



NSAI
Standards

Irish Standard
I.S. EN 13203-3:2010

Solar supported gas-fired domestic appliances producing hot water -
Appliances not exceeding 70 kW heat input and 500 litres water storage capacity - Part 3: Assessment of energy consumption

I.S. EN 13203-3:2010

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i>	<i>This document is based on:</i> EN 13203-3:2010	<i>Published:</i> 11 August, 2010
This document was published under the authority of the NSAI and comes into effect on: 8 September, 2010		ICS number: 91.140.65
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeáin Náisiúnta na hÉireann		

ICS 91.140.65

English Version

Solar supported gas-fired domestic appliances producing hot water - Appliances not exceeding 70 kW heat input and 500 litres water storage capacity - Part 3: Assessment of energy consumption

Appareils domestiques produisant de l'eau chaude sanitaire utilisant les combustibles gazeux couplés à un capteur solaire - Appareils de débit calorifique inférieur ou égal à 70 kW et de capacité de stockage inférieure ou égale à 500 litres - Partie 3 : Évaluation de la consommation énergétique

Solar unterstützte gasbeheizte Geräte für die sanitäre Warmwasserbereitung für den Hausgebrauch - Geräte, die eine Nennwärmebelastung von 70 kW und eine Speicherkapazität von 500 Liter Wasser nicht überschreiten - Teil 3: Bewertung des Energieverbrauchs

This European Standard was approved by CEN on 9 July 2010.

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 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 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 General test conditions	7
4.1 General.....	7
4.2 Reference conditions	7
4.3 Measurement uncertainties	7
4.4 Test conditions	8
4.4.1 General.....	8
4.4.2 Installation for test procedure	8
4.4.3 Test room.....	8
4.4.4 Water supply	8
4.4.5 Solar circuit	9
4.4.6 Initial adjustment of the appliance.....	9
4.4.7 Electrical supply	9
4.4.8 Solar thermal input	9
5 Determination of the energy consumption of the solar supported gas-fired appliance	9
5.1 General.....	9
5.2 Tapping cycles	9
5.3 Solar cycle	14
5.3.1 General.....	14
5.3.2 Test for determination of the daily energy consumption	15
Annex A (informative) Test rig and measurement devices	21
A.1 General.....	21
A.2 Pressure measurement	22
A.3 Temperature measurement.....	22
Annex B (informative) Solar collector simulator.....	25
B.1 General.....	25
B.2 Derivation of the equation used for the calculation of $T_{C,out}$	26
B.3 Alternative solar collector simulator	27
Annex C (normative) Appliances covered by this European Standard.....	30
Bibliography	32

Foreword

This document (EN 13203-3:2010) 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 February 2011, and conflicting national standards shall be withdrawn at the latest by February 2011.

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

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard is applicable to solar supported gas-fired appliances producing domestic hot water. It applies to a system marketed as single unit or a system fully specified by a manufacturer that:

- has a gas heat input not exceeding 70 kW; and
- has a hot water storage capacity not exceeding 500 l; and
- is equipped with at least one solar collector; and
- is, with regard to the solar hydraulic circuit, considered as a forced circulation system (definition according to EN ISO 9488:1999).

The appliances covered by this European Standard are described in Annex C.

This European Standard does not apply to thermo-siphon or integral collector storage systems (definitions according to EN ISO 9488:1999).

NOTE In principle, the energy consumption of thermo-siphon solar preheat systems and integral collector storage preheat systems can also be assessed on the basis of this standard. One appropriate procedure for that purpose is to calculate the temperature level of the domestic hot water withdrawn from the thermal solar system for the reference conditions defined in this standard by using the numerical system model and the thermal solar system performance parameters according to ISO 9459-5. Based on the temperature level of the hot water withdrawn from the store the energy consumption of the gas appliance should be determined. This determination can either be done by means of calculations or by performing a test according to EN 13203-2 and using instead of the cold water inlet temperature the hot water temperature withdrawn from the store.

This standard is not intended to assess the performance:

- of the solar collector(s), which should comply with EN 12975-1 and EN 12975-2; and
- thermal solar systems and components, which should comply with EN 12976-1 and EN 12976-2.

This European Standard, EN 13203-3, sets out a method for assessing the energy performance of a solar supported appliance. It defines a number of daily tapping cycles for each domestic hot water use, kitchen, shower, bath and a combination of these, together with corresponding test procedures including information about the available solar radiation. It enables the energy performances of different gas-fired appliances to be compared and matched to the needs of the user.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12975-1, *Thermal solar systems and components — Solar collectors — Part 1: General requirements*

EN 12975-2, *Thermal solar systems and components — Solar collectors — Part 2: Test methods*

EN 12976-1, *Thermal solar systems and components — Factory made systems — Part 1: General requirements*

EN 12976-2:2006, *Thermal solar systems and components — Factory made systems — Part 2: Test methods*

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-