



SLOVENSKI STANDARD
SIST EN 179:2000

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Building hardware - Emergency exit devices operated by a lever handle or push pad -
Requirements and test methods

Schlösser und Baubeschläge - Notausgangverschlüsse mit Drücker oder Stoßplatte -
Anforderungen und Prüfverfahren

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Quincaillerie pour le bâtiment - Fermetures d'urgence pour issues de secours
manoeuvrées par une béquille ou une plaque de poussée - Prescriptions et méthodes
d'essai

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EUROPEAN STANDARD

EN 179

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August 1997

ICS 91.190

Descriptors: hardware, closures, safety devices, emergency exits, personnel evacuation, accident prevention, definitions, design, specifications, performance tests, mechanical tests, safety, corrosion resistance, fire resistance, classifications, marking, installation

English version

**Building hardware - Emergency exit devices
operated by a lever handle or push pad -
Requirements and test methods**

Quincaillerie pour le bâtiment - Fermetures
d'urgence pour issues de secours manoeuvrées
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Schlösser und Baubeschläge -
Notausgangsverschlüsse mit Drücker oder
Stoßplatte - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 1997-04-26. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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CEN

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 33 "Doors, windows, shutters and building hardware", the secretariat of which is held by AFNOR.

A full contribution to the preparation of this standard has been made by the European manufacturer's organisation "ARGE".

This European Standard is part of a group of Standards dedicated to building hardware products.

This European Standard is one of a group of standards for exit devices to be developed by Technical Committee CEN/TC 33.

For relationship with this EU Directive, see informative annex ZA which is an integral part of this European Standard.

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

Informative annex A gives recommendations for installation and fixing of emergency devices.

In order to avoid potentially dangerous confusion in the market, CEN Central Secretariat allocated separate unrelated reference numbers to exit devices standards. Consequently, this European Standard becomes EN 179 instead of EN 1125-2 and EN 1125-1 becomes EN 1125.

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 February 1998, and conflicting national standards shall be withdrawn at the latest by February 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

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

The main purpose of the performance requirements contained in this European Standard are to give safe and effective escape through a doorway with one single operation to release the device, although this can require prior knowledge of its operation.

This European Standard deals with emergency devices designed to be used in emergency situations, where people are familiar with the emergency exit and its hardware and therefore a panic situation is most unlikely to develop.

Where panic situations are foreseen, reference should be made to EN 1125, covering panic devices operated by a horizontal bar.

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.

1 Scope

This European Standard specifies requirements for the manufacture, performance and testing of emergency devices mechanically operated by either a lever handle or a push pad, for use where a panic situation is unlikely to arise.

The European Standard does not specify any particular design of emergency device and only such dimensions as are required for safety reasons are specified.

This European Standard does not cover specific devices intended for use by the severely disabled. Due to the wide range of disabilities, such devices and their performances should be agreed between specifier and manufacturer.

Emergency devices covered by this European Standard are for use on hinged or pivoted door leaves only, not exceeding 200 kg in mass, 2 500 mm in height and 1 300 mm in width.

This European Standard covers two specific designs of emergency devices : those designed for use on single leaf doors only, and those specifically designed for use on single leaf doors and/or double doorsets.

This European Standard covers two specific types of operation : Emergency devices with "lever handle" operation, type A (see 3.9, figures 1 and 3) and emergency devices with "push pad" operation, type B (see 3.15, figures 2 and 4).

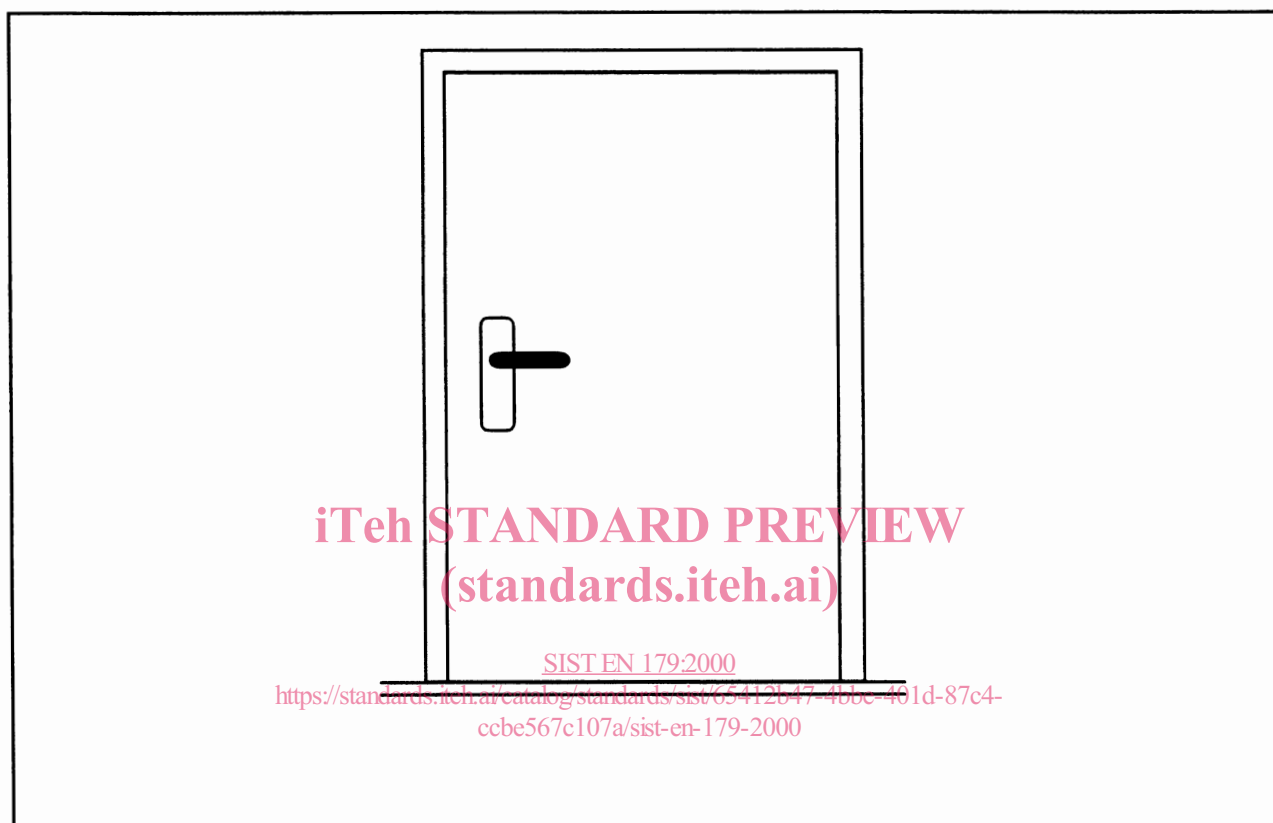


Figure 1 : Type A emergency device

This European Standard covers two categories of devices projection in order to maximize the width of the escape route and minimize the projection from the door face where either or both of these criteria are of importance (see 4.1.13).

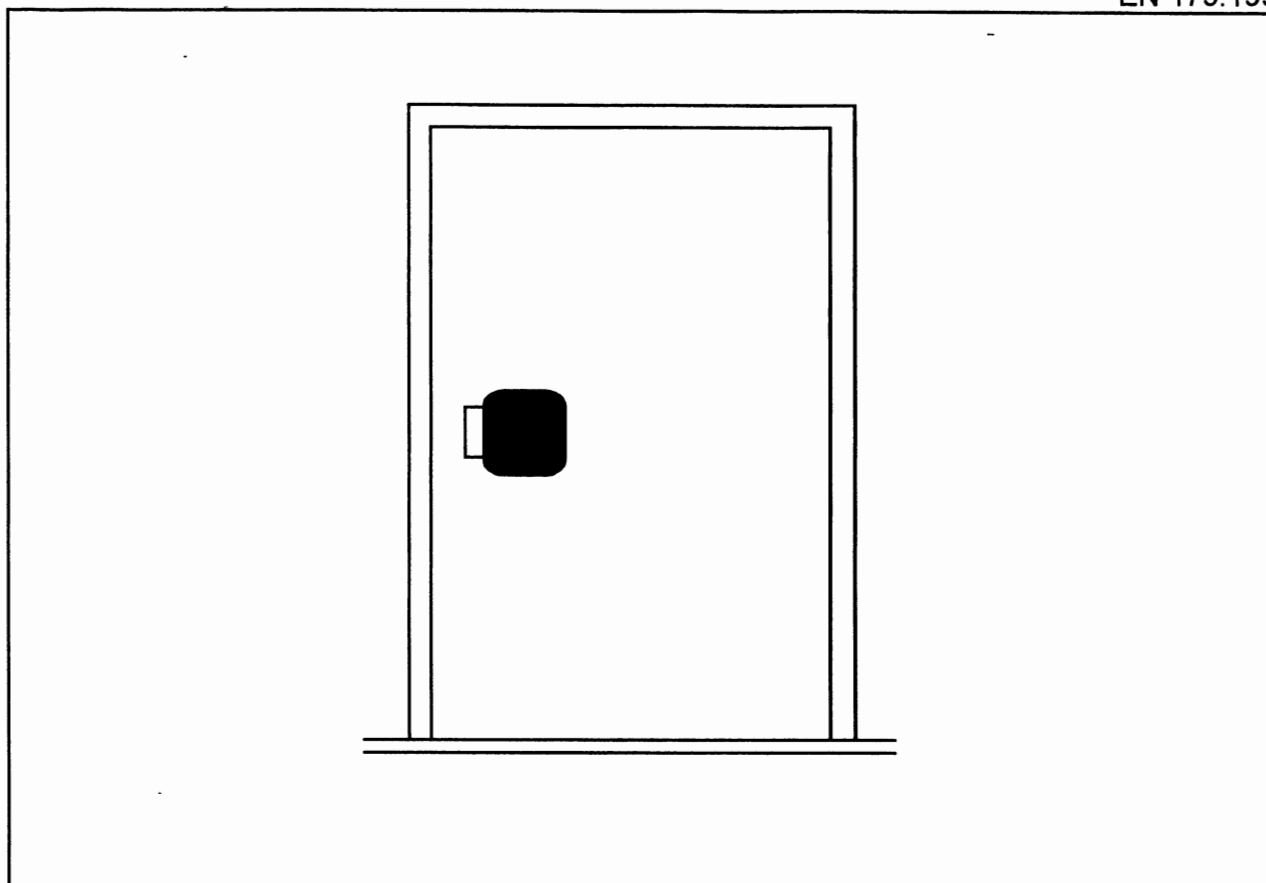


Figure 2 : Type B emergency device

The suitability of an emergency device 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 panic devices operated by a horizontal bar (see EN 1125), or electrically controlled panic and emergency exit systems, standards for which are presently being developed (see annex E).

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 1125 | Building hardware - Panic exit devices operated by a horizontal bar - Requirements and test methods. |
| prEN 1670 | Building hardware - Corrosion resistance of hardware for doors, windows, shutters and curtain walling - Requirements and test methods. |
| EN 45001 | General criteria for the operation of testing laboratories. |

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

3.1 active leaf

The first opening and last closing leaf of a rebated single swing double doorset.

3.2 automatic relatching device

A device to enable the automatic securing of an emergency device in the closed position, after it has been operated.

3.3 bolt head

The portion of an emergency device which engages with the keeper to secure the door in the closed position.

3.4 dogging mechanism

A mechanism fitted to an emergency device for holding the bolt head(s) in the withdrawn position until manually reset.

3.5 door

A door, window, casement door, hatch or panel, hinged or pivoted in the vertical or near vertical plane.

3.6 inactive leaf

The last opening and first closing leaf of a rebated single swing double doorset.

3.7 inside

The face of the door on which the lever handle or push pad for operating an emergency device is situated.

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3.8 keeper

A socket or other fitting with which the bolt head(s) engages.

3.9 lever handle

A rotatable operating element whose axis of rotation is perpendicular to the face of the door and which operates the emergency device mechanism in order to release the bolt head(s) (see figure 3).

3.10 manufacturer

The organization under whose name the emergency device is approved to this European Standard.

3.11 outside

The face of the door opposite to the face on which the lever handle or push pad for operating the emergency device is situated.

3.12 outside access device

A mechanism for opening an emergency exit device from the outside.

3.13 operating element

Abbreviation for lever handle or push pad.

3.14 double doorset

An assembly consisting of two hinged or pivoted leaves within a single frame. The meeting stiles can be either plain or rebated.

3.15 push-pad

An operating element of an emergency device which, when pushed in the direction of exit, operates the emergency device mechanism in order to release the bolt head(s) (see figure 4).

3.16 release force

The force applied to the operating element, necessary to withdraw the bolt head(s) from the keeper(s).

3.17 vertical rod

The extension of the bolt head of an emergency device which links it to the operating element via the operating mechanism.

3.18 panic device

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A mechanism 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.

3.19 emergency device

A mechanism 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.

3.20 double doorset device

An emergency device designed for use on the leaves of double doorsets, such that the operation of either operating element will release at least the door leaf to which it is fitted.

4 Requirements

4.1 Design requirements

4.1.1 An emergency device shall be designed to release a door from the inside in less than 1 s, by one single hand operation, not requiring the use of a key or other similar object.

Regardless of any auxiliary locking and/or unlocking means being incorporated, the operating element shall enable exit from the inside at all times.

4.1.2 The release operation of an emergency device shall not be opposed to the direction of exit.

4.1.3 Lever handle operated emergency devices shall be designed to release following a movement of the lever handle in a downward direction, or in a downward direction towards the hinges.

4.1.4 Push pad operated emergency devices shall be designed to release following a movement of the push pad in the direction of exit and/or in an arc downwards or to the side.

4.1.5 Emergency devices shall be designed to automatically return to their secured position and be ready for re-use after being actuated.

4.1.6 The corrosion resistance shall be at least grade 3 in accordance with prEN 1670. The latter is fulfilled if the test 6.2.4 is satisfactory.

4.1.7 An emergency device shall have all arrises and exposed corners likely to cause injury to persons using the exit rounded to a radius of not less than 0,5 mm.

4.1.8 Material selected in the design of an emergency device shall be suitable for the operation of the emergency device between temperatures of -20°C and $+100^{\circ}\text{C}$.

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4.1.9 The design of an emergency device shall be such that it will allow the door to swing freely in the direction of exit once the door has been released.

4.1.10 Protection shall be provided for any part of the door or frame that could be damaged by the device during the cycle of the door.

4.1.11 The design of an emergency device shall be such that the operating element can be installed at 150 mm or less (dimension Z) from the leading edge of the door when the door is in the closed position (see figures 3 and 4).

4.1.12 Lever handles shall be designed to have a minimum length (dimension X) of 120 mm, measured from the axis of rotation to the free end (see figure 3).

4.1.13 No part of an emergency device, when the door is in any position, shall project (dimension W) from the face of the door more than :

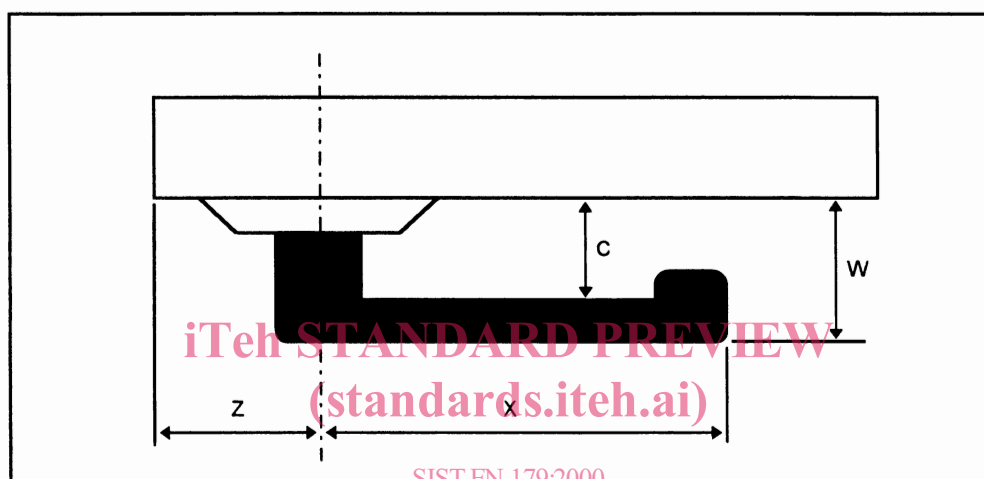
- category 1 : projection up to 150 mm (standard projection) ;
- category 2 : projection up to 100 mm (low projection).

See figures 3 and 4 for illustration of dimension W (projection).

NOTE : Categories 1 and 2 apply to both type A and type B operation.

4.1.14 With the emergency device secured, the width of the operating element (dimension V) shall be not less than 18 mm (see figure 5).

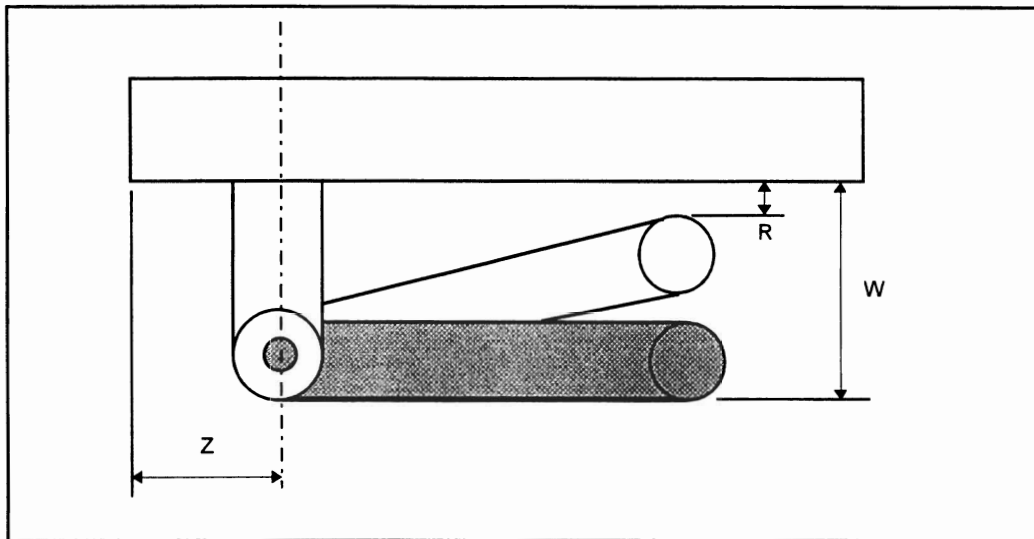
4.1.15 The free end of a lever handle shall be designed to minimize the risk of injury by pointing toward the face of the door.



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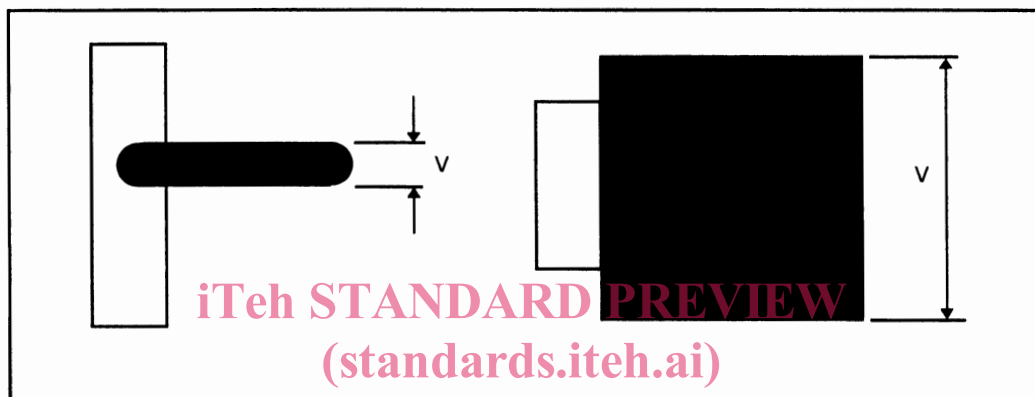
C is the minimum free space between the lever and the door face ;
W is the maximum projection ;
X is the minimum length ;
Z is the distance from the leading edge of the door.

Figure 3 : Type A emergency device



R is the gap between the push pad and the door face ;
W is the maximum projection ;
Z is the distance from the leading edge of the door.

Figure 4 : Type B emergency device



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V is the width of the operating element.

Figure 5 : Width of operating element

4.1.16 Lever handles shall be designed to allow a minimum free space of 30 mm (dimension C) between the lever and the door face to allow sufficient room for hand operation (see figure 3).

4.1.17 The gap between a push pad and the door face shall be not less than 25 mm (dimension R) at any position of push pad travel to reduce the risk of trapped fingers (see figure 4).