

Irish Standard I.S. EN 16678:2015

Safety and control devices for gas burners and gas burning appliances - Automatic shutoff valves for operating pressure of above 500 kPa up to and including 6 300 kPa

© CEN 2015 No copying without NSAI permission except as permitted by copyright law.

I.S. EN 16678:2015

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/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:

Published:

EN 16678:2015 2015-11-18

This document was published

ICS number:

under the authority of the NSAI and comes into effect on:

23.060.40

2015-12-06

NOTE: If blank see CEN/CENELEC cover page

NSAI T +353 1 807 3800 Sales:

 1 Swift Square,
 F +353 1 807 3838
 T +353 1 857 6730

 Northwood, Santry
 E standards@nsai.ie
 F +353 1 857 6729

 Dublin 9
 W NSAI.ie
 W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

National Foreword

I.S. EN 16678:2015 is the adopted Irish version of the European Document EN 16678:2015, Safety and control devices for gas burners and gas burning appliances - Automatic shut-off valves for operating pressure of above 500 kPa up to and including 6 300 kPa

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This is a free page sample. Access the full version online.

This page is intentionally left blank

EUROPEAN STANDARD

EN 16678

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 23.060.40

English Version

Safety and control devices for gas burners and gas burning appliances - Automatic shut-off valves for operating pressure of above 500 kPa up to and including 6 300 kPa

Équipements auxiliaires pour brûleurs à gaz et appareils à gaz - Robinets automatiques de sectionnement pour pression de service supérieure à 500 kPa et inférieure ou égale à 6 300 kPa Sicherheits- und Regeleinrichtungen für Gasbrenner und Gasbrennstoffgeräte - Automatische Absperrventile für einen Betriebsdruck über 500 kPa his einschließlich 6 300 kPa

This European Standard was approved by CEN on 19 September 2015.

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
European foreword	6
1 Scope	7
Normative references	7
3 Terms and definitions	
4 Classification	
4.1 Classes of control	9
4.2 Groups of control	
4.3 Classes of control functions	
5 Units of measurement and test conditions	10
6 Construction requirements	10
6.1 General	10
6.2 Mechanical parts of the control	
6.2.1 Appearance	10
6.2.2 Holes	
6.2.3 Breather holes	10
6.2.4 Test for leakage of breather holes	10
6.2.5 Screwed fastenings	10
6.2.6 Jointing	11
6.2.7 Moving parts	11
6.2.8 Sealing caps	11
6.2.9 Dismantling and reassembly	11
6.2.101 Closed position indicator switch	11
6.2.102 Valve with modulating control	
6.2.103 Other controls assembled to a valve	11
6.2.104 Balanced valves	
6.2.105 Additional requirements for shut-off function	
6.3 Materials	
6.3.1 General material requirements	
6.3.2 Housing	
6.3.3 Test for leakage of housing after removal of non-metallic part	s 12
6.3.4 Zinc alloys	
6.3.5 Springs providing closing and/or sealing force	
6.3.6 Resistance to corrosion and surface protection	
6.3.7 Impregnation	
6.3.8 Seals for glands for moving parts	
6.3.101 Closure members	
6.3.102 Parts transmitting the closing force	
6.3.103 Balanced valves	
6.3.104 Bellows	
6.3.105 Resistance to pressure	
6.4 Gas connections	
6.4.1 Making connections	
6.4.2 Connection sizes	
6.4.3 Threads	
6.4.4 Union joints	

6.4.5	Flanges	14
6.4.6	Compression fittings	
6.4.7	Nipples for pressure test	14
6.4.8	Strainers	14
6.4.10	1 Welded connections	14
6.5	Electrical parts of the control	14
6.5.1	General	
6.5.2	Switching elements	
6.5.3	Electrical components	
6.6	Protection against internal faults for the purpose of functional safety	
6.6.1	Design and construction requirements	
6.6.2	Class A	
6.6.3	Class B	
6.6.4	Class C	
6.6.5	Circuit and construction evaluation	
	Pneumatic and hydraulic actuating mechanisms	
7	Performance	
7.1	General	
7.2	Leak-tightness	
7.3	Test for leak-tightness	
7.4	Torsion and bending	
7.5	Torsion and bending tests	
7.6	Rated flow rate	
7.7	Test for rated flow rate	
7.8	Durability	
7.8.1	Elastomers in contact with gas	
7.8.2	Marking	
7.8.3	Tests for marking	
7.8.4	Resistance to scratching	
7.8.5	Scratch test	
7.8.6	Resistance to humidity	
7.8.7	Humidity test	18
7.9	Performance test for electronic controls	
7.10	Long-term performance for electronic controls	
7.101	Closing function concerning remanence	18
7.101 .		
7.101 .	2 Test of closing function	18
7.102	Closing force	19
7.102 .	1 Requirement	19
7.102 .	2 Test of closing force	19
7.103	Delay time and opening time	19
7.103 .	1 Requirement	19
7.103 .	2 Test of delay time and opening time	19
7.104	Closing time	
7.104.	9	
7.104.	•	
-	Sealing force	
7.105.		
7.105.	1	
	Closed position indicator switch	
7.106.	_	
7.106.	1	
	F F	

21 21
21
22
22
22
22
22
22
22
22
22
22
23
24
24
24
25
s countries26
27
28
29
30
and pressure 31
32
33
gas burners and gas
34
ity Level (SIL) 35
e Level (PL) 36
SIL) and Performance 37
rd and the Essential nces burning gaseous 38
rd and the Essential equipment41
43
and pressure gas burners and gas ity Level (SIL) Level (PL) SIL) and Performance rd and the Essential nces burning gaseous

Tables

This is a free page sample. Access the full version online. I.S. EN 16678:2015

EN 16678:2015 (E)

Table 1 — Minimum value of safety factor F1	3
Table 2 — Test method and acceptance criteria referred to the properties of elastomeric materials1	7
Table 3 — Sealing force requirements2	0
Table 4 — Operating cycles2	2
Table ZA.1 — Correspondence between this European Standard and Directive 2009/142/EC relating tappliances burning gaseous fuels3	
Table ZB.1 — Correspondence between this European Standard and Directive 97/23/EC relating t pressure equipment4	
Figures Figure 1 — Typical pilot and release valve application	9

European foreword

This document (EN 16678:2015) has been prepared by Technical Committee CEN/TC 58 "Safety and control devices for burners and appliances burning gaseous or liquid fuels", 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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

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 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 Directives 2009/142/EC and 97/23/EC.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are an integral part of this document.

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, 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 safety, design, construction and performance requirements and testing for automatic shut-off valves with or without modulating control functions (hereafter referred to as 'valves') for burners and appliances burning one or more gaseous fuels according to EN 437:2003+A1:2009.

This European Standard is applicable to valves with declared maximum inlet pressures of more than 500 kPa (5 bar) and up to and including 6 300 kPa (63 bar).

This European Standard is applicable to

- electrically operated valves and to valves actuated by fluids including the pilot valves for these fluids if actuated electrically and including release valves, but not to any external electrical devices for switching the actuating energy;
- automatic shut-off valves where the flow rate is controlled by external electrical signals proportional to the applied signal.

This European Standard is not applicable to valves specifically designed for use in transmission and distribution networks.

NOTE Provisions for final product inspection and testing by the manufacturer are not specified.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 161:2011+A3:2013, Automatic shut-off valves for gas burners and gas appliances

EN 549:1994, Rubber materials for seals and diaphragms for gas appliances and gas equipment

EN 682:2002, Elastomeric Seals — Materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids

EN 1092-1:2007+A1:2013, Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges

EN 1092-2:1997, Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges

EN 1092-3:2003, Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 3: Copper alloy flanges

EN 1092-4:2002, Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 4: Aluminium alloy flanges

EN 1759-1:2004, Flanges and their joint — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS 1/2 to 24

EN 1759-3:2003, Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 3: Copper alloy flanges



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

Product Page

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation