

Building hardware — Door and window bolts — Requirements and test methods

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British Standard

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National foreword

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- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 18, an inside back cover and a back cover.

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This European Standard was approved by CEN on 5 September 1999.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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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.

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of an identical text or by endorsement, at the latest by April 2000, and conflicting national standards shall be withdrawn at the latest by April 2000.

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.

This European Standard is one of a series of European Standards dedicated to building hardware products.

Test methods are specified in detail to ensure reproducibility at any test establishment within Europe, and acceptance criteria are defined objectively to ensure consistency of assessment. No human intervention tests are included.

Normative annexes (A, B and C) and informative annex (D) to this European Standard are indicated in the contents.

Work is in progress to support the implementation of the European standards by evidence which demonstrates the conformity of the products to the technical requirements set out in those standards.

In order not to delay the publication of the present standard, those conformity assessment criteria related to door and window bolts will be published separately. They will be incorporated in this standard when next revised.

1 Scope

This European Standard specifies performance, security and safety requirements (including test methods) for single point bolts and their associated keeps, used to secure, or increase the security of, doors or windows in buildings; where operation is by lever, knob, slide, pull, etc, or removable implement (but not a multiple differ key) from the protected side of the leaf only. Spring engaging bolts, and bolts with locking facility are included if they are, by definition, bolts (see 3.1.1).

The following types are therefore included:

- barrel bolts, tower bolts;
- foot bolts, drop bolts, square spring bolts, garage door bolts;
- flush bolts (slide, knob, lever or automatic action);
- padlock bolts;

- locking bolts of the type where movement of the shoot is by hand, and action of the lock merely prevents withdrawal¹;
- privacy bolts;
- mortice bolts (operated by removable operating device, or fixed knob, lever etc).

This European Standard does not include Cremone/Espagnolette type bolts; nor does it include bolts used for emergency exit or panic devices.

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 below. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 1670	<i>Building hardware - Corrosion resistance - Requirements and test methods.</i>
prEN 1634-1	<i>Fire resistance test for door and shutter assemblies - Part 1: Fire doors and shutters.</i>
ISO 2336:1980	<i>Hand and machine hacksaw blades - Dimensions for lengths up to 450 mm and pitches up to 6,3 mm</i>

3 Definitions, symbols, and abbreviations

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

3.1.1 bolt: A device for securing, or helping to secure, a door or window in the closed position, comprising a suitably guided moving member, operable from the protected side only by hand or foot, either directly using a knob or slide, or indirectly using a lever/handle or rack and pinion mechanism.

3.1.2 couple: Two equal and opposing linear forces that are parallel to, but not in line with each other.

3.1.3 cycle: The full range of movement from fully locked and secure to fully unlocked; and back to fully locked.

3.1.4 end: load: Load applied to the end of the shoot in the unlocking direction.

3.1.5 keep: The fitting (usually attached to the fixed outer frame or floor) which receives the shoot.

NOTE: For the purposes of this standard only, this term includes a locking plate, staple or socket where they perform the same function.

¹ Where there is a locking facility, the key recognition part of the mechanism is covered by prEN 12209-1 and/or EN 1303 as appropriate.

3.1.6 projection: The distance from the outer edge of the bolt housing to the end of the fully extended shoot, all clearance taken up in the inward direction.

3.1.7 resulting projection: Projection during or after the application of end load.

3.1.8 sawing: Attack method in which a hand-held saw is used in an attempt to cut through the shoot part of the bolt.

3.1.9 shoot: The sliding part of a door or window bolt.

3.2 For the purposes of this standard the symbols detailed in annex A apply.

4 Requirements

4.1 Category of use

Classification is in four grades, where grade 1 is the lowest, as follows:

- grade 1: light duty;
- grade 2: medium duty;
- grade 3: heavy duty;
- grade 4: extra-heavy duty.

When tested in accordance with 5.1, the category of use grading shall be determined by the amount of excess force (abuse) that can be resisted at the normal operating point of the lever, knob, etc, when the shoot is obstructed. Minimum forces for each grade shall be as shown in Table 1.

Table 1

Abuse forces		Grade				Unit
		1	2	3	4	
Linear force on end of exposed ¹ lever, knob etc.	F1(1)	100	200	300	400	N
Linear force on restricted access Thumb slide, lever etc.	F1(2)	50	100	150	200	N
Force applied to extremities of Rotating knob, key etc.	C2	50	100	150	200	N
¹ "Exposed" means at least 10 mm between lever/knob and bolt body, otherwise F1(2) applies.						

4.2 Number of test cycles

Classification is in four grades, where grade 1 is the lowest.

When tested in accordance with 5.2, the product shall complete the following minimum number of cycles:

- grade 1: 2 500 cycles;