SLOVENSKI STANDARD
SIST EN 13126-16:2019

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Nadomešča:
SIST EN 13126-16:2008

Stavbno okovje - Okovje za okna in zastekljena vrata - Zahteve in preskusne metode - 16. del: Okovje za dvižno-drsna okna in vrata

Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 16: Hardware for Lift and Slide windows

Baubeschläge - Beschläge für Fenster und Fenstertüren - Anforderungen und Prüfverfahren - Teil 16: Beschläge für Hebeschiebe-Fenster und -Fenstertüren

Quincaillerie pour le bâtiment - Ferrures de fenêtres et portes-fenêtres - Exigences et méthodes d'essai - Partie 16 : Ferrures pour fenêtres coulissantes à levage

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EUROPEAN STANDARD

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English Version

Building hardware - Hardware for windows and door height windows - Requirements and test methods - Part 16: Hardware for Lift and Slide windows

Quincaillerie pour le bâtiment - Ferrures de fenêtres et portes-fenêtres - Exigences et méthodes d'essai - Partie 16 : Ferrures pour fenêtres coulissantes à levage

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This European Standard was approved by CEN on 8 March 2019.

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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.

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

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European foreword

This document (EN 13126-16:2019) 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 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of an identical text or by endorsement, at the latest by October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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 13126-16:2008.

With regard to EN 13126-16:2008, the following significant changes were made:

— EN 13126-16 now is independent from EN 13126-1; all necessary information is included without the need of any further information from EN 13126-1;

— several editorial changes in the wording for a better understanding;

— new terms and definitions added under 3.13 - 3.18;

— under 4.1 classification system changed completely; former digits 1 (Category of use), 4 (Fire resistance), 5 (Safety in use), 7 (Security) and 8 (Applicable part) deleted; former digit 2 changed into box 1 (Durability), former digit 3 changed into box 2 (Mass), former digit 6 changed into box 3 (Corrosion resistance) and former digit 9 changed into box 4 (Test sizes);

— under 4.2 new grades for the number of cycles defined; H1 (5 000), H2 (10 000) and H3 (20 000);

— under 4.5 test size changed from SW (sash width) 1 200 mm and SH (=sash height) 2 000 mm into new sizes SW (sash width) 1 440 mm and SH (=sash height) 2 400 mm;

— under 4.6 new example of classification added in accordance with the new classification system; 2 alternative ways (table or alphanumerical) to show the classification defined;

— under Clause 6 “Test equipment and preparation for the test” additional information added for the test rig (6.1), the specimen (6.2) and the mounting of the specimen (6.3);

— under 6.2 “Specimen” the use of gaskets added in the description;

— under 7.2 “Procedure” new subclause 7.2.1 “General”, 7.2.2 ”Adjusting the test mass” and 7.2.3 ”Lubrication and adjustment of hardware” added with additional information, mainly from the current version of part 1;

— under 7.3 “Durability test” procedure modified to ensure better correlation with the test procedure described in EN 1191:2012;

— under 8 new clause added regarding marking with information from the current version of EN 13126-1.

This European standard is one of a series of European standards for building hardware products for windows and door height windows. This European standard is independent of EN 13126-1.

EN 13126 consists of the following parts:

— *Building hardware — Hardware for windows and door height windows — Requirements and test methods — Part 1: Requirements common to all types of hardware;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 2: Window fastener handles;*

— *Building hardware — Hardware for windows and door-height windows — Requirements and test methods — Part 3: Handles, primarily for Tilt&Turn, Tilt-First and Turn-Only hardware;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 4: Espagnolettes;*

— *Building hardware — Hardware for windows and door height windows — Requirements and test methods — Part 5: Devices that restrict the opening of windows and door height windows;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 6: Variable geometry stay hinges (with or without a friction stay);*

— *Building hardware — Requirements and test methods for windows and door height windows — Part 7: Finger catches;*

— *Building hardware — Hardware for windows and door height windows — Part 8: Requirements and test methods for Tilt and Turn, Tilt-First and Turn-Only hardware;*

— *Building hardware — Requirements and test methods for windows and door height windows — Part 9: Hardware for horizontal and vertical pivot windows;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 10: Arm-balancing systems;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 11: Top hung projecting reversible hardware;*

— *Building hardware — Requirements and test methods for windows and doors height windows — Part 12: Side hung projecting reversible hardware;*

— *Building hardware — Hardware for windows and balcony doors — Requirements and test methods — Part 13: Sash balances;*

— *Building hardware — Hardware for windows and balcony doors — Requirements and test methods — Part 14: Sash fasteners;*

— *Building hardware — Hardware for windows and doors height windows — Requirements and test methods — Part 15: Rollers for horizontal sliding and hardware for sliding folding windows;*

— *Building hardware — Hardware for windows and doors height windows — Requirements and test methods — Part 16: Hardware for Lift and Slide windows;*

— *Building hardware — Hardware for windows and doors height windows — Requirements and test methods — Part 17: Hardware for Tilt and Slide windows;*

— *Building hardware — Requirements and test methods for windows and door height windows — Part 19: Sliding Closing Devices.*

The performance tests incorporated in this European 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.

A full contribution to the preparation of this European standard has been made by the European manufacturer's organization 'ARGE' and National Standards institutions.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies requirements and test methods for durability, strength, security and function of hardware for Lift and Slide windows and door height windows in accordance with common application as shown in Figures C.1 and C.2 in informative Annex C, regardless of whether the hardware enables an additional tilt position.

NOTE 1 This document is also applicable to hardware systems, whereby the sash itself is not lifted but a gasket mechanism is moved.

NOTE 2 This document is also applicable to hardware systems, whereby the sash itself is not lifted but the sash is being moved parallel to the plane of the frame.

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

3 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 http://www.iso.org/obp

The following terms and definitions apply to hardware for Lift and Slide windows and door height windows made of timber, 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 Lift and Slide windows and door height windows; these may be aligned in a straight line or rotate about an axis for Lift and 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 which guides the lateral movement of the Lift and 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 or parallel projected position and back into the closed position

Note 1 to entry: The sliding position can also be reached by means of operating the hardware.

3.7
locked closed position
situation in which the active sash rests up against the frame and the hardware is locked

3.8
lifting action
operation in which the active sash is raised from the lowered position into the lifted position via the hardware

Note 1 to entry: During this action the sash can be moved a limited distance away from the frame in the direction of the opening position.

3.9
closed position
situation in which the active sash is moved into the raised position by the lifting action, and the hardware is unlocked

3.10
tilted position
situation in which the rollers on the bottom of the active sash rest on the roller track and the top area is held in the final tilt position by means of the projecting mechanisms

3.11
sliding position
situation in which the active sash is lifted or projected parallel, so that it can be moved linearly

3.12
opening position
situation in which the active sash is at the end of the sliding position (the largest possible opening width)

3.13
sample
actual hardware components which is due to be tested

3.14
specimen
window with gaskets to accommodate hardware components (samples) for testing

3.15
test rig
testing device onto which the specimen is mounted

3.16
test equipment
series of various testing rigs, devices and machinery enabling testing to be carried out

3.17
supporting sub frame
supplementary fixing frame surrounding the specimen enabling it to be mounted on the test rig while testing

Note 1 to entry: For example wood, steel or aluminium could be used.

3.18
rest time
time in seconds of a stationary period between the different steps

Note 1 to entry: A stationary period is between the following steps:

— between a change of direction of the moving of the sash;

— between the completion of a moving of the sash and the subsequent operating of the hardware;

— between the completion of the operation of the hardware and the subsequent moving of the sash;

— between two cycles.

4 Classification

4.1 General

Hardware for Lift and Slide windows and door height windows shall be classified in accordance with the four box coding system (see Table 1).

Table 1 — Classification system of hardware

Box	1	2	3	4
	Durability	Mass	Corrosion resistance	Test sizes

4.2 Durability (1 – first box)

The first box shall display the grade applied to the durability test in accordance with 5.3:

— grade H1: 5 000;

— grade H2: 10 000;

— grade H3: 20 000.

4.3 Mass (2 – second box)

The second box shall display the maximum tested sash-mass (weight).

The mass range starts from 50 kg and varies in steps of 10 kg. An unlimited number of grades are identified, whereby 050 is the lowest (see Table 2).

Table 2 — Tested sash-mass

Grade	050	060	070	080	090	100	110	120	130	...
Mass (kg)	50	60	70	80	90	100	110	120	130	...

4.4 Corrosion resistance (3 – third box)

The third box shall display the grade regarding corrosion resistance in accordance with 5.4.

4.5 Test sizes (4 – fourth box)

The fourth box shall display the test sizes (active sash) which were used for testing the hardware for Lift and Slide windows and door height windows as follows:

SW (= sash width) in mm / SH (=sash height) in mm – tolerance ± 10 mm.

— 1 440 mm SW / 2 400 mm SH

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

The manufacturer shall ensure that with the application of the tested hardware in window sizes deviating from the test sizes (smaller or larger), the forces on the hardware do not exceed those during the durability test. This shall be reflected in the appropriate product documentation.

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 SW (or SH) as specified by the hardware manufacturers appropriate documentation and a SH (or SW) in a ratio of 2 400/1 440 (factor approximately 1,67).

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 SW or SH in accordance with the manufacturer's documentation and using a SH to SW ratio of 2 400/1 440 (factor approximately 1,67).

EXAMPLE 1 largest possible SW = 800 mm = SW of the test specimen

SH = 800 mm × 2 400/1 440 = 1 333 mm = SH of the test specimen

EXAMPLE 2 largest possible SH = 1 600 mm = SH of the test specimen

SW = 1 600 mm × 1 440/2 400 = 960 mm = SW of the test specimen

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

4.6 Example of classification

a) Alternative 1: Table with boxes

	1	2	3	4
EN 13126-16:YYYY	**H2**	**250**	**3**	**1 440/2 400**