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Building hardware - Requirements and test methods - Multipoint locks, latches and locking plates - Characteristics and test methods

Schlösser und Baubeschläge - Mehrfachverriegelungs-Schlösser und Schließbleche - Anforderungen und Prüfverfahren

Quincaillerie pour le batiment - Serrures multipoints et leurs gaches - Prescriptions et méthodes d'essais

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English Version

Building hardware - Requirements and test methods - Multipoint locks, latches and locking plates - Characteristics and test methods

Quincaillerie pour le bâtiment - Serrures multipoints et leurs gâches - Prescriptions et méthodes d'essais

Schlösser und Baubeschläge - Mehrfachverriegelungs-Schlösser und Schließbleche - Anforderungen und Prüfverfahren

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European foreword

This document (EN 15685:2024) has been prepared by Technical Committee CEN/TC 33 “Doors, windows, shutters, building hardware and curtain walling”, 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of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by September 2026.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

No existing standard is superseded.

The performance tests incorporated in this document are considered to be reproducible and as such will provide a consistent and objective assessment of the performance of these products throughout CEN Members.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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Introduction

The intended use for products according to this document is:

a) for use in doors in buildings;

b) for use on fire and smoke compartmentation doors fitted with door closing devices, to enable such doors to close reliably and thus achieve self-closing in the event of fire;

c) for use on closed fire doors to maintain the fire integrity of the door assembly.

This document is one of a series of European standards dedicated to building hardware products.

European standards for mechanically operated locks and latches (EN 12209) and for electromechanically operated locks and locking plates (EN 14846) are also available.

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1 Scope

This document specifies product characteristics and test methods of mechanically operated multipoint locks and their locking plates.

This document covers multipoint locks their locking plates which are either manufactured and placed on the market in their entirety by one producer or assembled from sub-assemblies produced by more than one producer and designed to be used in combination.

This document does not cover assessment of the contribution of the product to the fire resistance of specific fire resistance and/or smoke control door set assemblies.

This document is not applicable to mechanically/electromechanically cylinders, handles, locks for windows, padlocks, locks for safes, furniture locks or prison locks.

This document does not specify mechanically operated locks or their locking plates which are specified by EN 12209.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1303, *Building hardware — Cylinders for locks — Requirements and test methods*

EN 1634-1, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 1: Fire resistance test for door and shutter assemblies and openable windows*

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EN 1634-2, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 2: Fire resistance characterisation test for elements of building hardware*

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EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, open able windows and elements of building hardware — Part 3: Smoke control test for door and shutter assemblies*

EN 1670:2007, *Building hardware — Corrosion resistance — Requirements and test methods*

EN 16035, *Hardware performance sheet (HPS) — Identification and summary of test evidence to facilitate the inter-changeability of building hardware for application to fire resisting and/or smoke control doorsets and/or openable windows*

ISO 10899, *High-speed steel two-flute twist drills*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

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3.1.1
anti-separation point
locking point designed to prevent the separation of a door leaf from its frame or adjacent door leaf in the plane of the door

Note 1 to entry: Examples of anti-separation points are hook and mushroom types.

3.1.2
automatic deadlocking
deadlocking where deadbolt or deadlocked latch movement is self-propelled, and is triggered when the closed position of the door leaf has been reached

3.1.3
centrally controlled
having release the bolts of all of its locking and/or clenching and/or anti-separation points, from a single lock case

3.1.4
clenching point
arrangement of components to draw together a door and its frame in the door closing direction to reduce distortion of the door and/or compress seal (can also be a locking point and/or anti-separation point)

3.1.5
cylinder
device, usually separate from, but engaging with, its associated lock or latch, that contains the parts operated by the key

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3.1.6
cylinder lock
lock in which the lock mechanism is operated by one or more cylinders

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3.1.7
deadbolt
movable part of a lock that usually engages a locking plate and withdraws into a lock case that is operated at least in one direction by a key, handle or thumb turn

3.1.8
deadlocking
action of moving a deadbolt to a thrown position where pushing back of the bolt is positively prevented

3.1.9
detaining element
component which is moved by a key into a pre-determined position to allow the bolt to be operated

3.1.10
differ
variation between lock mechanisms of similar design, achieved by the detaining elements, which enables each lock to be operated only by its own key

3.1.11
effective differ
difference between lock or key recognition systems of similar design achieved only by the detaining elements which allows each lock or key recognition system to be operated only by its own key

Note 1 to entry: The number of effective differs is equal to the number of theoretical differs after deduction of the differs suppressed by the manufacturer due to technical constraints.

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3.1.12
follower
part of a lock that operates the latch bolt and/or deadbolt(s) and/or clenching and/or anti-separation points when turned by a spindle

3.1.13
forend
part of a case through which the lock is fixed to the door leaf and through which the latch bolt and/or deadbolt pass

3.1.14
interlinked
connected for the purpose of operation

3.1.15
key
device that is removable and portable and is used to operate the lock

3.1.16
latch
self-engaging fastener which keeps the door leaf in a closed position, and which can be released

3.1.17
latch action
arrangement and performance of the constituent parts that operate a latch bolt

3.1.18
latch bolt
spring-loaded movable part of a lock that usually engages a component fixed to a frame, and withdraws into a lock case that automatically engages a locking plate to keep the door leaf in its closed position

3.1.19
lever lock
lock with integral differs operated by a key

3.1.20
lock
fastener which secures a door leaf in its closed position, and which is operated by a key or other device

3.1.21
lockable follower
mechanism operated by a key to block the rotation of the follower inside a lock case or the rotation of a handle/knob when it is a part of the lock

3.1.22
lock case
part of a lock in which the lock mechanism is housed

3.1.23
locking plate
component, which is usually fixed to a door frame to engage at least a locking point or, latch bolt or an anti-separation point or a clenching point

3.1.24
locking point
arrangement of components interacting between a deadbolt or anti-separation point and locking plate for security purpose

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3.1.25
locking snib
device, usually in the form of a small lever or knob, which can be operated to prevent the locking point, or latch bolt or an anti-separation point or clenching point from being thrown or withdrawn, or to change the operating mode of a lock

3.1.26
lock mechanism
constituent parts of a lock that operate the deadbolt and/or latch bolt or an anti-separation point or a clenching point and, where required, provide the differs

3.1.27
manual deadlocking
deadlocking where movement of the deadbolt is by key, handle or thumb turn

3.1.28
mortice lock
lock for fixing in a mortice, usually in the closing edge of a door leaf

3.1.29
multipoint lock
lock comprising at least two points of interaction (security, anti-separation or clenching) interlinked and centrally controlled, where at least two points are more than 200 mm apart in locked or thrown position

3.1.30
set
all components necessary for the complete function of the product or a number of components delivered or recommended as a part of a complete multipoint lock

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3.1.31
shared latch action
latch action in which withdrawal of the latch bolt is by means of a handle or key

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3.2 Symbols and abbreviated terms

For the purposes of this document, the following symbols and abbreviated terms apply.

Test parameter	Definition	Unit
F1	Return force on latch bolt	N
F2	Side force on latch bolt	kN
F3	Side force on latch bolt and locking plate (durability test)	N
F4	Side force on deadbolt and locking plate	kN
F5	End load on deadbolt and locking plate / Disengaging force on hook/claw bolt	kN
F6	Pull force on hook/claw bolt or locking plate	kN
F7	Force on locating device or lifting force on locking plate	kN
F9	Door closing force (classification)	N
F10	Door closing force (durability test)	N
F11	Clenching force	N
H1	Minimum projection	mm
L1	Deadbolt projection	mm
L2	Resulting projection	mm
M1	Torque to operate the latch bolt and/or deadbolt with key	Nm
M2	Torque to operate the latch and/or deadbolt bolt with handle, spring handle or knob	Nm
M3	Torque on follower stop	Nm
M4	Torque on lockable follower (relevant for category of use)	Nm
M5	Torque on lockable follower (relevant for security)	Nm
M6	Strong key torque on lever locks	Nm
M7	Torque resistance on knob or lever handle	Nm
Test parameters also illustrated in the figures		

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