



SLOVENSKI STANDARD
SIST EN 1303:2005

01-september-2005

BUXca Yý U
SIST EN 1303:2000

GHUj Vbc`c_cj Y!`DfcZ`b]W]bXf]`nU_`1 Uj b]W`E`NU H]j Y]b`dfYg_i gbY`a YfcXY

Building hardware - Cylinders for locks - Requirements and test methods

Baubeschläge - Schließzylinder für Schlösser - Anforderungen und Prüfverfahren

(standards.iteh.ai)

Quincaillerie pour le bâtiment - Cylindres de serrures - Exigences et méthodes d'essai

[SIST EN 1303:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-966/sist-en-1303-2005>

Ta slovenski standard je istoveten z: EN 1303:2005

ICS:

91.190

Stavbna oprema

Building accessories

SIST EN 1303:2005

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1303:2005

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>

English version

Building hardware - Cylinders for locks - Requirements and test methodsQuincaillerie pour le bâtiment - Cylindres de serrures -
Exigences et méthodes d'essaiBaubeschlüsse - Schließzylinder für Schlösser -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 10 January 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

iTeh STANDARD PREVIEW

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

[SIST EN 1303:2005](https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005)<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG**Management Centre: rue de Stassart, 36 B-1050 Brussels**

Contents

	Page
Foreword.....	4
1 Scope.....	6
2 Normative references	6
3 Terms and definitions.....	7
4 Requirements	7
4.1 General.....	7
4.2 Key strength	7
4.3 Durability.....	7
4.4 Door mass.....	8
4.5 Fire resistance.....	8
4.6 Safety.....	8
4.7 Corrosion resistance	8
4.7.1 General.....	8
4.7.2 Operation at extremes of temperature.....	8
4.8 Key related security.....	8
4.8.1 General.....	8
4.8.2 Minimum number of effective differs.....	9
4.8.3 Minimum number of movable retainers.....	9
4.8.4 Maximum number of identical steps.....	9
4.8.5 Direct coding on key.....	10
4.8.6 Operation of security mechanism.....	10
4.8.7 Torque resistance of plug/cylinder relevant to key related security.....	10
4.9 Attack resistance	10
4.9.1 Resistance to attack by drilling.....	10
4.9.2 Resistance to attack by chisel.....	11
4.9.3 Resistance to attack by twisting	11
4.9.4 Resistance to attack by plug / cylinder extraction	11
4.9.5 Torque resistance of plug/cylinder relevant to attack resistance	11
5 Test methods.....	13
5.1 General.....	13
5.2 Key strength	13
5.3 Durability tests	14
5.4 Door mass.....	15
5.5 Fire resistance.....	15
5.6 Safety.....	15
5.7 Corrosion resistance (Test of operation at extremes of temperatures).....	15
5.8 Key related Security.....	15
5.8.1 Minimum numbers of effective differs	15
5.8.2 Minimum number of movable detainer.....	15
5.8.3 Maximum number of identical steps.....	15
5.8.4 Direct coding on key.....	15
5.8.5 Operation of the security mechanism.....	15
5.8.6 Torque resistance of plug and/or cylinder	16
5.9 Attack resistance	16
5.9.1 Resistance to drilling.....	16
5.9.2 Resistance to attack by chisel.....	16
5.9.3 Resistance to attack by twisting	17
5.9.4 Resistance to attack by plug/cylinder extraction	17
6 Classification	18

6.1	General	18
6.2	Category of use (1 st digit)	18
6.3	Durability (2 nd digit)	18
6.4	Door mass (3 rd digit)	18
6.5	Fire resistance (4 th digit)	18
6.6	Safety (5 th digit)	18
6.7	Corrosion resistance and temperature (6 th digit)	18
6.8	Key related security (7 th digit)	19
6.9	Attack resistance (8 th digit)	19
7	Marking	19
	Annex A (normative) Cylinders for use on fire/smoke resistant doors	20
	Annex B (normative) Corrosion resistance and temperature	21
	Annex C (normative) Test apparatus illustrations	22
	Annex D (informative) Test sequence to minimise the number of samples to be tested some samples can be reused for several tests	27
	Annex E (informative) Standard test cycle	28
	Bibliography	29

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 1303:2005](https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005)

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>

EN 1303:2005 (E)**Foreword**

This document (EN 1303:2005) 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 August 2005, and conflicting national standards shall be withdrawn at the latest by August 2005.

This document supersedes EN 1303:1998.

The European Federation of Associations of Lock and Builders Hardware Manufacturers, ARGE, collaborated in the drafting of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1303:2005

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>

Introduction

The aim of the test methods described in this document is to keep human influence on the test results to a minimum, thus improving reproducibility.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 1303:2005](https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005)

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>

EN 1303:2005 (E)**1 Scope**

This document applies to cylinders for locks normally used in buildings, which are designed to be used with cylinders.

This document specifies performance and other requirements for the strength, security, durability, performance and corrosion resistance of cylinders and their original keys. It establishes one category of use, three categories of durability, two categories each for fire and corrosion resistance all based on performance tests as well as six grades of key related security based on design requirements and three grades on performance tests that simulate attack.

This document includes tests of satisfactory operation at temperatures between - 20 °C and + 80 °C. It specifies test methods to be used on cylinders and their protective measures linked with these cylinders and recommended by the manufacturer.

Corrosion resistance is specified by reference to the requirements of the European Standard EN 1670 on the protection of corrosion for locks and building hardware, see annex B.

The suitability of cylinders for use on fire or smoke-door assemblies is determined by fire performance tests conducted in addition to the performance testing required by this standard. Since suitability for use on fire doors is not essential in every situation, the manufacturer has the option to state if the cylinder conforms to these additional requirements or not. Unless otherwise specified cylinders shall conform to the requirements specified in the relevant European Standard EN 1634-1 or prEN 1634-2, see annex A.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Assessment of fire resistance of grade 1 doors is beyond the scope of this document.

On occasions there may be a need for additional functions within the design of the cylinder. Purchasers should satisfy themselves that the products are suitable for their intended use.

<https://standards.iteh.ai/catalog/standards/sist/08f6df79-2a6f-47b2-b7d8-2fd7db063966/sist-en-1303-2005>

2 Normative references

The following referenced documents are indispensable for the application 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 1634-1, *Fire resistance tests for door and shutter assemblies - Part 1: Fire doors and shutters*

prEN 1634-2, *Fire resistance tests for door and shutter assemblies - Part 2: Fire door hardware - Building hardware for fire resisting doorsets and openable windows*

EN 1670:1998, *Building hardware - Corrosion resistance - Requirements and test methods*

EN 1906, *Building hardware - Lever handles and knob furniture - Requirements and test methods*

3 Terms and definitions

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

3.1

cylinder

device, usually distinct from its associated lock or latch, operated by a key

3.2

effective differ

difference between cylinders of similar design, achieved only by the movable detainer, which allows each cylinder to be operated only by its own key. 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 and those differs suppressed in accordance with the restraints of **4.8.4**

3.3

key

separate device corresponding to the cylinder, which can mechanically operate the cylinder

3.4

keyway

aperture extending along the whole or part of the length of the plug into which the key is inserted

3.5

moveable detainer

part of the mechanism of a cylinder, which should first be moved by the key into a pre-determined position before the key and/or plug can move

3.6

plug

part of a cylinder that can be moved when the proper key is used

3.7

steps

cuts in the surface of a bit or blade which operates movable detainers

4 Requirements

4.1 General

NOTE The structure of this clause reflects the classification in accordance with clause 6.

4.2 Key strength

When tested in accordance with **5.2**, the key shall not break under the applied maximum torque of 2,5 Nm.

After the test, the key shall be capable of being removed from the cylinder and re-used to operate the same cylinder with a torque not exceeding 1.5 Nm.

4.3 Durability

When tested in accordance with **5.3**, it shall be possible to operate the cylinders with a new original key with a torque not exceeding 1.5 Nm after the number of test cycles specified in Table 1.

EN 1303:2005 (E)

Table 1 — Number of cycles

Durability	Number of cycles
Grade 4	25 000
Grade 5	50 000
Grade 6	100 000

4.4 Door mass

No requirement.

4.5 Fire resistance

Fire resistance shall be in accordance with annex A.

4.6 Safety

No requirement.

4.7 Corrosion resistance**4.7.1 General**

Cylinders for corrosion resistance grade A or C (high) shall conform to the corrosion resistance requirements of grade 3 of EN 1670 as a minimum (see annex B).

This corrosion test shall apply to functionality only.

No distinction is made between the inside and the outside of cylinder and/or door.

After the corrosion test, the cylinder shall operate, using a maximum torque on the key of 1,5 Nm.

4.7.2 Operation at extremes of temperature

During testing in accordance with 5.7, it shall be possible to operate a cylinder with the proper key using a maximum torque of 1,5 Nm at both - 20 °C and + 80 °C.

Grade 0 means no corrosion requirement and no temperature requirement

Grade A means (high) corrosion resistance and no temperature requirement

Grade B means no corrosion requirement but with temperature requirement

Grade C means (high) corrosion resistance and temperature requirement

4.8 Key related security**4.8.1 General**

The security of a cylinder is determined by 2 security categories, which can be specified independently of each other:

- key related security;
- attack resistance (4.9).

In case of a double cylinder, it is assumed that the grades for both categories apply to the attack side / outside of the cylinder. This side shall have a proper indication/markings, either on the product or on the documents with the product.

4.8.2 Minimum number of effective differs

The minimum number of effective differs shall be as specified in Table 2.

Table 2 — Minimum Number of effective differs

Key related security grade	Minimum number of effective differs
1	100
2	300
3	15 000
4	30 000
5	30 000
6	100 000

4.8.3 Minimum number of movable detainers

The minimum number of movable detainers shall be as specified in Table 3.

Table 3 — Minimum number of movable detainers

Key related security grade	Minimum number of movable detainers
1	2
2	3
3	5
4	5
5	6
6	6

4.8.4 Maximum number of identical steps

The choice of key steps for movable detainer operation, which have the same operating level, shall be restricted as specified in Table 4.

Table 4 — Maximum number of identical steps

Key related security grade	Maximum number of identical steps
1	100 %
2	70 % , max. 2 adjacent
3	60 % , max. 2 adjacent
4	60 % , max. 2 adjacent
5	60 % , max. 2 adjacent
6	50 % , max. 2 adjacent

NOTE The requirements as specified in table 4 relate to one row only of movable detainers.

EN 1303:2005 (E)**4.8.5 Direct coding on key**

Direct key coding shall not be permitted on keys for key related security grades 3, 4, 5 and 6.

4.8.6 Operation of security mechanism

When tested in accordance with **5.8.5**, the following requirements shall apply.

For key related security grades 1, 2 and 3, before the durability test is commenced the new cylinder, with the next closest key to its own key using a torque of $1,5 \text{ Nm} \begin{smallmatrix} +0,2 \\ -0 \end{smallmatrix}$ Nm, shall not be operable.

For key related security grades 4, 5 and 6, after the durability test has been completed, the cylinder with the next closest key to its own key using a torque of $1,5 \text{ Nm} \begin{smallmatrix} +0,2 \\ -0 \end{smallmatrix}$ Nm, shall not be operable.

The tests for operating the security mechanism shall be performed before or after the durability test, as specified in **5.8.5**.

The next closest keys, one up and one down being different in one position only by one step, defined by the manufacturer in accordance with its key coding system as specified in **4.8.2**.

4.8.7 Torque resistance of plug/cylinder relevant to key related security

The maximum torque to be applied to the plug/cylinder shall be in accordance with Table 5.

Table 5 — Maximum torque requirements
(standards.iteh.ai)

Key related security grade	maximum torque Nm SIST EN 1303:2005	Tolerance Nm
1	2,5	-0 + 0,25
2	5	0 + 0,5
3	15	-0 + 1,5
4	15	-0 + 1,5
5	15	-0 + 1,5
6	15	-0 + 1,5

When tested in accordance with **5.8.6**, the plug and/or cylinder in key related security grades 1 to 6, shall not rotate using the specified applied torque.

4.9 Attack resistance**4.9.1 Resistance to attack by drilling**

The lock shall be tested in accordance with **5.9.1** while applying the drilling times specified in table 6.