



NSAI
Standards

Irish Standard
I.S. EN 13637:2015

Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods

I.S. EN 13637:2015

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 13637:2015

Published:

2015-06-10

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

2015-07-02

ICS number:

91.190

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 13637

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2015

ICS 91.190

English Version

Building hardware - Electrically controlled exit systems for use on escape routes - Requirements and test methods

Quicaillerie pour le bâtiment - Systèmes de fermeture
contrôlés électriquement destinés à être utilisés sur des
voies d'évacuation - Exigences et méthodes d'essai

Schlösser und Baubeschläge - Elektrisch gesteuerte
Fluchttüranlagen für Türen in Fluchtwegen - Anforderungen
und Prüfverfahren

This European Standard was approved by CEN on 7 May 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

Foreword	6
Introduction	7
1 Scope	8
2 Normative references	9
3 Terms and definitions	10
4 Requirements	13
4.1 General	13
4.1.1 Compliance	13
4.1.2 Association between components	13
4.1.3 Access level	14
4.2 Ability to release (for doors on escape routes)	14
4.2.1 Number of operations to release	14
4.2.2 Operation of initiating element	14
4.2.3 Input signal from an alarm system	15
4.2.4 Resetting conditions	15
4.2.5 Operating element	16
4.2.6 Fail safe function and reliability of liaison and transmission paths	17
4.2.7 Release force - Door not under pressure	19
4.2.8 Release force - Door under pressure	19
4.2.9 Release from the Initiating element	19
4.2.10 Release after power supply failure	19
4.2.11 Dimensional and design	20
4.2.12 Door mass and door dimensions	22
4.2.13 Keepers	23
4.2.14 Initiating element with cover	23
4.2.15 Finger trapping	23
4.2.16 Pictogram	23
4.2.17 Time delay	24
4.2.18 Central Management Control	25
4.2.19 Outside access device	30
4.2.20 Security requirements	30
4.3 Self-closing ability C (for fire/smoke doors)	31
4.4 Suitability for use on fire and smoke doors	32
4.5 Control of Dangerous substances	33
4.6 Durability of ability to release (against ageing and degradation for doors on escape routes)	33
4.6.1 General	33
4.6.2 Abuse resistance of electrical locking element	34
4.6.3 Abuse resistance of initiating element	34
4.6.4 Abuse resistance of electrically lockable operating element	34
4.6.5 Environmental requirements - Temperature range requirement	34
4.6.6 Environmental requirements - Corrosion resistance requirement	35
4.6.7 Environmental requirements - Dry Heat resistance requirement	35
4.6.8 Environmental requirements - Cold resistance requirement	35
4.6.9 Environmental requirements - Damp heat cyclic (12h + 12h) resistance requirement	36
4.6.10 Environmental requirements - Impact resistance requirement	36
4.6.11 Environmental requirements - Rated voltage requirements	38
4.6.12 Electrical hazards safety requirements (Low voltage)	39

4.6.13	Environmental requirements - Electromagnetic compatibility (EMC) requirements and/or Radio and telecommunication terminal equipment (R&TTE)	39
4.6.14	Environmental requirements – IP Protection against solid foreign objects and ingress of water and dust	41
4.7	Durability of self-closing ability C against ageing and degradation (for fire/smoke doors)	41
5	Testing, assessment and sampling methods	42
5.1	General	42
5.1.1	Test methods	42
5.1.2	Test apparatus	43
5.1.3	Procedures	44
5.2	Tests for Ability to Release	44
5.2.1	Test for number of operations to release	44
5.2.2	Test for operation of initiating element	45
5.2.3	Release function test - Input signal from the Alarm system such as an alarm system (sample A)	45
5.2.4	Tests for resetting conditions	47
5.2.5	Test for operating element	47
5.2.6	Test of fail safe function and failure of liaison and transmission paths, and release force test of initiating element (Sample A)	47
5.2.7	Release force test - Door not under pressure (Sample A)	48
5.2.8	Release force test - Door under pressure (Sample A)	49
5.2.9	Release from the Initiating element	50
5.2.10	Release tests after power supply failure (Sample A)	50
5.2.11	Verification of dimensions and design	50
5.2.12	Verification of Door mass and door dimensions	50
5.2.13	Verification of keepers	51
5.2.14	Verification of Initiating element with cover	51
5.2.15	Test for finger trapping	51
5.2.16	Verification of pictograms	51
5.2.17	Release test according to time delay (Sample A)	51
5.2.18	Central Management Control Tests	53
5.2.19	Outside Access Device	60
5.2.20	Security tests (Sample A)	60
5.3	Tests for self-closing ability C (Sample A)	62
5.4	Tests for Suitability for use on fire and smoke doors (Samples D and E)	63
5.5	Control of Dangerous substances	63
5.6	Tests for the Durability of ability to release and ability to self-closing (Sample A)	63
5.6.1	General	63
5.6.2	Abuse resistance test of electrical locking element	64
5.6.3	Abuse resistance test of initiating element	64
5.6.4	Abuse resistance of electrically lockable operating element	65
5.6.5	Temperature test (Sample B)	66
5.6.6	Corrosion test (Sample B)	66
5.6.7	Dry heat test (Sample B)	67
5.6.8	Cold test (Sample B)	68
5.6.9	Damp heat cyclic test (12h + 12h) (Sample B)	68
5.6.10	Impact test (Sample B)	69
5.6.11	Supply voltage variations test (Sample B)	71
5.6.12	Electrical hazards safety tests (Sample B)	72
5.6.13	Electromagnetic compatibility (EMC) tests (Sample B)	72
5.6.14	(IP)Protection against solid foreign objects and ingress of water and dust test (Sample B)	72
5.7	Tests for the Durability of ability to self-closing (Sample A)	72
6	Assessment and verification of constancy of performance - AVCP	73
6.1	General	73

EN 13637:2015 (E)

6.2	Type testing	73
6.2.1	General	73
6.2.2	Test samples, testing and compliance criteria	74
6.2.3	Test reports	74
6.3	Factory production control (FPC)	74
6.3.1	General	74
6.3.2	Requirements	75
6.3.3	Product specific requirements	80
6.3.4	Initial inspection of factory and of FPC	81
6.3.5	Continuous surveillance of FPC	81
6.3.6	Procedure for modifications	82
7	Classification and designation	82
7.1	General	82
7.2	Classification system	82
7.2.1	General	82
7.2.2	Category of use (1st character)	82
7.2.3	Durability (2nd character)	82
7.2.4	Door mass (3rd character)	82
7.2.5	Suitability for use on fire/smoke doors (4th character)	83
7.2.6	Safety (5th character)	83
7.2.7	Corrosion resistance, humidity and IP protection (6th character)	83
7.2.8	Security/Holding force – from outside (7th character)	84
7.2.9	Security/Holding force – from inside (8th character)	84
7.2.10	Time delay (9th character)	85
7.2.11	Denied exit mode (10th character)	85
7.2.12	Configuration (11th character)	85
7.3	Example of classification	85
8	Marking, labelling and packaging	86
8.1	On the product	86
8.2	On the packaging	86
8.3	On the installation instructions	87
Annex A	(informative) Information supplied with the product	88
A.1	General	88
A.2	Product information	89
A.3	Installation and fixing instructions	90
A.3.1	Fixing arrangements	90
A.3.2	Information and installation guidance	90
A.4	Installation compliance report form	93
A.5	Maintenance instructions	96
A.6	Routine site inspection report form	96
Annex B	(normative) Test sequences with different samples	98
Annex C	(informative) Guidance for choosing relevant product standards for particular exit door applications	100
Annex D	(informative) Access levels, Installation and maintenance	102
D.1	Access levels	102
D.1.1	Definitions	102
D.1.2	Access levels for typical operations on the electrically controlled exit system	103
D.1.3	Installation	103

D.1.4	Maintenance	104
D.2	Advantages/disadvantages of panic and emergency exit devices and systems.....	104
D.2.1	Design of operating elements.....	104
D.2.2	Design of outside access device.....	104
D.2.3	Low operating forces.....	104
D.2.4	Bottom vertical rods and projecting floor sockets.....	105
D.2.5	Automatic locking	105
D.2.6	Dogging mechanism.....	105
D.2.7	Electrically controlled functions	105
D.2.8	Projection of the exit device	105
D.2.9	Recognition of operating element.....	106
D.3	Operating forces declared by the manufacturer.....	106
D.3.1	General.....	106
D.3.2	Performance assessment	106
D.3.3	Test methods - Operating tests under side load	106
D.3.4	Manufacturer's declaration	107
Annex E	(informative) Functional diagrams.....	108
E.1	Functional diagrams of typical electrically controlled exit systems	108
E.2	Logic diagram for modes of exit system operation	109
Annex F	(informative) Examples of configurations and description of exit systems	110
F.1	Configuration of exit system	110
F.2	Description of exit systems	113
F.3	Door configurations.....	114
Annex ZA	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Regulation	115
ZA.1	Scope and relevant characteristics.....	115
ZA.2	Procedure for AVCP of Electrically controlled exit systems.....	117
ZA.2.1	System of AVCP	117
ZA.2.2	Declaration of performance (DoP).....	118
ZA.2.2.1	General	118
ZA.2.2.2	Content	118
ZA.2.3	Example of DoP.....	119
ZA.3	CE marking and labelling	123

EN 13637:2015 (E)

Foreword

This document (EN 13637:2015) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, the secretariat of which is held by AFNOR.

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 December 2015, and conflicting national standards shall be withdrawn at the latest by March 2017.

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.

This European Standard is part of a group of Standards dedicated to building hardware products. It is one of a group of standards for exit devices and electrically controlled exit systems developed by Technical Committee CEN/TC 33.

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

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.

Introduction

Experience relating to fire and/or smoke hazards and general safety has made it desirable that doors in circulation areas, or those that have to be operated in an emergency situation, be fitted with exit devices.

Increasingly, such exit devices may form a part of the security system of a building and involve the use of electrical locking and controlling elements. This standard provides common European Standard requirements for such electrically controlled exit systems.

This standard offers, in addition to safety, increased security to avoid unsafe means of locking the door, for example additional padlocks and chains.

The performance requirements contained in this European Standard give safe and effective escape through a doorway with a **maximum of two operations** to release the electrically controlled exit system, although this might require prior knowledge of the number of operations (e.g. initiating and/or operating element), and of the door situation (e.g. inwardly opening).

This standard introduces the concept of time delayed exit and denied exit mode, as a means of increasing the security of the building against unauthorised exit, and the concept of central management control. It is the responsibility of the regulatory authorities in each member country to decide whether or not such control methods can be allowed, and if so, to what extent within the limits stated in the standard.

It is intended that the requirements of this standard should apply at all times, regardless of whether or not the building is occupied. For safety reasons, any additional features of the system, such as access control, are required to maintain the principle of fail safe release at all times.

The performance tests incorporated in this standard are considered to be reproducible and, as such, will provide a consistent and objective assessment of the performance of these electrically controlled exit systems throughout CEN Members.

EN 13637:2015 (E)

1 Scope

This European Standard specifies requirements for performance and testing of electrically controlled exit systems, specifically designed for use in an emergency or panic situation on escape routes.

This European Standard covers electrically controlled exit systems that are either manufactured and placed on the market in their entirety by one manufacturer or assembled from sub-assemblies produced by more than one manufacturer and subsequently placed on the market as a kit in a single transaction.

These electrically controlled exit systems consist of at least the following elements, separated or combined:

- **initiating element** for requesting the release of electrical locking element in order to exit;
- **electrical locking element** for securing an exit door;
- **electrical controlling element** for supplying, connecting and controlling electrical locking element and initiating element;
- in addition, these electrically controlled exit systems can include **time delay and/or denied exit mode**.

The Products covered by this standard are intended to be used for doors on escape routes, on either fire or non-fire rated door assemblies.

Examples of Products covered by this European Standard:

- electrically controlled exit systems designed to be used in emergency situations, where people are familiar with the exit and its hardware;
- electrically controlled exit systems designed to be used in panic situations, where people are not always familiar with the exit and its hardware;
- electrically controlled exit systems for use on hinged or pivoted door leaves only;
- a range of electrically controlled exit systems including those for use on double doorsets;
- the exceptional case of electrically controlled exit systems intended for use on single leaf inwardly opening exit doors. It is assumed throughout this European Standard that exit doors generally open towards the outside in order to ensure safe escape. However, there are cases such as hospital or hotel bedroom doors, classroom doors, etc. where building authorities allow, by way of exception, the exit door to open against the direction of exit;

Products not covered by this European Standard:

- any particular design of electrically controlled exit systems and only such dimensions as are required for safety reasons are specified;
- any other element of a security system, other than those directly involved in the control of an exit door;
- mechanically operated exit devices containing electrical functions that are not related to release of an electrically locking element. Such devices are within the field of EN 1125 or EN 179;
- electrically controlled exit systems intended for use on inwardly opening double doorsets.

Electrically controlled exit systems intended for use by the severely disabled; due to the wide range of disabilities, such exit systems and their performances should be agreed between specifier and manufacturer.

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 179, *Building hardware - Emergency exit devices operated by a lever handle or push pad, for use on escape routes - Requirements and test methods*

EN 1125, *Building hardware - Panic exit devices operated by a horizontal bar, for use on escape routes - Requirements and test methods*

EN 1670, *Building hardware - Corrosion resistance - Requirements and test methods*

EN 1634-1, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 1634-2, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware - Part 2: Fire resistance characterisation test for elements of building hardware*

EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware - Part 3: Smoke control test for door and shutter assemblies*

EN 55022, *Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (CISPR 22)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61000-3-2, *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase) (IEC 61000-3-2)*

EN 61000-3-3, *Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection (IEC 61000-3-3)*

EN 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test (IEC 61000-4-2)*

EN 61000-4-11, *Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11)*

EN 61000-6-2, *Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments (IEC 61000-6-2)*

EN 61000-6-3, *Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3)*

EN 60068-2-1: 2007, *Environmental testing - Part 2-1: Tests - Test A: Cold (IEC 60068-2-1:2007)*

EN 60068-2-2: 2007, *Environmental testing - Part 2-2: Tests - Test B: Dry heat (IEC 60068-2-2:2007)*

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
-