuje: EN 13203-5:2018

128755

EUROPEAN STANDARD

EN 13203-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2018

ICS 91.140.65

English Version

Gas-fired domestic appliances producing hot water - Part 5: Assessment of energy consumption of gas fired appliances combined with electrical heat pump

Appareils domestiques produisant de l'eau chaude sanitaire utilisant les combustibles gazeux - Partie 5 : Évaluation de la consommation énergétique des appareils utilisant les combustibles gazeux combinés à une pompe à chaleur électrique

Gasbeheizte Geräte für die sanitäre Warmwasserbereitung für den Hausgebrauch - Teil 5: Bewertung des Energieverbrauchs von Gasgeräten mit elektrischer Wärmepumpe

This European Standard was approved by CEN on 27 May 2018.

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.

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 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.



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

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

EN 13203-5:2018 (E)

Contents	Page
European foreword.....	4
Introduction	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 General test conditions	9
4.1 Reference conditions	9
4.2 Specific heat source temperature conditions	9
4.3 Measurement uncertainties	10
4.3.1 General.....	10
4.3.2 Steady-state conditions.....	11
4.4 Test conditions.....	11
4.4.1 General.....	11
4.4.2 Test room	11
4.4.3 Water supply.....	12
4.4.4 Initial adjustment of the appliance.....	12
4.4.5 Conditions for the determination of the maximum load profile.....	13
4.4.6 Electrical supply	13
5 Determination of the energy consumption of the appliance.....	13
5.1 General.....	13
5.2 Load profiles	13
5.3 Determination of the energy recovered by the useful water	21
5.4 Calculation of gas energy.....	22
5.4.1 Calculation of daily gas energy consumption in summer mode.....	22
5.5 Calculation of electrical energy.....	22
5.5.1 Calculation of daily electrical energy consumption	22
5.6 Corrections to apply for fans and liquid pumps.....	23
5.6.1 Power absorbed by the fans of connected heat pumps	23
5.6.2 Power absorbed by liquid pumps	24
5.7 Measurement of energy consumption in standby mode.....	24
5.7.1 General.....	24
5.7.2 Calculation of daily gas energy consumption in standby mode	25
5.7.3 Calculation of daily auxiliary electrical energy consumption in standby mode	25
5.8 Determination of daily auxiliary electrical energy consumption in off mode.....	26
6 Determination of the ratio of wasted water to total water	26
7 Eco design Related Products Data.....	27
7.1 Water heating energy efficiency	27
7.2 Annual fuel consumption (AFC).....	28
7.3 Annual electricity consumption (AEC)	28
7.4 Mixed water at 40°C (V40) for storage water heaters	29
Annex A (informative) Test conditions	30
Annex B (informative) Test rig and measurement devices	34

B.1	General.....	34
B.2	Pressure measurement.....	34
B.3	Temperature measurement.....	35
	Annex C (informative) Declaration of the Maximum Load Profile.....	38
	Annex D (informative) Packages covered by the present document.....	39
	Annex E (informative) Additional performance data.....	44
E.1	Heating time.....	44
E.2	Standby power input.....	44
E.3	Coefficient of primary energy performance or primary energy yield (PER).....	45
E.4	Total consumption of primary energy.....	45
	Annex ZA (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) n° 814/2013 [OJEU L239 of 6 September 2013] aimed to be covered.....	47
	Annex ZB (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 812/2013 [OJEU L239 of 6 September 2013] aimed to be covered.....	48
	Annex ZC (informative) Relationship between this European Standard and the ecodesign requirements of Commission Regulation (EU) n° 813/2013 [OJEU L239 of 6 September 2013] aimed to be covered.....	49
	Annex ZD (informative) Relationship between this European Standard and the energy labelling requirements of Commission Delegated Regulation (EU) No 811/2013 [OJEU L239 of 6 September 2013] aimed to be covered.....	50
	Bibliography.....	51

EN 13203-5:2018 (E)**European foreword**

This document (EN 13203-5:2018) 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 June 2019, and conflicting national standards shall be withdrawn at the latest by June 2019.

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

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 Annex ZA, ZB, ZC or ZD, which are integral parts of this document.

The main purpose of this revision is to provide a means of conforming to requirements of Commission Delegated Regulation (EC) n° 813/2013, (EC) n° 811/2013, (EC) n° 812/2013 and (EC) n° 814/2013.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The safety operation of the boiler or water heater is not covered by this standard. Safety should be proved by means of the essential safety requirements of the Gas Appliances Directive 2009/142/EC. This may be achieved by compliance with the appropriate existing harmonized standards.

NOTE 1 Useful standards are EN 26, EN 89 and series EN 15502.

NOTE 2 The Gas Appliances Directive 2009/142/EC has been replaced by the Gas Appliances Regulation 426/2016/EU.

EN 13203-5:2018 (E)**1 Scope**

This European Standard is applicable to gas-fired appliances producing domestic hot water. It applies to both instantaneous and storage gas-fired combined with electrical heat pump.

It applies to a package marketed as single unit or fully specified by the manufacturer that have:

- a heat input not exceeding 400 kW; and
- a hot water storage tank capacity (if any) not exceeding 2000 l.

EN 13203-1 sets out in qualitative and quantitative terms the performance in delivery of domestic hot water for a selected variety of uses. It also gives a system for presenting the information to the user. The present document sets out a method for assessing the energy performance of gas fired appliances combined with heat pump with electrically driven compressor according to EN 16147. It defines a number of daily load profiles for each domestic hot water use, kitchen, shower, bath and a combination of these, together with corresponding test procedures, enabling the energy performances of different gas-fired appliances to be compared and matched to the needs of the user. Where other technologies are combined with a gas-fired boiler or a water heater to produce domestic hot water, specific parts of EN 13203 apply.

The present document does not apply for gas boilers with recovery systems using combustion products as heat source for the electrical heat pump.

When the electrical heat pump does not work for domestic hot water production in the summer period, the present standard is not applicable for energy performances assessing, EN 13203-2 should be used.

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 14511-3:2018, *Air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling - Part 3: Test methods*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN