
Emergency exit devices

Part 1. Specification for panic bolts and panic latches mechanically operated by a horizontal push-bar

Dispositifs pour issues d'urgence

Partie 1. Spécification des crémones et loquets de sûreté à opération mécanique au moyen d'un barreau-poussoir

Notausgangseinrichtungen

Teil 1. Spezifikation für durch eine waagerechte stoßstange mechanisch betätigte Treibriegel und -klinken

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Foreword

This Part of this British Standard has been prepared under the direction of the Elements and Components (of diverse materials) for Buildings Standards Committee.

Recent legislation relating to fire precautions, safety at work, and regulations to be drawn up thereunder have made it desirable for doors at exits in public buildings, places of public entertainment, stores and the like, to be fitted with devices manufactured to a British Standard specification. The fitting of such a device will ensure easy and rapid opening of doors from inside; yet, when so required, reasonable security against unauthorized entry will be provided.

Since it was not considered possible to embrace in a single standard all the emergency exit devices that might be used,

it was decided to prepare a British Standard in a series of Parts.

This specification for panic bolts and panic latches (the first of the series) results from the experience of manufacturers, users and specifiers in the field of emergency exit devices and is intended to meet the requirements of all enforcing authorities. Panic bolts and panic latches manufactured in accordance with this specification will provide reasonable security outside the door, yet they will always enable the door to be opened from the inside by hand or body pressure without the use of key or handle.

Certification. Attention is drawn to the certification facilities described on the inside back cover of this standard.

British Standard

Emergency exit devices

Part 1. Specification for panic bolts and panic latches mechanically operated by a horizontal push-bar

1. Scope

This British Standard specifies requirements for the materials for, and the performance and testing of panic bolts and panic latches mechanically operated by a horizontal push-bar. The standard does not provide for any particular designs of panic bolt or panic latch and only such dimensions as are required to ensure satisfactory operation are specified. Recommendations concerning installation, maintenance and identification signs and notices are made in appendices B, C and D.

2. References

The titles of the standards publications referred to in this standard are listed on the inside back cover.

3. Definitions

For the purposes of this British Standard the definitions given in BS 3827 : Parts 1 and 2 and BS 4778, together with the following, apply.

- 3.1 anti-thrust device.** A device to prevent a panic bolt head being levered out of its floor socket.
- 3.2 automatic catch.** A device to hold a panic bolt in the withdrawn position after it has been actuated and to release the bolt automatically on closure of the door.
- 3.3 dogging mechanism.** A device fitted to a panic bolt or panic latch for holding the bolt heads in the withdrawn position until reset manually.
- 3.4 door.** A door, window, casement door, hatch or panel pivoted in the vertical or near vertical plane.
- 3.5 door selector (coordinator).** A device designed to permit a pair of doors with rebated meeting stiles to close in the correct sequence.
- 3.6 double panic bolt.** A mechanism consisting of a minimum of two sliding bolt heads that engage with keepers in the surrounding door frame or floor for securing, when closed, a pair of doors with rebated meeting stiles. A bar is positioned horizontally across the inside face of each door. The mechanism can be released by hand or body pressure on either bar.
- 3.7 easyclean socket.** A floor level socket or keeper that is shaped to facilitate easy cleaning.
- 3.8 effective length of push-bar.** The length of the push-bar including where appropriate any member to which the push-bar is fixed and which will itself yield to hand or body pressure thereby causing the panic bolt or panic latch mechanism to operate.
- 3.9 effective width of door opening.** The unobstructed width of the inside face of the door when the door is in the secured position.

3.10 inside. The side of a door on which the push-bar for operating a panic bolt or latch is situated.

3.11 keeper. A socket or box-like fitting into which the bolt heads shoot.

3.12 locking attachment. A mechanism for opening or securing an emergency exit device from the outside without in any way overriding the action of the panic bolt or panic latch from the inside.

3.13 outside. The side of the door opposite to the side on which the push bar for operating the panic bolt or panic latch is situated.

3.14 panic latch. A mechanism for securing a door when closed. The latch bolt can be released by hand or body pressure on a bar positioned horizontally across the inside face of the door.

3.15 rubbing plate. An accessory provided with a double panic bolt which affords protection to the rebate on the meeting stile of the door to which it is fitted.

3.16 single panic bolt. A mechanism consisting of a minimum of two sliding bolt heads that engage with keepers in the surrounding door frame or floor for securing a door when closed. The mechanism can be released by hand or body pressure on a bar positioned horizontally across the inside face of the door.

4. Materials

4.1 All components and finishes shall be manufactured from materials having a melting point of not less than 150 °C. The materials shall comply with the requirements of the appropriate British Standards where such standards exist.

4.2 In the design of panic bolts and panic latches account shall be taken of the coefficient of expansion of materials and other relevant factors so as to ensure that a panic bolt or panic latch remains operable between temperatures of – 20 °C and 100 °C.

4.3 Materials likely to promote electrolytic action shall not be used in direct contact with each other unless suitably protected. Materials likely to corrode under operating conditions shall also be suitably protected.

NOTE. Information on electrolytic corrosion is given in PD 6484.

5. Finishes

When specific finishes are required the following provisions shall apply.

5.1 Electroplated coatings of nickel or chromium shall comply with the requirements of BS 1224.

5.2 Coatings of zinc shall comply with the requirements of BS 729 and BS 1706.



Documents

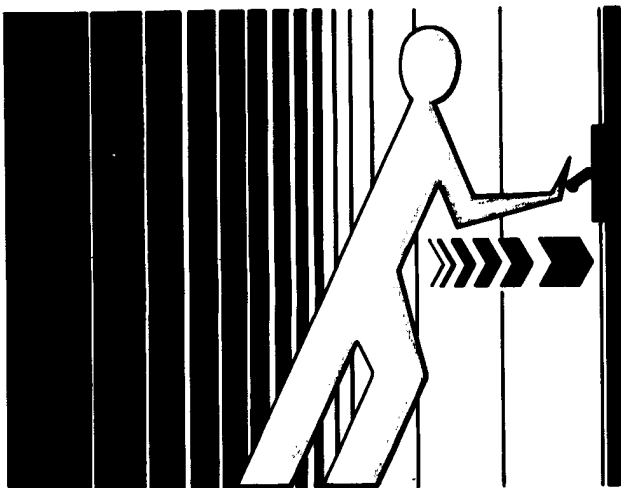
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5.3 Anodizing of aluminium alloys shall comply with the requirements of BS 1615.

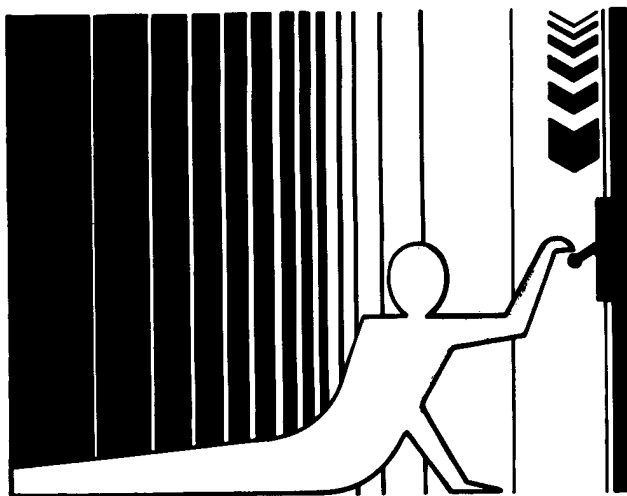
5.4 Any other finish shall comply with the requirements of the appropriate British Standard where one exists.

6. Design

6.1 A panic bolt or panic latch shall be designed to release the door when the bar positioned horizontally across the inside face of the door is pushed, anywhere along its effective length, in the direction of exit and/or moved in an arc downwards (see figure 1).



Horizontal pushing



Vertical pulling

NOTE. This figure is intended solely to be diagrammatic and is not intended to represent any particular design of panic bolt or latch.

Figure 1. Operation of push-bar

This push-bar shall be the sole means provided on the inside face of the door for disengaging the panic bolt or panic latch.

6.2 A single panic bolt shall be designed to secure both a single exit door and each leaf of a pair of exit doors with non-rebated meeting stiles (see figure 2 and figure 3). A double panic bolt shall be designed to fit a pair of doors with rebated meeting stiles with a push-bar fitted to each door and pressure on either push-bar shall operate the panic bolt (see figure 4).

6.3 A panic latch, when designed to be fitted to a single

exit door, shall be designed with a latch bolt which shall engage with an appropriate keeper fitted on the door frame. In the case of a panic latch designed to be fitted to a pair of doors of which one leaf is designated an exit door and is to be fitted with the panic latch, the latch bolt shall engage with an appropriate double door keeper fitted on the opposite door leaf. If both doors are necessary for exit purposes the second leaf shall be secured by a single panic bolt (see figure 5).

6.4 Typical applications of panic bolts and panic latches are illustrated in figures 2 to 6.

NOTE. These figures are intended solely as diagrams and are not intended to represent any particular designs of panic bolt or panic latch.

6.5 A panic bolt or panic latch, with the exception of its push-bar, shall be designed to be mounted either on the face of, or within, a door.

6.6 All parts of a panic bolt or panic latch shall be smooth, guarded and/or designed so as not to catch the clothing of persons using the exit and to minimize the risk of injury particularly to young children.

6.7 Unless a locking attachment has been fitted, no panic bolt or panic latch shall be capable of being operated from the outside.

6.8 Springs shall not be used for assisting the release of panic bolts or panic latches from their keepers.

6.9 Any screw or pin used in the assembly of a panic bolt or panic latch shall be so fixed as to prevent unintentional disengagement.

6.10 Fixings shall be designed to ensure that the loss or failure of any one screw, bolt or other fixing shall not render the panic bolt or panic latch inoperable.

6.11 The design of a panic bolt shall include an automatic catch.

6.12 The design of a panic bolt or panic latch shall include appropriate sockets or keepers for mortice or surface fixing.

6.13 The design of a panic bolt shall include an easyclean floor socket.

6.14 The design of a panic bolt shall include an anti-thrust device.

6.15 Panic latch and panic bolt heads shall be designed to permit them to enter their keepers freely.

6.16 The design of a panic bolt shall provide for the retraction of each bolt head by a minimum of 15 mm.

6.17 The design of a panic bolt shall provide for an appropriate guide or guides to retain the bolt heads in the vertical plane and to reduce the risk of the bolt heads becoming distorted. Where the door exceeds 2 m in height additional bolt guides shall be provided.

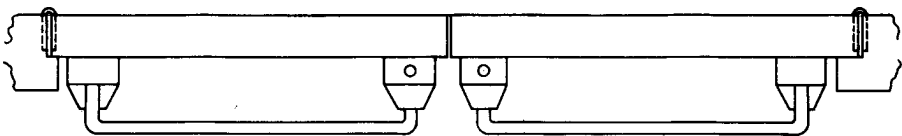
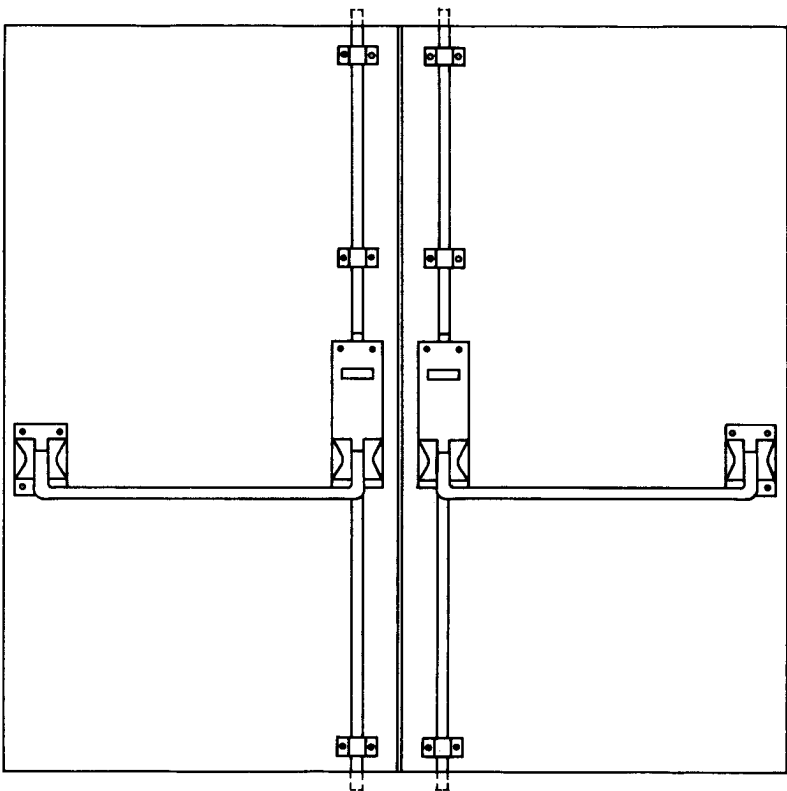
6.18 Provision shall be made for the lubrication, where necessary, of moving parts of the panic bolt or panic latch.

6.19 The design of a double panic bolt shall ensure that pressure on either push-bar releases the panic bolt mechanism.

6.20 The interconnecting device between double panic bolt push-bars shall be designed to obviate incorrect fixing of the device and to ensure its positive and permanent location.

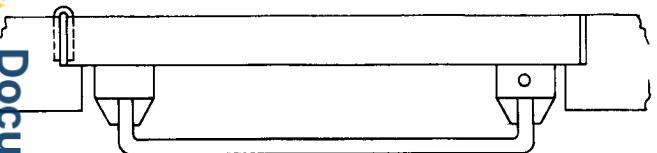
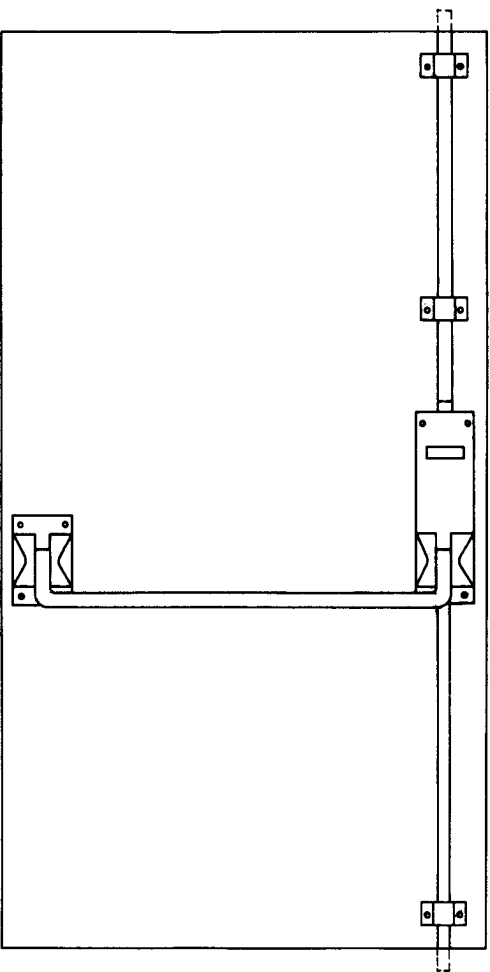
6.21 A suitable rubbing plate shall be provided in the design of double panic bolts.

6.22 The design of a panic bolt or panic latch may include a dogging mechanism.



NOTE. This figure is intended solely to be diagrammatic and is not intended to represent any particular design of panic bolt.

Figure 3. Two single panic bolts



NOTE. This figure is intended solely to be diagrammatic and is not intended to represent any particular design of panic bolt.

Figure 2. Single panic bolt