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Stavbno okovje - Okovje za okna in balkonska vrata - Zahteve in preskusne metode - 15. del: Valji za navpiļno drsna in zgibno drsna okna in vrata

Building hardware - Hardware for windows and balcony doors - Requirements and test methods - Part 15: Rollers for horizontal sliding and sliding folding windows and doors

Baubeschläge - Beschläge für Fenster und Türen - Anforderungen und Prüfverfahren - Teil 15: Horizontalscheibe- und Faltscheibe-Fenster und Fenstertüren

Quincaillerie pour le bâtiment - Ferrures pour fenetres et porte-fenetres - Exigences et méthodes d'essai - Partie 15 : Roulements pour portes-fenetres et fenetres coulissantes a l'horizontale et accordéon

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Building hardware - Requirements and test methods for windows and doors height windows - Part 15: Rollers for horizontal sliding and sliding folding windows and doors

Quincaillerie pour le bâtiment - Exigences et méthodes d'essai des ferrures de fenêtres et portes-fenêtres - Partie 15 : Roulements pour portes-fenêtres et fenêtres coulissantes à l'horizontale et accordéon

Baubeschläge - Beschläge für Fenster und Fenstertüren - Anforderungen und Prüfverfahren - Teil 15: Horizontalscheibe- und Faltscheibe-Fenster und Fenstertüren

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

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Foreword

This document (EN 13126-15:2008) 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of an identical text or by endorsement, at the latest by July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.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 13126-15:2004.

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 provides detailed schedules of the elements of components of the seventeen parts of this European Standard.

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 and informative annexes 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 the United Kingdom.

1 Scope

This part of EN 13126 provides requirements and test methods for the durability, strength, security and function of rollers for horizontal sliding and inward or outward sliding folding windows and door height windows in accordance with common applications as shown in Annex B, EN 13126-1:2006.

This standard is applicable to rollers, irrespective of whether they are adjustable or not, and irrespective of the method or type of fixing or if they are used independently, or in multiples or combinations.

NOTE 1 Guide tracks, laterals guides and rails used while testing the rollers for sliding folding windows and door height windows (window types N Q, R and S) are considered to be part of the complete sliding folding hardware set.

NOTE 2 The hinges used while testing the rollers for sliding folding windows and door height windows (window types Q, R and S) are considered to be part of the complete sliding folding hardware set. Testing the hinges separately is not required in this case.

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 European Standard the definitions given in EN 13126-1:2006 and EN 12519:2004 and the following apply.

NOTE The following terms and definitions apply to horizontal sliding and sliding folding windows and door height windows made of timber, PVC, 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 horizontal sliding windows, or sliding folding windows and door height windows. These may be aligned in a straight line or rotate about an axis for sliding folding 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 horizontal sliding and sliding folding windows and door height windows

3.4
guide track
track fixed on the top (top guide track) or bottom (bottom guide track) in which a guide runs

3.5
rail
rail fixed on the top (top rail) or bottom (bottom rail) on which rollers run

4 Classification

4.1 General

The classification for rollers shall be in accordance with the requirements of clause 4 of 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.

NOTE Rollers for use in horizontal sliding windows and doors (window type N) should be tested with half of the maximum sash mass, as long as the hardware manufacturer specifies a minimum of two rollers per sash. For example if the roller is specified by the hardware manufacturer for a maximum sash mass of 40 kg, the roller should be tested with 40 kg / 2 = 20 kg in accordance with 7.2.1.

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 4.6 of EN 13126-1:2006.

— grade 1: The hardware shall conform to the requirements of part 1 and part 15 of this standard.

4.7 Corrosion resistance (6 – sixth digit)

Grades shall be in accordance with 4.7 of EN 13126-1:2006.

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 “15/1”, “15/2” or “15/3” indicating the part of the standard that was used for testing the rollers and their common application for horizontal sliding windows or sliding folding windows and door height windows in accordance with 4.9 of EN 13126-1:2006. Three grades are identified as follows:

— grade 15/1: for use on horizontal sliding windows and door height windows (type N);

— grade 15/2: for use on centre pivot sliding folding windows and door height windows (type Q);

— grade 15/3: for use on outward or inward corner pivot sliding folding windows and door height windows (type R and/or S).

4.10 Test Sizes (9 – ninth digit)

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

— no test size is required for this category (15/1 for window type N)

— 900 mm S.R.W[1)] x 1 900 mm S.R.H[2)] (15/2 and 15/3 for window types Q, R and S)

The specified 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 1 900/900 (factor ≈ 2,111).

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 1 900/900 (factor ≈ 2,111)

Example 1	largest possible S.R.W.[1)]	=	700 mm	=	S.R.W.[1)] of the test specimen
	700 mm X 1 900/900	=	1 478 mm		
	S.R.H.[2)]	=	1 478 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 900/1 900	=	758 mm		
	S.R.W.[2)]	=	758 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 rollers

Table 1 — Example of classification for rollers

1	2	3	4	5	6	7	8	9
-	**4**	**080**	**0**	**1**	**2**	**-**	**15/2**	**900/1900**

This denotes rollers for horizontal sliding windows or sliding folding windows and doors, which have:

Digit 1	category of use	- (no requirements)
Digit 2	durability	grade 4 (15 000 cycles)
Digit 3	mass	80 kg
Digit 4	fire resistance	grade 0 (no requirements)
Digit 5	safety in use	grade 1
Digit 6	corrosion resistance	grade 2
Digit 7	security	- (no requirements)
Digit 8	applicable part	grade 15/2; tested according to part 15 of this standard for centre pivot sliding folding windows and doors (type Q)
Digit 9	test sizes	S.R.W.[1] = 900 mm, S.R.H[2] = 1 900 mm

[1] S.R.W. = sash rebate width

[2] S.R.H. = sash rebate height

5 Requirements

5.1 General

Rollers shall conform to clause 5 of EN 13126-1:2006 Additional test requirements

5.2 Test requirements

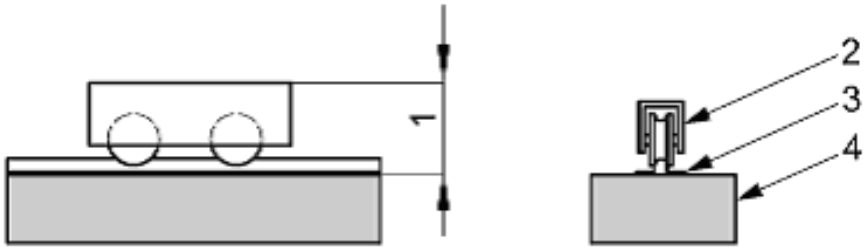
5.2.1 Durability test for rollers for horizontal sliding windows and doors (window type N)

Upon completion of the durability test in accordance with 7.2.1,

— roller shall not sag more than 2 mm (see Figure 1, key 1 “distance”);

— roller shall continue to function correctly without any distortion;

— no roll shall deviate by more than 5 % of its initial diameter.



key

1 distance
2 roller
3 Rail
4 Part of the test rig (example)

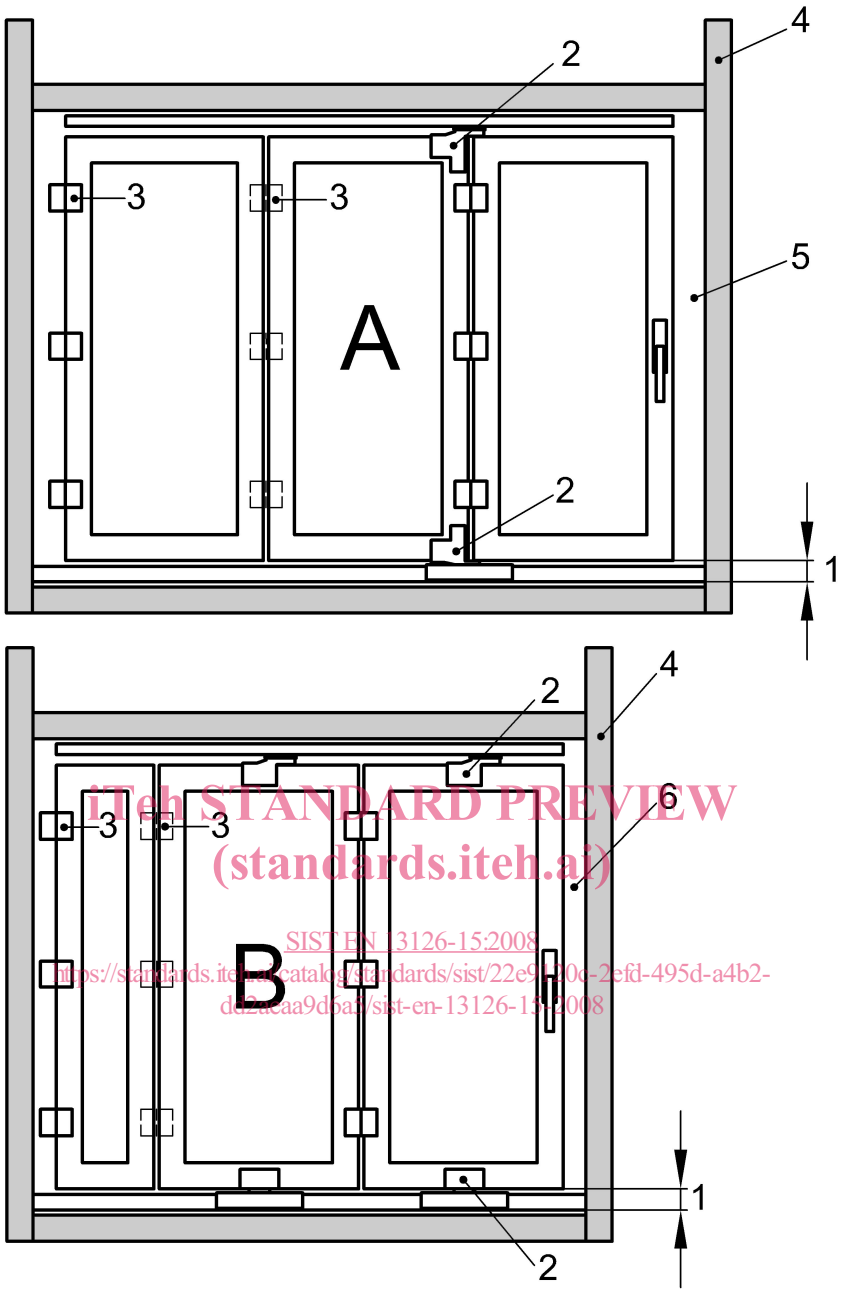
Figure 1 — Roller sagging after durability test

5.2.2 Durability test for the complete sliding folding hardware set (window type Q, R and S)

Upon completion of the durability tests in accordance with 7.2.2,

— hardware set shall continue to function correctly without any distortion,

— hardware set shall ensure that the sashes do not sag more than 2 mm (see Figure 2, key 1 “distance”).



key

1	distance
2	roller or lateral guide
3	hinges
4	part of the test rig (example)
5	corner pivot sliding folding window
6	centre pivot sliding folding window
A	window types R and S
B	window type Q

Figure 2 — Sagging of sliding folding hardware set after durability test