SLOVENSKI STANDARD
SIST EN 1125:1998

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Ključ avnice in stavbno okovje - Zapore za vrata reġitve - 1. del: Protipaniļ ne zapore z vodoravnim pritisnim drogom - Zahteve in postopki preskuġanja

Building hardware - Panic exit devices operated by a horizontal bar - Requirements and test methods

Schlösser und Baubeschläge - Paniktürverschlüsse mit horizontaler Betätigungsstange - Anforderungen und Prüfverfahren

Quincaillerie pour le bâtiment - Fermetures anti-panique pour issues de secours manoeuvrées par une barre horizontale - Prescriptions et méthodes d'essai

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English version

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CEN

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

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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 European Standard has been made by the European manufacturer's organisation "ARGE".

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/TC 33.

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

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

Informative annex A gives recommendations for installation and fixing of panic 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 1125 instead of EN 1125-1 and EN 1125-2 becomes EN 179.

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.

The main purpose of the performance requirements contained in 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 device, but can 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 (see figure 1).

Whilst reasonable 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 device and not requiring the use of a key or any other object.

In this standard priority is given to the panic operation rather than pressure and resistance to the door opening from seals, weatherstripping, multiple bolt heads etc. Precedence is given to the importance of ease of opening by the young, elderly and infirm.

Where emergency exit devices are required for situations in which people are familiar with the use of the door hardware in their surroundings, and a panic situation is unlikely to develop, reference can be made to EN 179, covering other exit devices.

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.

Figure 1 : A panic situation

1 Scope

This European Standard specifies requirements for the manufacture, performance and testing of panic devices mechanically operated by either a horizontal push-bar or a horizontal touch-bar specifically designed for use in a panic situation.

This European Standard does not specify any particular design of panic 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.

Panic devices covered by this European Standard are for use on hinged or pivotted 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 panic 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 horizontal bar operation : panic devices with "push-bar", type A (see 3.17 and figure 2) and panic devices with "touch-bar", type B (see 3.19 and figure 3).

This European Standard covers two categories of device 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 4.1.10).

The suitability of a panic 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 emergency exit devices operated by a lever handle or push-pad (see EN 179) or electrically controlled panic or 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 179	Building hardware - Emergency exit devices operated by a lever handle or push pad - 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.

3 Definitions

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 a panic device in the closed position, after it has been operated.

3.3 bar

The horizontal part of a panic device which, when pushed, will operate the mechanism.

3.4 bolt head

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

3.5 dogging mechanism

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

3.6 door

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

3.7 effective length of bar

The length of the bar (dimension X) including any member to which the bar is fixed and which will itself yield to hand or body pressure thereby causing the panic device mechanism to operate (see figure 4).

3.8 effective width of door opening

The unobstructed width of the inside face of the door leaf (dimension Y) when the door is in the secured position (see figure 4).

3.9 inactive leaf

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

3.10 inside

The face of the door on which the bar for operating a panic device is situated.

3.11 keeper

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

3.12 manufacturer

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

3.13 outside

The face of the door opposite to the face on which the bar for operating the panic device is situated.

3.14 outside access device

A mechanism for opening a panic device from the outside.

3.15 double doorset

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

3.16 panic 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 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 figures 2 and 3).

3.17 push-bar

The activating horizontal bar of a panic device (type A), designed to be fixed between pivoted support brackets that operates in the direction of exit and/or in an arc downwards (see figure 2).

3.18 release force

The force applied to the bar in a direction perpendicular to the door face, necessary to withdraw the bolt head(s) from the keeper(s).

3.19 touch-bar

The activating horizontal bar of a panic device (type B), designed to be part of a chassis or other mounting assembly, that operates in the direction of exit (see figure 3).

3.20 vertical rod

The extension of the bolt head of a panic device which links it to the bar via the operating mechanism.

3.21 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.

3.22 double doorset device

A panic device designed for use on the leaves of double doorsets, such that the operation of either bar will release at least the door leaf to which it is fitted.

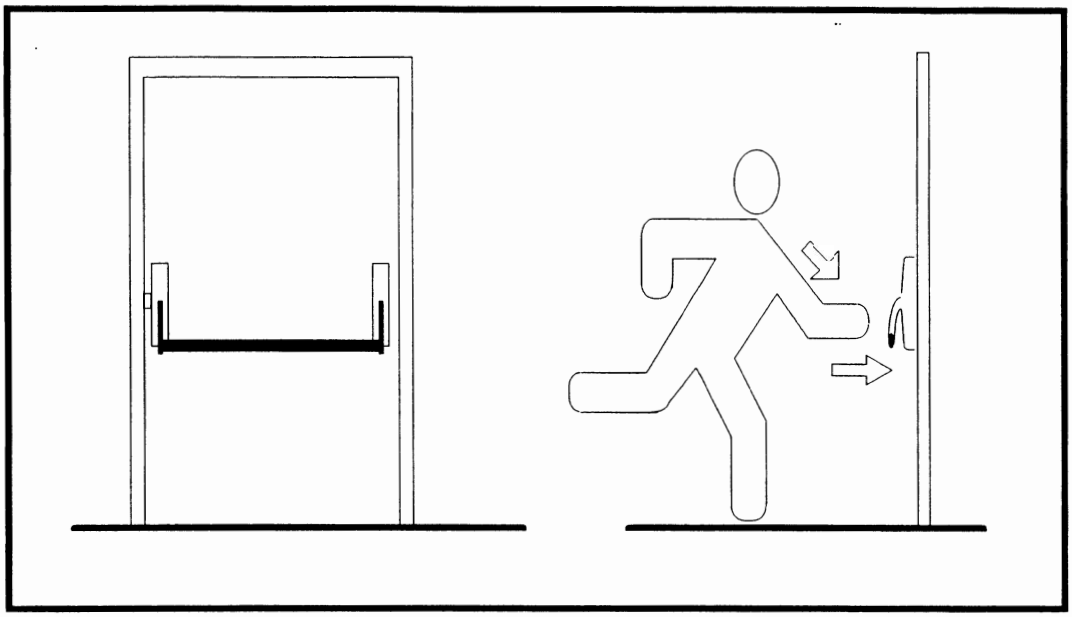


Figure 2 : Type A panic device

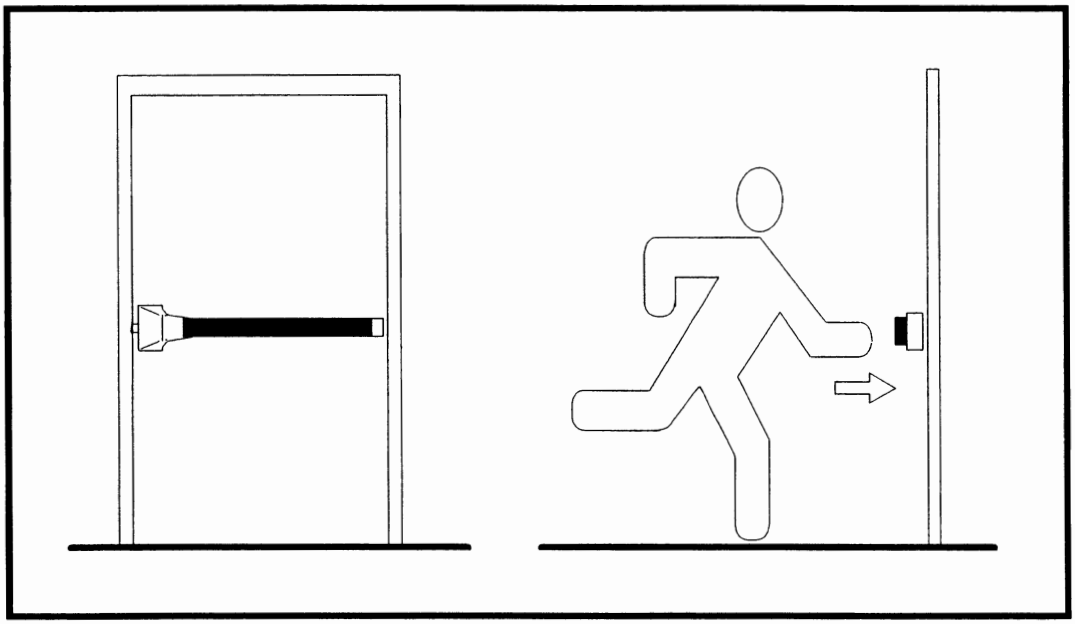


Figure 3 : Type B panic device

4 Requirements

4.1 Design requirements

4.1.1 A panic device shall be designed to release the door, when the bar positioned horizontally across the inside of the door is operated in one continuous movement in the direction of exit and/or in an arc downwards, anywhere along its effective length and not requiring the use of a key or other similar object. It shall release the door in less than one second from the time at which the bar reaches its fully depressed position.

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

4.1.2 A panic device, with the exception of its bar, shall be designed to be mounted either on the inside face of, or within, a door.

4.1.3 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.

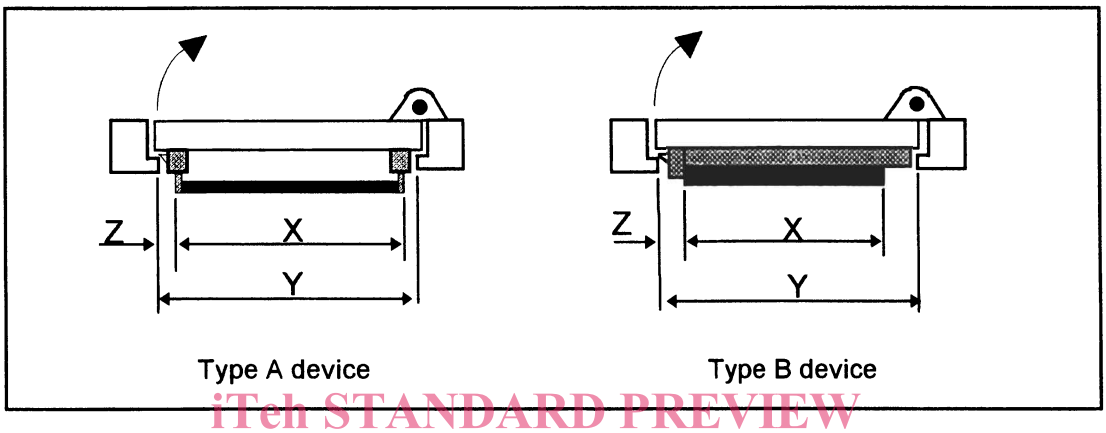
4.1.4 A panic device shall have all arrises and exposed corners likely to cause injury to persons using the exit rounded to a radius of not less than 0,5 mm.

4.1.5 Materials selected in the design of a panic device shall be suitable for the operation of the panic device between the temperature of - 20 °C and + 100 °C.

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

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

4.1.8 The design of a panic device shall be such that the effective bar can be installed at 150 mm (dimension Z) or less from the door stop at the leading edge of the door when the door is in the closed position (see figure 4).



Z is the distance from door jamb ;
X is the effective lenght of bar ;
Y is the effective width of door opening.

Figure 4 : Type A and type B devices

4.1.9 The design of a panic device shall be such that the effective length (dimension X) of the bar shall be as near as possible to the effective width (dimension Y) of the door for which it is recommended, but never less than 60 % (see figure 4).

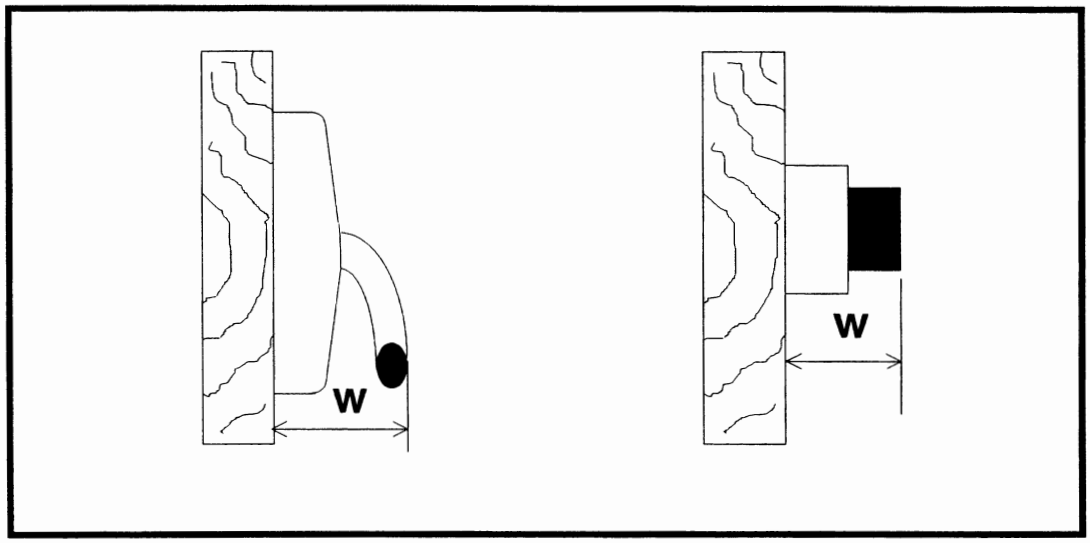
4.1.10 No part of a panic device, when the door is in any position, shall project more than as stated below for each category :

- category 1 : projection up to 150 mm (standard projection) ;

- category 2 : projection up to 100 mm (low projection).

See figure 5 for illustration of dimension W (projection).

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



Type A device Type B device

W is the maximum projection of active bar.

Figure 5 : Overall projection from door force

4.1.11 The push-bar of a type A panic device shall not protrude beyond either of the end support brackets.

4.1.12 With the panic device in the secured position :

- type A panic device : the vertical axis or height (dimension V) of the operating face of the push-bar shall be not less than 18 mm (see figure 6) ;

- type B panic device : the height (dimension V) of the operating face of the touch-bar shall not be less than 18 mm. Where the operational member is situated within the non-operational member, the height (dimension V) of the operating face of the touch-bar shall be at least 60 % of the overall height (dimension U) of the panic device measured anywhere within the effective length of the bar. With the touch-bar fully depressed, the touch-bar face shall not protrude less than 3 mm (dimension T) beyond any non-operable member, and not be less than 25 mm (dimension S) from the face of the door (see figure 7).

4.1.13 The gap between a bar and the door face shall not be less than 25 mm (dimension R) at any position of bar travel to reduce the risk of trapped fingers (see figure 6).

4.1.14 To reduce the risk of trapping fingers and/or the blocking of the panic device, any gap shall not trap a test rod of 10 mm diameter at any position of the bar travel during the operation of the panic device (see figure 8).