



NSAI
Standards

Irish Standard
I.S. EN 13278:2013

Open fronted gas-fired independent space heaters

© CEN 2013

No copying without NSAI permission except as permitted by copyright law.

I.S. EN 13278:2013

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.

This document replaces:

EN 13278:2003

This document is based on:

EN 13278:2013

EN 13278:2003

Published:

5 November, 2013

9 May, 2003

This document was published
under the authority of the NSAI
and comes into effect on:

5 November, 2013

ICS number:

97.100.20

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

EUROPEAN STANDARD

EN 13278

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2013

ICS 97.100.20

Supersedes EN 13278:2003

English Version

Open fronted gas-fired independent space heaters

Appareils de chauffage indépendants à foyer ouvert
utilisant les combustibles gazeux

Konvektions-Raumheizer für gasförmige Brennstoffe mit
offener Verbrennungskammer

This European Standard was approved by CEN on 8 August 2013.

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, 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: Avenue Marnix 17, B-1000 Brussels

Contents

	Page
Foreword.....	6
1 Scope	7
2 Normative references	8
3 Terms and definitions	9
3.1 open fronted gas-fired independent space heaters	9
3.2 gases	9
3.3 appliance construction	11
3.3.1 the gas circuit.....	11
3.3.2 burner.....	12
3.3.3 combustion products circuit	12
3.3.4 auxiliary equipment	13
3.4 adjusters and controls	14
3.5 appliance performance	15
3.5.1 gas rates	15
3.5.2 gas combustion	15
3.6 marking of the appliance and packaging	17
4 Classification of appliances	17
4.1 Classification according to the nature of the gases used (categories)	17
4.1.1 Classification of gases	17
4.1.2 Appliance categories.....	17
4.2 Classification according to the method of evacuation of the products of combustion.....	18
5 Constructional requirements.....	18
5.1 General.....	18
5.1.1 Conversion to different gases	18
5.1.2 Materials and method of construction	19
5.1.3 Accessibility for use and maintenance	20
5.1.4 Connections	21
5.1.5 Soundness of the gas circuit.....	21
5.1.6 Soundness of the combustion circuit (Type B₁ appliances).....	21
5.1.7 Evacuation of combustion products	22
5.1.8 Electrical equipment.....	22
5.1.9 Safety in the event of interruption and restoration of the auxiliary energy	23
5.1.10 Guarding	23
5.2 Adjusting, control and safety devices	23
5.2.1 General.....	23
5.2.2 Gas rate adjusters.....	23
5.2.3 Shut-off valves	24
5.2.4 Flame supervision devices	25
5.2.5 Pressure regulators	25
5.2.6 Automatic burner control system	25
5.2.7 Thermostats	25
5.2.8 Spillage monitoring system.....	25
5.3 Ignition devices.....	26
5.3.1 General.....	26
5.3.2 Ignition burners.....	26
5.4 Evacuation of flue gases (Type B₁₄ appliances only)	26
5.5 Flame supervision systems (Appliances with automatic burner systems only)	27
5.6 Ignition burner or start-gas flame establishment.....	27
5.6.1 Appliances with non-automatic burner systems.....	27
5.6.2 Appliances with automatic burner systems	27
5.7 Main flame establishment	27
5.7.1 General.....	27

5.7.2	Appliances with non-automatic burner systems	27
5.7.3	Appliances with automatic burner systems	27
5.7.4	Direct establishment of the main flame.....	28
5.8	Burners	28
5.8.1	General.....	28
5.8.2	Pan burners	28
5.9	Motors and fans	28
	Fan to assist in the evacuation of flue gases	28
5.10	Pressure test points	28
5.11	Additional requirements for appliances where a fan is supplied for outdoor installation and is fitted to assist the evacuation of flue gases	29
5.11.1	General.....	29
5.11.2	Access panels and doors	29
5.11.3	Dimensions of openings	29
5.11.4	Fixing screws	29
6	Operational requirements	29
6.1	General.....	29
6.2	Soundness	29
6.2.1	Soundness of the gas circuit	29
6.2.2	Soundness of the combustion products circuit and correct evacuation of combustion products	29
6.2.3	Escape of unburnt gas	30
6.3	Heat inputs	30
6.3.1	Nominal heat input	30
6.3.2	Start gas heat input	30
6.3.3	Reduced rate	30
6.4	Temperature of various parts of the appliance	30
6.4.1	Temperature of external parts of the appliance	30
6.4.2	Temperature of components	30
6.4.3	Temperature of floor, shelf and walls.....	31
6.5	Ignition, cross-lighting and flame stability	31
6.5.1	Ignition and cross-lighting (for all appliances)	31
6.5.2	Flame stability.....	31
6.5.3	Fluctuation of auxiliary energy	32
6.6	Pressure regulators	32
6.7	Combustion	32
6.7.1	CO concentration for all appliances	32
6.7.2	Measurement of oxides of nitrogen, NO _x , (all appliances)	32
6.8	Sooting.....	32
6.8.1	Cold condition.....	32
6.8.2	Hot condition.....	33
6.8.3	Long cycle condition.....	33
6.9	Spillage monitoring system	33
6.9.1	Atmosphere sensing device (type B _{11AS} , and, B _{14AS} appliances only)	33
6.9.2	Combustion products discharge safety device (type B _{11BS} , and B _{14BS} appliances only)	33
6.10	Flame supervision device	34
6.10.1	Thermoelectric device	34
6.10.2	Automatic burner control system	34
6.11	Flue gas monitoring device (For Type B ₁₄ appliances only)	34
6.11.1	General.....	34
6.11.2	Voltage reduction	34
6.11.3	Restricted flue	34
6.12	Efficiency	34
7	Test methods	35
7.1	General.....	35
7.1.1	Characteristics of test gases: reference and limit gases	35
7.1.2	General test conditions.....	35
7.1.3	Practical application of test gases.....	36
7.1.4	Test pressures	37
7.2	Soundness	38
7.2.1	Soundness of the gas circuit	38

7.2.2	Soundness of the combustion products circuit and correct evacuation of combustion products.....	39
7.2.3	Escape of unburnt gas	41
7.3	Heat inputs	41
7.3.1	Nominal heat input.....	41
7.3.2	Calibrated injector rate of appliances without gas adjusters or where these adjusters are put out of action	43
7.3.3	Performance of gas rate adjusters for unregulated appliances	43
7.3.4	Start-gas heat input.....	43
7.3.5	Reduced rate	43
7.4	Temperature of various parts of the appliance	43
7.4.1	General.....	43
7.4.2	Temperature of external parts of the appliance	43
7.4.3	Temperature of components	44
7.4.4	Temperature of floor, shelf and walls.....	44
7.5	Ignition, cross-lighting and flame stability	45
7.5.1	Ignition and cross-lighting.....	45
7.5.2	Flame stability	46
7.6	Pressure regulators	47
7.6.1	Operational pressure regulator.....	47
7.6.2	Pressure regulator out of service	48
7.7	Combustion	48
7.7.1	General.....	48
7.7.2	Tests under limit conditions	49
7.7.3	Supplementary tests under special conditions.....	50
7.7.4	Measurement of oxides of nitrogen (all appliances).....	51
7.8	Sooting.....	52
7.8.1	General.....	52
7.8.2	Determination of the smoke number	52
7.8.3	Test conditions	52
7.9	Spillage monitoring system.....	53
7.9.1	General.....	53
7.9.2	Atmosphere sensing device (type B _{11AS} and B _{14AS} appliances only)	53
7.9.3	Combustion products discharge safety device (type B _{11BS} and B _{14BS} appliances).....	54
7.10	Flame supervision device	55
7.10.1	Thermoelectric device	55
7.10.2	Automatic burner control systems	55
7.11	Flue gas monitoring device (for Type B ₁₄ appliances only)	55
7.11.1	General.....	55
7.11.2	Voltage reduction.....	56
7.11.3	Restricted flue	56
7.12	Efficiency	56
7.12.1	Installation and supply to appliances	56
7.12.2	Determination of efficiency.....	56
8	Marking and instructions	58
8.1	General.....	58
8.2	Marking	58
8.2.1	Marking of the appliance.....	58
8.2.2	Spillage test label.....	59
8.2.3	Other marking	59
8.2.4	Warning labels	59
8.2.5	Marking of the packaging	59
8.2.6	Utilisation of symbols on the appliance and packaging.....	60
8.3	Instructions	61
8.3.1	General.....	61
8.3.2	Technical instructions for installation and adjustment	61
8.3.3	Instructions for use and maintenance	63
8.3.4	Additional information	64
A	Annex A (informative) National situations	77
A.1	General.....	77
A.2	Categories listed in the body of the standard marketed in the different countries	77

A.3 Appliance supply pressures.....	80
A.4 Special categories marketed nationally or locally	81
A.5 Test gases for the special gases distributed nationally or locally	83
A.6 Gas connections in the various countries	85
A.7 Flue connections (see 5.1.7).....	87
Annex B (normative) Equivalence rules	88
B.1 Conversion to categories within a restricted Wobbe Index range	88
B.2 Conversion to categories within an identical Wobbe Index range.....	88
B.3 Conversion of categories within a wider Wobbe Index range	89
Annex C (informative) Gas valve arrangements	90
Annex D (informative) Means of identification of the types of gas in force in the various countries	91
Annex E (normative) Apparatus for the determination of the smoke number	93
E.1 Pump	93
E.2 Sampling tube	93
E.3 Filter paper	93
E.4 Grey scale.....	93
Annex F (informative) Symbols and abbreviations	94
Annex G (normative) Special national conditions	95
G.1 Belgium.....	95
Annex H (normative) Calculation of conversions of NOx.....	96
Annex I (normative) Dress guards	97
I.1 Scope	97
I.2 Requirements	97
I.3 Tests.....	97
Annex J (informative) A-deviations	100
J.1 A-deviations	100
Annex K (informative) Main technical changes compared to the edition of 2003	101
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2009/142/EC	103
Bibliography.....	105

Foreword

This document (EN 13278:2013) has been prepared by Technical Committee CEN/TC 62 "Independent gas-fired space heaters", the secretariat of which is held by BSI.

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 April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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.

This document supersedes EN 13278:2003.

Annex K provides details of significant technical changes between this European Standard and EN 13278:2003.

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, which is an integral part of this document.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements and test methods for the construction, safety, marking and rational use of energy of open fronted gas-fired independent space heaters with and without a fan to assist with the transportation of flue gases, hereafter referred to as appliances. Although the fan may be mounted outdoors, this standard only covers appliances where the body of the appliance is indoors.

This standard applies to types B_{11AS}, B_{11BS}, B_{14AS}, and B_{14BS} (commonly referred to in this standard as type B₁ appliances) open fronted gas-fired independent space heating appliances:

- that incorporate an atmospheric burner;
- that are connected directly to an open flue (see Figure 1), or to a device to evacuate the products of combustion (open-flued appliances);
- that have a nominal heat input not exceeding 20 kW (based on the net calorific value);
- that are delivered with the gas-carrying components, burner(s), combustion chamber and heat exchanger fully assembled.

It does not apply to:

- closed-fronted appliances;
- decorative fuel effect appliances as specified in EN 509;
- catalytic combustion appliances;
- ducted-air appliances;
- appliances installed by means of a closure plate (see 3.3.3.3).



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