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June 1999

ICS

English version

Building hardware - Electrically controlled panic exit systems - Requirements and test methods

Quincaillerie pour le bâtiment - Systèmes de fermeture anti-panique pour issues de secours contrôlés électriquement - Prescriptions et méthodes d'essai

Schlösser und Baubeschläge - Elektrisch gesteuerte Paniktürverschlüsse - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

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Foreword

This document has been prepared by CEN /TC 33, "Doors, windows, shutters, building hardware and curtain walling".

This document is currently submitted to the CEN Enquiry.

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 89/106/EEC.

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 European Standards dedicated to building hardware products.

This standard is one of a group of European Standards for exit devices developed by Technical Committee CEN/TC33.

Normative and informative annexes to this standard are indicated in the contents.

Introduction

Experience relating to escape from buildings and general safety have made it desirable that doors at exits in public buildings, places of public entertainment, shops etc. be fitted with panic devices operated by a horizontal bar to common European Standard specifications.

Increasingly, such panic devices form a part of the security system of a building and involve the use of electrical locking and controlling elements.

This standard provides specifications for such **Electrically controlled panic exit systems (PES)**.

In terms of the Construction Products Directive (89/106/EEC) (CPD), the essential requirements of this standard are to give safe and effective escape through a doorway with minimum effort and without prior knowledge of the device.

In a panic situation, a group of people will react differently from an individual. When two or more people are rushing to an escape door, probably in darkness and/or smoke, it is possible that the first one to reach the door will not necessarily operate the panic exit system, but may push the surface of the door (door under pressure) while other people will be trying to operate the horizontal bar by hand or body pressure.

In this standard priority is given to the panic operation rather than pressure and resistance to the door opening from seals, weather stripping, multiple bolt heads etc. Precedence is given to the importance of ease of opening by the young, elderly and infirm. Electrically controlled systems may allow easier operation for this group of people.

Whilst external security will be provided by the devices covered in this standard, the main objective is to enable a door to be opened at all times by hand or body pressure along its inside face on the panic exit system and not requiring the use of a key or any other object. Electrically controlled systems may allow higher security from the outside while still maintaining the requirements of a panic exit device.

For devices intended for use where panic situations are unlikely to develop, reference may be made to standard covering emergency devices operated by a lever handle or a push pad (see EN 179) or electrically controlled emergency exit systems (see WI 0033244), as shown in Annex G.

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 devices throughout CEN Member States.

1 Scope

This European Standard specifies requirements for the manufacture, performance and testing of **Electrically controlled panic exit systems (PES) operated by a horizontal bar as an initiating element, specifically designed for use in a panic situation.**

These systems consist of the following elements:

a) **electrical locking element (EL)** for securing an panic exit door;

b) **initiating element (IE)** for initiating the release of electrical locking element in order to exit;

c) **electrical controlling element (EC)** for supplying, connecting and controlling EL and IE.

This European Standard does not cover any other element of a security system, other than those directly involved in the control of a panic exit.

It does not specify any particular design of devices and only such dimensions as are required to satisfy the Essential Requirements of the CPD are specified.

Panic exit systems covered by this European Standard are for use on hinged or pivoted door leaves, not exceeding 200 kg in mass, 2 500 mm in height and 1 300 mm in width. The requirements of this standard also apply to PES for doors exceeding these values by the use of a specific test door.

The suitability of a panic exit system for use on fire/smoke door assemblies is determined by fire performance tests conducted in addition to the performance tests required by this European Standard. Annex B indicates additional requirements for these products.

This European Standard does not cover electrically controlled emergency exit systems (see WI 0033244).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 179:1997, *Building hardware - Emergency exit devices operated by a lever handle or a push pad – Requirements ant test methods*

EN 1125:1997, *Building hardware - Panic exit devices operated by a horizontal bar – Requirements ant test methods*

EN 1670:1998, *Building hardware - Corrosion Resistance – Requirement and tests methods*

PrEN (WI 0033244), *Building hardware - Electrically controlled emergency exit systems – Requirement and tests methods.*

EN 45001:1989, *General criteria for the operation of testing laboratories*

EN 50081-1:1992, *Electromagnetic compatibility – Generic emission standard – Part 1: Residential, commercial and light industry*

EN 50081-2:1993, *Electromagnetic compatibility – Generic emission standard – Part 2: Industrial environment*

EN 50082-1:1992, *Electromagnetic compatibility – Generic immunity standard – Part 1: Residential, commercial and light industry*

EN 50082-2:1995, *Electromagnetic compatibility – Generic immunity standard – Part 2: Industrial environment*

EN 60068-2-1:1993, *Environmental testing – Part 2: Tests – Tests A: Cold*

EN 60068-2-2:1993, *Basic environmental testing procedures – Part 2: Tests – Tests B: Dry heat*

EN 60068-2-63:1994, *Basic environmental testing procedures – Part 2: Tests – Tests B: Dry heat*

EN 60950:1992, *Safety of information technology equipment, including electrical business equipment*

EN 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test – Basic EMC publication*

IEC 68-2-30:1980, *Basic environmental testing procedures – Test methods – Test Db and guidance: Damp heat, cyclic (12 + 12 – hour cycle)*

3 Definitions and diagrams

3.1 Definitions

For the purpose of this standard, the following definitions apply:

3.1.1
exit device
A mechanically operated device intended for panic exit function or emergency exit function

3.1.1.1
panic exit device
A mechanism for use where panic situations are foreseen, and consisting of a bolt head(s) which engage(s) with a keeper(s) in the surrounding door frame or floor for securing a door when closed. The bolt head(s) can be released by the bar positioned horizontally across the inside face of the door when it is moved anywhere along its effective length in the direction of travel and/or in an arc downwards (see EN 1125).

3.1.1.2
emergency exit device
A mechanism for use where panic situations are not foreseen, and consisting of a bolt head(s) which engage(s) with a keeper(s) in the surrounding door frame or floor for securing a door when closed. The bolt head(s) can be released by the lever handle or the push pad positioned on the inside face of the door when it is moved in a downward direction or in the direction of exit (see EN 179).

3.1.2
electrically controlled exit systems
An electrically controlled system intended for panic exit function or emergency exit function.

3.1.2.1
electrically controlled panic exit system (PES
A system for use where panic situations are foreseen which enables the electrical control of emergency exit doors by means of electrical locking elements (EL), initiating element (IE) and electrical controlling elements (EC). These separate elements may be inter-connected or may be combined in various assemblies, to provide the required system functions.

3.1.2.2
electrically controlled emergency exit system (EES)
A system for use where panic situations are not foreseen which enables the electrical control of emergency exit doors by means of electrical locking elements (EL), requesting element (RE) and electrical controlling elements (EC). These separate elements may be inter-connected or may be combined in various assemblies, to provide the required system functions (see WI 0033244).

3.1.3
initiating element (IE)
A manually initiated element of a PES that provides an electrical signal to enable an EL to release the door. An IE may be incorporated into a mechanically operated horizontal bar which complies with EN 1125.

3.1.4
electrically locking element (EL)
An electrically operated element of a PES that maintains the door in secured condition. These elements may be electromagnetic, electromechanical or motorised in their operation, and may be incorporated in an initiating element.

3.1.5
electrical controlling element (EC)
An element of a PES which supplies, connects and controls EL and IE. An EC may contain power supplies, selection switches, detection and alarm components and wiring, etc.

3.1.6
bar
The horizontal part of an initiating element of a panic exit system which, when activated, will release the locking element. Activation may be by pushing, touching or sensing.

3.1.7
manual
The operation or initiation of an action, at least by hand or body, and including the option of proximity sensing.

3.1.8
rated supply voltage
The nominal voltage for which the device is intended.

3.1.9
to release
To remove a locking influence, such as disconnecting an electromagnet, withdrawing the bolt of a lock, etc. such that a door may be opened.

3.1.10
immediate release
A time of one second (1 s) or less to release the EL.

3.2 Diagrams

3.2.1 Functional diagrams of typical electrically controlled panic exit systems

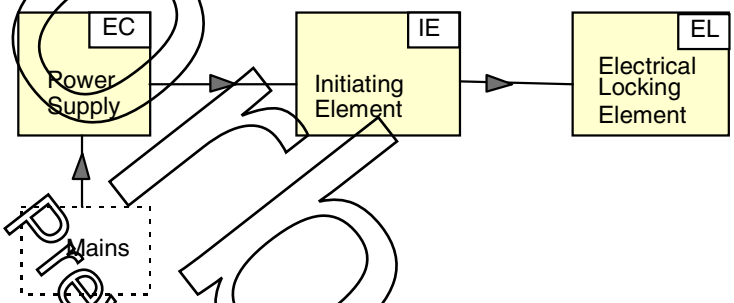

Figure 1 — PES with minimum functions

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