



SLOVENSKI STANDARD

SIST EN 13126-17:2008

01-maj-2008

BUXca Yý U.

SIST-TS CEN/TS 13126-17:2005

Stavbno okovje - Okovje za okna in balkonska vrata - Zahteve in preskusne metode - 17. del: Okovje za nagibno-drsna okna in vrata

Building hardware - Hardware for windows and balcony doors - Requirements and test methods - Part 17: Hardware for Tilt&Slide windows and doors

Baubeschläge - Beschläge für Fenster und Fenstertüren - Anforderungen und Prüfverfahren - Teil 17: Beschläge für Kippschiebe-Fenster und -Fenstertüren

(standards.iteh.ai)

Quincaillerie pour le bâtiment - Ferrures pour fenetres et porte-fenetres - Exigences et méthodes d'essai - Partie 17 : Ferrures pour fenetres et portes-fenetres oscillo-coulissantes

<https://standards.iteh.ai/catalog/standards/sist/e40dd125-2c24-496c-87db-70de5b8b7d34/sist-en-13126-17-2008>

Ta slovenski standard je istoveten z: EN 13126-17:2008

ICS:

91.190

SIST EN 13126-17:2008

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13126-17:2008

<https://standards.iteh.ai/catalog/standards/sist/e40dd125-2c24-496c-87db-70de5b8b7d34/sist-en-13126-17-2008>

English Version

Building hardware - Requirements and test methods for windows
and doors height windows - Part 17: Hardware for Tilt&Slide
windows and doors

Quincaillerie pour le bâtiment - Exigences et méthodes
d'essai des ferrures de fenêtres et portes-fenêtres - Partie
17: Ferrures pour fenêtres et portes-fenêtres oscillo-
coulissantes

Baubeschläge - Beschläge für Fenster und Fenstertüren -
Anforderungen und Prüfverfahren - Teil 17: Beschläge für
Kippschiebe-Fenster und -Fenstertüren

This European Standard was approved by CEN on 5 December 2007.

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 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 Management Centre has the same status as the official versions.

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



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Classification	5
4.1 General	5
4.2 Category of use (1 – first digit)	5
4.3 Durability (2 – second digit)	5
4.4 Mass (3 – third digit)	5
4.5 Fire resistance (4 – fourth digit)	5
4.6 Safety in use (5 – fifth digit)	5
4.7 Corrosion resistance (6 – sixth digit)	6
4.8 Security (7 – seventh digit)	6
4.9 Application (8 – eighth digit)	6
4.10 Test Sizes (ninth digit)	6
4.11 Example of classification for hardware for Tilt&Slide windows and doors	7
5 Requirements	7
5.1 General	7
5.2 Additional requirements	7
5.2.1 Handle operation tolerance	7
5.2.2 Locking point variable tolerance	8
5.2.3 Sliding operation crash-tests	9
5.2.4 Minimum closing device resistance	9
5.2.5 Resistance to additional loading	9
5.2.6 Static endurance test at ambient temperature	10
6 Test equipment	10
6.1 General	10
6.2 Specimen	10
7 Test procedure	10
7.1 Samples	10
7.2 Procedure	11
7.3 Durability test	12
7.3.1 Description of the cycles	12
7.3.2 Acceptance criteria	15
7.4 Sliding operation crash-tests	16
7.4.1 Procedure – into the tilted position	16
7.4.2 Procedure - into the opening position	16
7.4.3 Acceptance criteria	16
7.5 Minimum closing device resistance test	16
7.5.1 Hardware without positive control	16
7.5.2 Hardware with positive control	17
7.6 Additional loading test	17
7.6.1 Procedure	17
7.6.2 Acceptance criteria	17
7.7 Static endurance test at ambient temperature	18
7.8 Corrosion resistance	18
Annex A (informative) Test assembly	19
Annex B (normative) Flow chart of test procedure	23
Bibliography	24

Foreword

This document (EN 13126-17:2008) 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 July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

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

This document supersedes CEN/TS 13126-17:2004.

This Part of European Standard EN 13126 has been prepared by CEN/TC 33 "Doors, windows, shutters, building hardware and curtain walling"; the Secretariat of which is held by AFNOR.

A full contribution to the preparation of this European Standard has been made by the European manufacturers organisation 'ARGE' and National Standards institutions.

This European Standard is one of a series of European Standards dedicated to building hardware products. It is divided into seventeen parts to incorporate all types of windows and door height windows.

Informative Annex A of EN 13126-1:2006 depicts the "list of parts and titles and their reference to the relevant window types" of the seventeen parts of this European Standard.

Normative Annex B of EN 13126-1:2006 gives schedules of the elements of components used on the 21 types of window opening functions.

Normative and informative annex to all parts of this European Standard are indicated in the content of the several parts.

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 Member States.

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

1 Scope

This part of EN 13126 provides requirements and test methods for durability, strength, security and function of hardware for Tilt&Slide windows and door height windows.

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

EN 12519:2004, *Windows and pedestrian doors – Terminology*

EN 13126-1:2006, *Building hardware — Requirements and test methods for windows and doors height windows - Part 1: Requirements common to all types of hardware*

ISO 4520, *Chromate conversion coatings on electroplated zinc and cadmium coating*

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 13126-1:2006 and EN 12519:2004 and the following apply.

NOTE The following terms and definitions apply to Tilt&Slide windows and door height windows made of wood, PVC-U, aluminium or steel and their appropriate material combinations.

3.1 roller

assembly of one or more rolls in a single or multiple casing which supports Tilt&Slide windows and door height windows which may be aligned in a straight line or rotate about an axis for Tilt&Slide windows and door height windows. Otherwise known as a bogey

3.2 roll

singular wheel in a roller

3.3 lateral guide

hardware component that guides the lateral movement of the Tilt&Slide windows and door height windows

3.4 guide track

track fixed on the top (top guide track) or bottom (bottom guide track) which enables a lateral guide to run

3.5 rail

rail fixed on the top (top rail) or bottom (bottom rail) which enables the rollers to run

3.6 positive control

sash operation via the hardware which enables the sash to be moved from the closed position into the tilted position, and from the tilted position into the closed position.

NOTE The sliding position can also be reached by means of operating the hardware.

3.7

locked closed position

position in which the active sash lies up against the frame on all sides, the hardware is locked and the window unit is completely closed

3.8

closed position

position in which the active sash lies up against the frame on all sides, while the hardware is not yet locked and in which the window unit is not completely closed

3.9

tilted position

position in which the bottom of the active sash rests on the frame

NOTE The top area is held in the final tilt position by means of the projecting mechanism

3.10

sliding position

position in which the active sash is disengaged on all sides, so that it can be moved in-line

3.11

opening position

position in which the active sash is at the end of the sliding position (the largest possible opening width)

ITEH STANDARD PREVIEW
(standards.iteh.ai)

4 Classification

[SIST EN 13126-17:2008](#)

4.1 General

<https://standards.iteh.ai/catalog/standards/sist/e40dd125-2c24-496c-87db-70de5b8b7d34/sist-en-13126-17-2008>

The classification of hardware for Tilt&Slide windows and doors shall be in accordance with the requirements of clause 4 EN 13126-1:2006.

4.2 Category of use (1 – first digit)

No marking is required for the category of use in accordance with 4.2 of EN 13126-1:2006.

4.3 Durability (2 – second digit)

Grades shall be in accordance with 4.3 of EN 13126-1:2006.

4.4 Mass (3 – third digit)

Grades shall be in accordance with 4.4 of EN 13126-1:2006.

4.5 Fire resistance (4 – fourth digit)

One grade shall be identified in accordance with 4.5 of EN 13126-1:2006

— grade 0: no requirements.

4.6 Safety in use (5 – fifth digit)

One grade is identified in accordance with 5.6 of EN 13126-1:2006.

— grade 1: The hardware shall conform to the requirements of parts 1 and 17 of this standard.

4.7 Corrosion resistance (6 – sixth digit)

Grades shall conform to EN 1670, whereby grade 3 is the minimum requirement

4.8 Security (7 – seventh digit)

No marking is required for the category of security in accordance with 4.8 of EN 13126-1:2006.

4.9 Application (8 – eighth digit)

The eighth digit shows “17” indicating the part of the standard which was used for testing the hardware for Tilt&Slide windows and doors in accordance with 4.9 of EN 13126-1:2006.

4.10 Test Sizes (ninth digit)

The ninth digit shows the test sizes (active sash) in accordance with 4.10 of EN 13126-1:2006 as follows: S.R.W.¹⁾ in mm / S.R.H.²⁾ in mm – tolerance ± 5 mm.

— 1 200 mm S.R.W¹ x 2 000 mm S.R.H².

The stated sizes are test sizes only. They do not relate to the maximum or minimum sizes to which a window may be fabricated.

NOTE 1 The manufacturer’s product documentation should advise that in daily use windows, smaller or larger than those tested, should not be subjected to stronger forces than those for the specified test size.

In the case of not being capable of manufacturing the specified test size due to the fact that the hardware field of application is smaller than these specified test sizes, smaller test sizes shall be used. In this case the window shall be tested in accordance with the largest possible S.R.W.¹⁾ (or S.R.H.²⁾) as specified by the hardware manufacturers appropriate documentation and a S.R.H.²⁾ (or S.R.W.¹⁾) in a ratio of 2 000/1 200 mm (factor $\approx 1,67$).

NOTE 2 This means that if the specified test sizes are larger than those which can be manufactured, the test specimens shall be tested using the largest possible S.R.W.¹⁾ or S.R.H.²⁾ in accordance with the manufacturer’s documentation and using a S.R.H.²⁾ to S.R.W.¹⁾ ratio of 2 000/1 200 mm (factor $\approx 1,67$).

Example 1 largest possible S.R.W.¹⁾ = 800 mm = S.R.W.¹⁾ of the test specimen

800 mm X 2 000/1 200 = 1 333 mm

S.R.H.²⁾ = 1 333 mm = S.R.H.²⁾ of the test specimen

Example 2 largest possible S.R.H.¹⁾ = 1 600 mm = S.R.H.¹⁾ of the test specimen

1 600 mm X 1 200/2 000 = 960 mm

S.R.W.²⁾ = 960 mm = S.R.W.²⁾ of the test specimen

NOTE 3 The missing dimensions in each case (S.R.H.¹⁾ or S.R.W.²⁾) should be calculated in accordance with example 1 or 2 with the objective of establishing the maximum test-format, which lies within the hardware manufacturers application range.

¹ S.R.W. = sash rebate width

² S.R.H. = sash rebate height

4.11 Example of classification for hardware for Tilt&Slide windows and doors

1	2	3	4	5	6	7	8	9
-	4	120	0	1	3	-	17	1 200/2 000

This denotes hardware for Tilt&Slide windows and doors, which have:

Digit 1	category of use	- (no requirements)
Digit 2	durability	grade 4 (15 000 cycles)
Digit 3	mass	120 kg
Digit 4	fire resistance	grade 0 (no requirements)
Digit 5	safety in use	grade 1
Digit 6	corrosion resistance	grade 3
Digit 7	security	- (no requirements)
Digit 8	applicable part	tested according to part 17 of this standard
Digit 9	test sizes	S.R.W ¹⁾ = 1 200 mm, S.R.H ²⁾ = 2 000 mm

¹⁾ S.R.W.

= sash rebate width

²⁾ S.R.H.

= sash rebate height

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13126-17:2008](https://standards.iteh.ai/catalog/standards/sist/e40dd125-2c24-496c-87db-70de5b8b7d34/sist-en-13126-17-2008)

<https://standards.iteh.ai/catalog/standards/sist/e40dd125-2c24-496c-87db-70de5b8b7d34/sist-en-13126-17-2008>

5 Requirements

5.1 General

Hardware for Tilt&Slide windows and doors shall conform to clause 5 of EN 13126-1:2006.

5.2 Additional requirements

5.2.1 Handle operation tolerance

The maximum torque T_h which is the result of a force of 100 N applied at a distance of 20 mm from the end point of the handle shall not be exceeded in conjunction with a counteracting force of 20 N^{+2,5}₀ N per locking point.

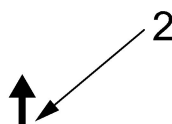
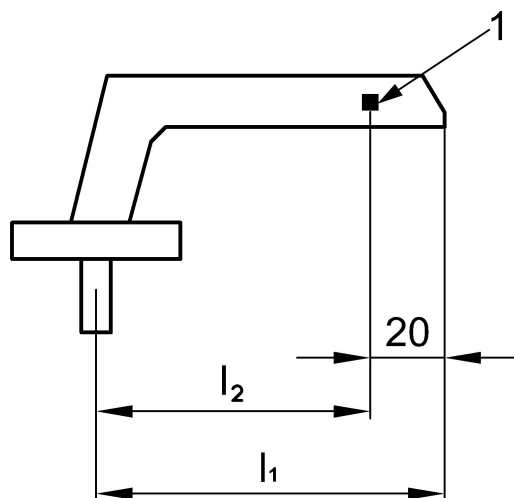
The length of the handle used during the test or the length of the handle intended for the hardware set shown in the hardware manufacturer's documentation shall be recorded in the test report.

The torque T_h resulting from the length of the used handle (key 3 in Figure 1 minus 20 mm) and the force of 100 N shall be calculated and recorded in the test report.

For example: length of the handle = 220 mm

operative length (key 4, figure 1) = 220 mm – 20 mm = 200 mm

torque T_h = operative length X force F = 200 mm X 100 N = 20 Nm



iTeh STANDARD PREVIEW
(standards.iteh.ai)

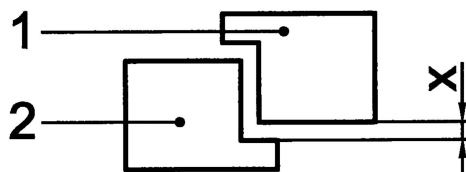
Key

- 1 location for the force
 l_1 length of the handle
 l_2 operative length
 2 force $F = 100 \text{ N}$

Figure 1 — Handle length

5.2.2 Locking point variable tolerance

Before and after the durability test in accordance with 7.3, the distance “X” between the frame surface and the sash-overlap-begin shall be measured in conjunction with a counteracting force of $20 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix} \text{ N}$ per locking point. The results shall not differ by more than 1 mm (see Figure 2).

**Key**

1	frame
2	sash
x	measurement

Figure 2 — Measurement of locking point variable tolerance

5.2.3 Sliding operation crash-tests

After the sliding operation crash test in accordance with 7.4.1 and 7.4.2:

- active sash shall not drop and shall still be constrained by its fixings
- active sash shall function correctly

NOTE After the sliding operation crash-test all adjustment possibilities may be used to operate the sash.

5.2.4 Minimum closing device resistance

5.2.4.1 Hardware without positive control

The closing device shall withstand a torque T_{hr} of 25 Nm.

Upon completion of the test in accordance with 7.5.1, the closing device shall operate.

5.2.4.2 Hardware with positive control

The hardware shall withstand a torque T_{hr} , which is the threefold torque T_h as calculated and recorded in accordance with 5.2.1.

For example:	length of the handle	= 220 mm	
	operative length (key 4, Figure 1)	= 220 mm – 20 mm	= 200 mm
	torque T_h = operative length X force F	= 200 mm X 100 N	= 20 Nm
	torque $T_{hr} = 3 \times T_h$	= 3 X 20 Nm	= 60 Nm

The closing device shall operate upon completion of the test in accordance with 7.5.2.1 and 7.5.2.2.

5.2.5 Resistance to additional loading

After the additional loading test in accordance with 7.6 the active sash shall not drop and shall still be constrained by its fixings.

NOTE It is not necessary for the sash to operate during and after the additional loading test.