



SLOVENSKI STANDARD

oSIST prEN 12209:2019

01-november-2019

Stavbno okovje - Mehanske ključavnice in prijemniki - Značilnosti in preskusne metode

Building hardware - Mechanically operated locks and locking plates - Characteristics and test methods

Schlösser und Baubeschläge - Mechanisch betätigte Schlösser und Schließbleche - Anforderungen und Prüfverfahren

Quincaillerie pour le bâtiment - Serrures mécaniques et gâches - Exigences et méthodes d'essai

<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-d400e59280/osist-pr-en-12209-2019>

Ta slovenski standard je istoveten z: **prEN 12209**

ICS:

91.190

Stavbna oprema

Building accessories

oSIST prEN 12209:2019

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 12209:2019](#)

<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 12209

September 2019

ICS 91.190

Will supersede EN 12209:2016

English Version

Building hardware - Mechanically operated locks and locking plates - Requirements and test methods

Quincaillerie pour le bâtiment - Serrures mécaniques et gâches - Exigences et méthodes d'essai

Schlösser und Baubeschläge - Mechanisch betätigte Schlösser und Schließbleche - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	4
1 Scope	6
2 Normative references	6
3 Terms, definitions, symbols and abbreviations	7
3.1 Terms and definitions	7
3.2 Symbols and abbreviations	9
4 Product characteristics	10
4.1 General.....	10
4.2 Category of use (first digit)	11
4.3 Durability characteristics (second digit).....	14
4.4 Door mass and door closing force (third digit)	15
4.5 Suitability for use on fire resistance and/or smoke control door set (fourth digit)	16
4.6 Safety (fifth digit)	17
4.7 Corrosion resistance and temperature (sixth digit)	17
4.8 Security (seventh digit).....	17
4.9 Key identification characteristics of lever locks (eight digit).....	28
5 Test, assessment and sampling methods	29
5.1 General.....	29
5.2 Test apparatus.....	30
5.3 Test procedure - Drilling procedure.....	30
5.4 Test methods - general.....	31
5.5 Test methods - Category of use.....	32
5.6 Test methods - durability	35
5.7 Door mass and closing force	40
5.8 Suitability for use on fire resistance and/or smoke control door set.....	41
5.9 Safety	41
5.10 Corrosion resistance and temperature.....	41
5.11 Security	42
5.12 Key related security for lever locks.....	55
6 Assessment and verification of constancy of performance – AVCP	56
6.1 General.....	56
6.2 Type testing.....	56
6.3 Factory production control (FPC)	59
7 Classification	63
7.1 Coding system.....	63
7.2 Classification for mechanically operated locks and locking plates	64
7.3 Example for classification of locks, latches and locking plates	67
8 Marking, labelling and packaging	67
8.1 On the product.....	67
8.2 On the packaging and literature	67
Annex A (normative) Test sampling and sequencing for locks and latches	68
Annex B (informative) Product information	72

Annex ZA (informative) Relationship of this European Standard with Regulation (EU) No.305/2011	74
Bibliography	77

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN 12209:2019](https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019)
<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019>

European foreword

This document (prEN 12209:2019) 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 document will supersede EN 12209:2016.

This document has been prepared under a standardization request given to CEN by the European Commission and the European Free Trade Association, and supports basic work requirements of EU Regulation(s).

For relationship with Regulation (EU) No. 305/2011, see informative Annex ZA, which is an integral part of this document.

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

European Standards for electromechanically operated locks and locking plates (EN 14846) and for mechanically operated multi-point locks (prEN 15685) are also available.

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

iTeh STANDARD PREVIEW

The major changes in this revision from version 2016 are as follows: (standards.itih.ai)

- Introduction deleted;
- Clause 4 changed from requirements to characteristics; <https://standards.itih.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-4d00ac51280/osist-prEN-12209-2019>
- Figures clarified;
- Durability grades changed from threshold value to range;
- Annex A moved to subclauses 4.5, 5.8 and 7.2.4;
- The previous Annex B is now modified in the new Annex A;
- The previous Annex C is now modified in the new Annex B;
- Annex ZA is updated based on the agreed CEN template.

Changes from version 2004 to version 2016 related to essential characteristics:

- The following clauses were re-numbered without any change of performance:
 - o Self closing ability changed to Self closing – ability to close and keep the door in closed position;
 - Return force of latch bolt, from 5.1.2 to 4.1.3;
 - Closing force, from 5.4.2 to 4.4.2 Door closing force;
 - o Durability of self closing action changed to Durability of self closing against aging and degradation;

- Durability of latch action, from 5.3.1 to 4.3.1;
- o Ability to maintain door in closed position and not contribute the spread of fire changed to Sustainability for use on fire resistance and/or smoke control door set;
- Suitability for use on fire/smoke doors, from 5.5 to 4.5 Sustainability for use on fire resistance and/or smoke control door set;
- o Control of dangerous substances changed to Dangerous substances;
- Dangerous substances, from 5.1.1 to 4.1.2.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN 12209:2019](https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019)

<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019>

1 Scope

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

- 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 locked fire doors to maintain the fire integrity of the door assembly.

This document covers mechanically operated locks, their locking plates which are either manufactured and placed on the market in their entirety by one producer or produced by more than 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 multipoint locks or their locking plates which are specified by prEN 15685.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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 - Characteristics 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*

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*

EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, openable 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 1906, *Building hardware - Lever handles and knob furniture - 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*

3 Terms, definitions, symbols and abbreviations

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 <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1.1

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

3.1.2

bored latch set

fastener that comprises an integral assembly of door furniture with a tubular latch

3.1.3

bored lock set

fastener that comprises an integral assembly of door furniture with a tubular lock

3.1.4

cylinder

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)
oSIST prEN 12209:2019
<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/osist-pren-12209-2019>

3.1.5

cylinder lock

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

3.1.6

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

3.1.7

deadlocking

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

3.1.8

detaining element

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

3.1.9

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

prEN 12209:2019 (E)

3.1.10**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.

3.1.11**follower**

part of a lock that operates latch bolt and/or deadbolt(s) when turned by a spindle

3.1.12**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

3.1.13**key**

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

3.1.14**latch**

self-engaging fastener which secures a movable component (e.g. door leaf) in a closed position and which can be released

3.1.15**latch action**

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

3.1.16**latch bolt**

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

3.1.17**Lever lock**

lock with integral differs operated by a key

3.1.18**lock**

fastener which secures a movable component in a closed position within a door frame and which is operated by a key or other device

3.1.19**lockable follower**

follower, rotation of which, can be blocked

3.1.20**locking plate**

component, fixed to a frame to engage a bolt, or bolts

3.1.21**locking snib**

manual device, usually in the form of a small lever or knob, operable after installation and which can be operated to prevent the deadbolt or latch bolt from being thrown or withdrawn, or to change the function of a lock

3.1.22**lock mechanism**

constituent parts of a lock that operate the deadbolt and/or latch bolt, where required, provide the differs

3.1.23**manual deadlocking**

dead locking where movement of the deadbolt is by key or handle/thumb turn

3.1.24**multi-point 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

3.1.25**shared latch action**

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

3.2 Symbols and abbreviations

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)	kN
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
F8	Pull force on knobs	kN
F9	Door closing force (durability test)	N
F10	Door closing force (operating requirement)	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

Test parameter	Definition	Unit
M3	Torque on follower stop	Nm
M4	Torque on lockable follower	Nm
M5	Torque on lockable follower	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.

4 Product characteristics

4.1 General

NOTE Product characteristics are given in 4.1.1 to 4.1.6.

4.1.1 Essential characteristics

The following characteristics have special significance because they are a part of the Annex ZA, Essential characteristics:

a) Self-closing ability

1) ability to close and keep the door in a closed position:

i) 4.1.3, return force of latch bolt;

ii) 4.2.4, side force on latch bolt;

iii) 4.4.2, door closing force;

2) suitability for use on fire resistance and/or smoke control door set:

i) 4.5, suitability for use on fire resistance and/or smoke control door set.

b) Self-closing ability – durability:

1) 4.3.1, durability of latch action

All locks regardless of classification shall conform to 4.1.2, 4.1.4, 4.1.6 and where applicable 4.1.3 and 4.1.5.

4.1.2 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release and sometimes content when construction products covered by this standard are placed on those markets. In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

Check in accordance with 5.4.1.

NOTE An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA accessed through: https://ec.europa.eu/growth/tools-databases/cp-ds_en.

4.1.3 Return force of latch bolt

The return force F_1 (see Figure 1) on each latch bolt of the mechanically operated lock shall be ≥ 2.5 N.

The test result of a lock without latch bolt shall be expressed as "NPD".

The return force shall be tested in accordance with 5.4.2.

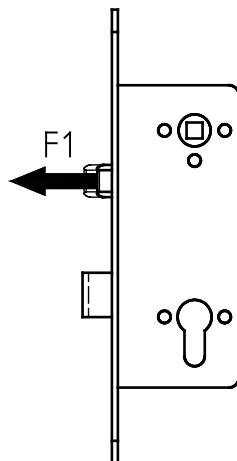


Figure 1 — Return force of latch bolt

4.1.4 Strength of lever lock key

The key for lever lock shall have the strength so it can resist a torque of 2.5 Nm and still be able to operate its lock with the torque M_1 appropriate with its grade in 4.2.2.

This requirement is not applicable to cylinder keys which shall conform to EN 1303.

The key strength shall be tested in accordance with 5.4.4.

4.1.5 Strength of bolt actions

The dead bolt components shall resist a torque of 30 Nm and the latch bolt components shall resist a torque of 20 Nm operated through the follower and after both tests the lock shall still be able to operate with the torque M_1 and M_2 appropriate with its grade in 4.2.2.

The strength of bolt actions shall be tested in accordance with 5.4.4.

4.1.6 Minimum follower restoring torque

The lock shall have a minimum restoring torque on the follower of 0.8 Nm, unless the manufacturer has declared on the Product Information Sheet (see 4.1.4) that the product is intended for use with spring supported furniture.

The restoring torque shall be tested in accordance with 5.4.6.

4.2 Category of use (first digit)

NOTE Product characteristics are given in 4.2.1 to 4.2.4.

4.2.1 Resistance to side force on latch bolt

The latch bolt shall resist a side force F_2 (see Figure 2) as specified in Table 2 after which operating torque shall not exceed that specified in 4.2.2, return force on latch shall still not be less than 2,5 N, and closing force shall not exceed that specified in 4.4.2.

The resistance to side force shall be tested in accordance with 5.5.1.

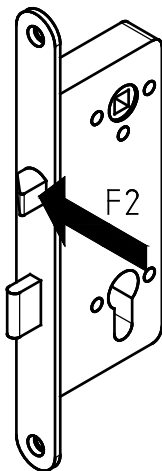


Figure 2 — Resistance to side force on latch bolt

4.2.2 Torque to operate the lock

4.2.2.1 The lock shall conform to torque on key 4.2.2.2 and torque on follower 4.2.2.3.

4.2.2.2 The torque on the key to operate the lock without side force shall not exceed M1 in accordance with Table 1 (see Figure 3).

The torque on the key shall be tested in accordance with 5.5.2.

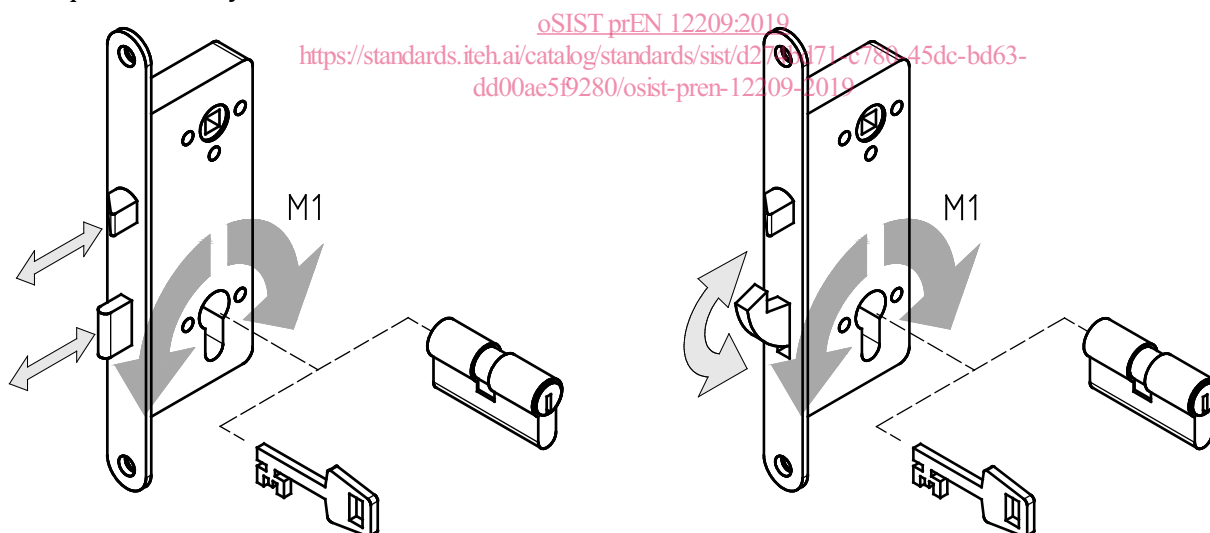


Figure 3 — Torque to operate deadbolt or latch bolt with key

4.2.2.3 The torque on the follower to operate the lock without side force shall not exceed M2 in accordance with Table 1 (see Figure 4).

The torque on the follower shall be tested in accordance with 5.5.2.

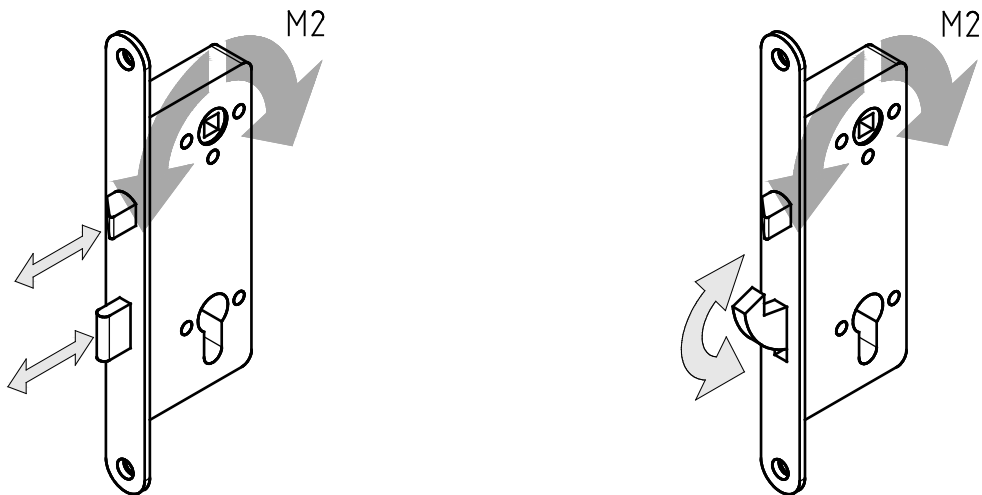


Figure 4 — Torque to operate deadbolt or latch bolt via the follower

4.2.3 Strength of follower stops

The latch components and travel limit stops shall resist a torque M3 (see Figure 5) as specified in Table 1, and the lock shall still be able to operate with the torque appropriate with its grade in 4.2.2.

The strength of follower stops shall be tested in accordance with 5.5.3.

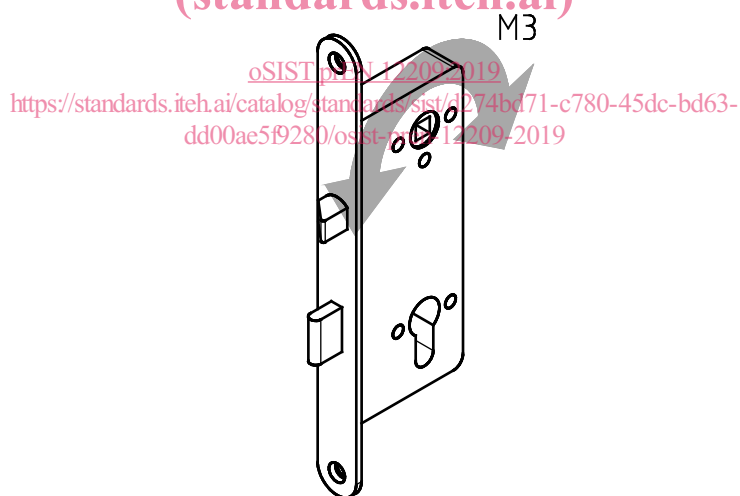


Figure 5 — Strength of follower stops

4.2.4 Torque resistance for lockable deadbolt operation by handle/knob

4.2.4.1 Torque resistance of lockable followers

A lock with a lockable follower shall resist a torque of M4 (see Figure 6 a) as specified in Table 1, and the lock and its lockable follower shall still be able to operate with the torque M1 and M2 appropriate with its grade in 4.2.2.

The resistance of lockable followers shall be tested in accordance with 5.5.4.