



NSAI
Standards

Irish Standard
I.S. EN 50156-2:2015

Electrical equipment for furnaces and ancillary equipment - Part 2: Requirements for design, development and type approval of safety devices and subsystems

I.S. EN 50156-2:2015

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:

EN 50156-2:2015

Published:

2015-07-17

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

2015-08-04

ICS number:

NOTE: If blank see CEN/CENELEC cover page

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 50156-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2015

ICS 27.060.01

English Version

Electrical equipment for furnaces and ancillary equipment - Part 2: Requirements for design, development and type approval of safety devices and subsystems

Equipements électriques d'installation de chaudière - Partie
2: Règles pour la dessin, développement et essai de type d'
élément sécurité et sous-système

Elektrische Ausrüstung von Feuerungsanlagen - Teil 2:
Bestimmungen für den Entwurf, die Entwicklung und die
Baumusterprüfung von Sicherheitsbauteilen und
Teilsystemen

This European Standard was approved by CENELEC on 2015-01-26. CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

| | |
|--|-----------|
| European foreword..... | 3 |
| Introduction..... | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 6 |
| 4 Requirements for safety devices and subsystems of safety-related systems | 6 |
| 4.1 General | 6 |
| 4.2 Requirements for safety devices and subsystems in electrical/electronic/ programmable electronic systems | 7 |
| 4.2.1 General | 7 |
| 4.2.2 Type approval in accordance with product standards | 7 |
| 4.2.3 Type approval following the requirements of EN 61508 | 7 |
| 4.3 Requirements for safety devices and subsystems of other technologies | 8 |
| 4.3.1 General | 8 |
| 4.3.2 Type approval by product standards | 8 |
| 4.3.3 Type approval by fault assessment..... | 8 |
| 4.3.4 Quality assurance..... | 9 |
| 4.3.5 Quantification | 9 |
| 4.3.6 Recurring functional testing | 9 |
| 4.3.7 Operating instructions | 10 |
| Annex A (normative) Proven in use for subsystems and devices of other technologies | 11 |
| Annex B (informative) Aspects with influence on functional safety | 13 |
| Annex C (informative) Summary of the characteristic data for use of a subsystem or device in safety-related systems | 14 |
| C.1 Classification of the product..... | 14 |
| C.2 Characteristic data according to EN 61508, Parts 1 to 7:..... | 14 |
| C.2.1 Data for use of the product as a subsystem or device in safety functions..... | 14 |
| C.2.2 Additional data for use of the product as a component in safety functions..... | 14 |
| Bibliography | 16 |

European foreword

This document (EN 50156-2:2015) has been prepared by CLC/BTTF 132-2 "Revision of EN 50156 'Electrical equipment for furnaces and ancillary equipment'".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2016-01-26
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2018-01-26

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

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

This European Standard is the second part of a series of European Standards that specify the requirements for equipment of safety functions for furnaces, especially safety related systems to protect personnel, the furnace with ancillary equipment against hazards related to heat generation, the heated system and to operate reliably during normal conditions, and abnormal conditions that can be foreseen.

EN 50156, *Electrical equipment for furnaces and ancillary equipment*, consists of the following parts:

- Part 1: Requirements for application design and installation;
- Part 2: Requirements for design, development and type approval of safety devices and subsystems;
- Part 3: Requirements for plant-specific tests of safety-related equipment ¹⁾.

This European Standard is based on EN 61508:2010, *Functional safety – Safety-related systems*, Parts 1 to 7 as a basic safety standard.

1) In preparation.

EN 50156-2:2015 (E)

Introduction

This part of EN 50156 sets out the requirements and recommendations for design, development and type approval of safety devices and subsystems to be applied to protect personnel, property and environment against the hazards of furnaces with ancillary equipment and the systems heated by the thermal energy released in the furnace. The operating conditions of the furnace, the hazards of combustion and the safety of the heated system are considered.

The safety requirements for all stages of the life-cycle of a particular plant, proof of fulfilment of the plant-specific safety-requirements, are defined in Part 1 of EN 50156. The requirements for plant specific tests during implementation, operation and maintenance are defined in Part 3 of EN 50156.

The requirements for the application of safety-related systems are specified in EN 50156-1:2015, Clause 10. The rating of necessary safety integrity levels, as specified in EN 50156-1:2015, 10.4, is based on EN 61508-1.

For the plant-specific implementation of safety-related systems, it is necessary to organize management of functional safety and to satisfy safety life-cycle requirements.

1 Scope

This part of EN 50156 applies to the requirements for design, development and approval of safety-relevant equipment for the safety related system for furnaces that are operated with solid, liquid or gaseous fuels and their ancillary equipment.

This part of EN 50156 specifies the requirements for safety-related equipment that is necessary to meet the safety conditions of furnaces, to reduce the hazards of combustion and to protect the heated systems from damage e.g. by overheating. Subsystems and devices of other technologies, which are part of the safety-related system (see EN 50156-1:2015, 3.38), are covered by this part of EN 50156.

This part of EN 50156 sets out special requirements for design, development and approval of safety devices and subsystems to satisfy the requirements of EN 50156-1:2015, Clause 10 "Additional requirements for the application of a safety-related system".

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 267:2009+A1:2011, *Automatic forced draught burners for liquid fuels*

EN 298:2012, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*

EN 676:2003+A2:2008, *Automatic forced draught burners for gaseous fuels*

EN 1643:2014, *Safety and control devices for gas burners and gas burning appliances - Valve proving systems for automatic shut-off valves*

EN 1854:2010, *Pressure sensing devices for gas burners and gas burning appliances*

EN 12067-2:2004, *Gas/air ratio controls for gas burners and gas burning appliances - Part 2: Electronic types*

EN 12952-11:2007, *Water-tube boilers and auxiliary installations - Part 11: Requirements for limiting devices of the boiler and accessories*

EN 12953-9:2007, *Shell boilers - Part 9: Requirements for limiting devices of the boiler and accessories*

EN 13611:2007+A2:2011, *Safety and control devices for gas burners and gas burning appliances - General requirements*

EN 16340:2014, *Safety and control devices for burners and appliances burning gaseous or liquid fuels - Combustion product sensing devices*

EN 50156-1:2015, *Electrical equipment for furnaces and ancillary equipment – Part 1: Requirements for application design and installation*

EN 60730-1:2011, *Automatic electrical controls for household and similar use - Part 1: General requirements (IEC 60730-1:2010)*

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
-