



SLOVENSKI STANDARD
SIST EN 12209:2025

01-februar-2025

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

Ta slovenski standard je istoveten z: EN 12209:2024

[SIST EN 12209:2025](https://standards.sist.si/standards/sist-en-12209-2025)

<https://standards.sist.si/standards/sist-en-12209-2025>

ICS:

91.190

Stavbna oprema

Building accessories

SIST EN 12209:2025

en,fr,de

EUROPEAN STANDARD

EN 12209

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2024

ICS 91.190

Supersedes EN 12209:2016

English Version

Building hardware - Mechanically operated locks and locking plates - Characteristics 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 European Standard was approved by CEN on 27 February 2024.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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, Türkiye and United Kingdom.

<https://standards.iteh.ai>
SIST EN 12209:2025

<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/sist-en-12209-2025>



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	5
Introduction	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions, symbols and abbreviations	8
3.1 Terms and definitions	8
3.2 Symbols and abbreviations	11
4 Product characteristics.....	11
4.1 General	11
4.1.1 Essential characteristics	11
4.1.2 Dangerous substances	12
4.1.3 Return force of latch bolt	12
4.1.4 Strength of lever lock key	12
4.1.5 Strength of bolt actions.....	13
4.1.6 Minimum follower restoring torque.....	13
4.2 Category of use (first digit).....	13
4.2.1 Resistance to side force on latch bolt	13
4.2.2 Torque to operate the lock.....	13
4.2.3 Strength of follower stops.....	14
4.2.4 Torque resistance for lockable deadbolt operation by handle/knob	15
4.3 Durability characteristics (second digit)	17
4.3.1 Durability of latch operation	17
4.3.2 Durability of deadbolt mechanism.....	17
4.3.3 Durability of locking snib mechanism.....	17
4.4 Door mass and door closing force (third digit).....	18
4.4.1 Door mass	18
4.4.2 Door closing force.....	18
4.5 Suitability for use on fire resistance and/or smoke control door set (fourth digit)	18
4.5.1 General	18
4.5.2 Grade 0.....	18
4.5.3 Grade A	19
4.5.4 Grade B	19
4.5.5 Grade N	19
4.6 Safety (fifth digit)	19
4.7 Corrosion resistance and temperature (sixth digit)	19
4.7.1 Corrosion resistance.....	19
4.7.2 Operation at extreme temperatures.....	20
4.8 Security (seventh digit)	20
4.8.1 General	20
4.8.2 Locking	20
4.8.3 Deadlocking	20
4.8.4 Torque resistance of knob of tubular lock	21
4.8.5 Characteristics for side force.....	21

4.8.6	Locking point projection	22
4.8.7	Resistance to force in the unlocking direction (disengaging force).....	23
4.8.8	Characteristics for pulling of anti-separation bolt	24
4.8.9	Characteristics for anti-lifting devices in sliding door locks	25
4.8.10	Requirement for torque resistance of lockable followers	26
4.8.11	Strong key attack on lever locks.....	27
4.8.12	Resistance to force on box protected locking plates.....	27
4.8.13	Resistance to side force on locking plates	28
4.8.14	Resistance to pulling on locking plates.....	28
4.8.15	Resistance to lifting force on locking plates.....	28
4.8.16	Protection against removal from door.....	28
4.9	Key identification characteristics of lever locks (eight digit)	34
4.9.1	Minimum number of detaining elements.....	34
4.9.2	Minimum number of effective differs.....	34
4.9.3	Differing steps height on key.....	34
4.9.4	Non-interpassing of keys with just one interval differ.....	34
4.9.5	Coding protection	34
5	Test, assessment and sampling methods	35
5.1	General	35
5.2	Test apparatus	37
5.2.1	Test door	37
5.2.2	Drill machine.....	37
5.2.3	Test fixtures.....	37
5.3	Test procedure - Drilling procedure.....	37
5.4	Test methods - general	38
5.4.1	Dangerous substances verification	38
5.4.2	Return force of latch bolt	38
5.4.3	Strength of lever lock key	38
5.4.4	Strength of bolt actions.....	38
5.4.5	Minimum follower restoring torque.....	39
5.4.6	Protection against removal from door.....	39
5.5	Test methods - Category of use	39
5.5.1	Resistance to side force on latch bolt	39
5.5.2	Torque to operate the lock.....	41
5.5.3	Strength of follower stops.....	42
5.5.4	Torque resistance for lockable deadbolt operation by handle/knob	42
5.6	Test methods - durability.....	42
5.6.1	Durability of latch action without force applied	42
5.6.2	Durability of latch action with force applied	44
5.6.3	Durability of deadbolt mechanism.....	45
5.6.4	Durability of locking snib mechanism.....	47
5.7	Door mass and closing force	47
5.7.1	Door mass verification.....	47
5.7.2	Door closing force.....	47
5.8	Suitability for use on fire resistance and/or smoke control door set.....	48
5.8.1	Grade A	48
5.8.2	Grade B	48
5.8.3	Grade N	48
5.9	Safety	49
5.10	Corrosion resistance and temperature.....	49
5.10.1	Corrosion resistance.....	49
5.10.2	Operation at extreme temperatures.....	49
5.11	Security.....	49
5.11.1	Locking	49

EN 12209:2024 (E)

5.11.2	Torque resistance of knob of tubular lock	50
5.11.3	Resistance to side force	51
5.11.4	Deadbolt projection	54
5.11.5	Resistance to forcing in the unlocking direction (disengaging force)	55
5.11.6	Resistance to pulling of anti-separation bolt	58
5.11.7	Resistance to forcing of anti-lifting device in sliding door locks	59
5.11.8	Torque resistance of lockable followers	60
5.11.9	Strong key attack on lever locks	60
5.11.10	Resistance to force on box protected locking plate	60
5.11.11	Resistance to side force on locking plate	63
5.11.12	Resistance to pulling on locking plate	64
5.11.13	Resistance to lifting force on locking plate	65
5.12	Key related security for lever locks	65
5.12.1	Detaining elements verification	65
5.12.2	Effective differs verification	65
5.12.3	Differing step heights on key	65
5.12.4	Non-interpassing of keys with just one interval differ	66
5.12.5	Coding protection	66
6	Classification	66
6.1	Coding system	66
6.2	Classification for mechanically operated locks and locking plates	67
6.2.1	Category of use (first digit)	67
6.2.2	Durability (second digit)	67
6.2.3	Door mass and closing force (third digit)	67
6.2.4	Suitability for use on fire resisting and/or smoke control door set (fourth digit)	68
6.2.5	Safety (fifth digit)	68
6.2.6	Corrosion resistance and temperature (sixth digit)	68
6.2.7	Security and drill resistance (seventh digit)	69
6.2.8	Key identification of lever locks (eight digit)	69
6.3	Example for classification of locks, latches and locking plates	70
7	Marking, labelling and packaging	70
7.1	On the product	70
7.2	On the packaging and literature	70
Annex A	(normative) Test sampling and sequencing for locks and latches	71
Annex B	(informative) Product information	76
Bibliography	78

European foreword

This document (EN 12209:2024) 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.

This document supersedes EN 12209:2016.

EN 12209:2024 includes the following significant technical changes with respect to EN 12209:2016:

- Introduction deleted;
- Clause 4 changed from requirements to characteristics;
- figures clarified;
- durability grades changed from threshold value to range;
- environmental class B added;
- Annex A moved to subclauses 4.5, 5.8 and 6.2.4;
- 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 and Clause 6 deleted;
- Clause 7 renumbered to Clause 6;
- Clause 8 renumbered to Clause 7;
- changes from version 2004 to version 2016 related to essential characteristics:
- the following clauses were re-numbered without any change of performance:
 - 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;
 - 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;
- 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;

EN 12209:2024 (E)

- 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;
- Control of dangerous substances changed to Dangerous substances;
- Dangerous substances, from 5.1.1 to 4.1.2.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: 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, Türkiye and the United Kingdom.

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[SIST EN 12209:2025](https://standards.itih.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/sist-en-12209-2025)

<https://standards.itih.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/sist-en-12209-2025>

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

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 products throughout CEN Members.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN 12209:2025](https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/sist-en-12209-2025)

<https://standards.iteh.ai/catalog/standards/sist/d274bd71-c780-45dc-bd63-dd00ae5f9280/sist-en-12209-2025>

EN 12209:2024 (E)

1 Scope

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

This document covers mechanically operated locks and 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 multipoint locks and their locking plates which are specified by EN 15685.

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*

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 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 — Technical specifications*

3 Terms and 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 terminology databases for use in standardization at the following addresses:

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

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

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

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

EN 12209:2024 (E)**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 keeps the 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 door leaf in its closed position, and which is operated by a key or other device

3.1.19**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

3.1.20**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

For the purposes of this document, the following symbols and abbreviations 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
F8	Pull force on knobs	kN
F9	Door closing force (Classification)	N
F10	Door closing force (Durability test)	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.

4 Product characteristics**4.1 General****4.1.1 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;

EN 12209:2024 (E)

- ii) 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 of self-closing against aging and degradation:
 - 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 can 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 website 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 $\geq 2,5$ 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.

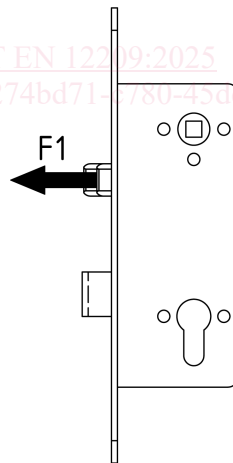


Figure 1 — Return force of latch bolt

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 4.2.2.2.

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