



**SLOVENSKI STANDARD**  
**SIST EN 13126-6:2009**  
**01-marec-2009**

**BUXca Yý U**  
**SIST-TS CEN/TS 13126-6:2005**

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

Baubeschläge - Anforderungen und Prüfverfahren für Fenster und Fenstertüren - Teil 6: Scheren mit veränderlicher Geometrie (mit oder ohne Friktionssystem)

Quincaillerie pour le bâtiment - Exigences et méthodes d'essai des ferrures de fenêtres et portes-fenêtres - Partie 6: Compas à friction à géométrie variable

**Ta slovenski standard je istoveten z: EN 13126-6**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13126-6**

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Supersedes CEN/TS 13126-6:2004

English Version

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

Quincaillerie pour le bâtiment - Exigences et méthodes  
d'essai des ferrures de fenêtres et portes-fenêtres - Partie  
6: Compas à friction à géométrie variable (avec ou sans  
système de friction)

Baubeschläge - Beschläge für Fenster und Fenstertüren -  
Anforderungen und Prüfverfahren - Teil 6: Scheren mit  
veränderlicher Geometrie (mit oder ohne Friktionssystem);  
Deutsche Fassung EN 13126-6:2008

This European Standard was approved by CEN on 5 October 2008.

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

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**EN 13126-6:2008 (E)****Foreword**

This document (EN 13126-6:2008) 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 May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

This document supersedes CEN/TS 13126-6:2004.

This European Standard is one of a series of European Standards dedicated to building hardware products.

A full contribution to the preparation of this European Standard has been made by the European manufacturers’ organization “ARGE” and national standards bodies.

EN 13126 *Building hardware — Requirements and test methods for windows and doors height windows* consists of the following parts:

Part 1: Requirements common to all types of hardware

Part 2: Casement fastener handles<sup>1)</sup>

Part 3: Manoeuvring fittings for espagnolette bolts/sliding button<sup>1)</sup>

Part 4: Espagnolette bolts<sup>1)</sup>

Part 5: Devices that restrict the opening of windows<sup>1)</sup>

Part 6: Variable geometry stay hinges (with or without a friction system)

Part 7: Finger catches

Part 8: Tilt&Turn, Tilt-First and Turn-Only hardware

Part 9: Pivot hinges<sup>1)</sup>

Part 10: Arm balancing systems

Part 11: Top hung projecting reversible hardware

Part 12: Side hung projecting reversible hardware

Part 13: Sash balances<sup>1)</sup>

Part 14: Sash fasteners<sup>1)</sup>

Part 15: Rollers for horizontal sliding and sliding folding windows and doors

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<sup>1)</sup> To be revised, for the time being CEN/TS.

Part 16: Hardware for Lift&Slide windows and doors

Part 17: Hardware for Tilt&Slide windows and doors

Part 18: Fan light openers for windows and door height windows

Part 19: Sliding Closing Devices (SCD) for windows and door height windows

Informative Annex A of EN 13126-1:2006 gives detailed schedules of the elements of components of the 17 first parts of this European Standard.

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

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.

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.

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**EN 13126-6:2008 (E)****1 Scope**

This part of EN 13126 specifies requirements and test methods for durability, strength, security and function of mechanically operated variable geometry stay hinges (with or without a friction system).

By means of this European Standard, the user of recognized tested hardware can assume that with correct usage, the variable geometry stay hinges (with or without a friction system) for windows conform to prescribed requirements.

NOTE 1 This European Standard is applicable to variable geometry stay hinges (with or without a friction system) whether fitted with integral restrictors or not.

NOTE 2 Balancing stay arms/hinges do not represent a friction system.

NOTE 3 For the purposes of this European Standard, the friction system is achieved by friction pads or similar.

**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*

CEN/TS 13126-5, *Building hardware — Requirements and test methods for windows and doors height windows — Part 5: Devices that restrict the opening of windows*

ISO 4520:1981, *Chromate conversion coatings on electroplated zinc and cadmium coatings*

**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 windows made of wood, PVC-u, aluminium or steel and their appropriate material combinations.

**3.1****variable geometry stay hinge (with or without a friction system)**

hinge mechanism which has one or more link arms connecting the frame to the opening casement; the point about which the casement pivots being near the outer end of a link arm. The freedom of movement of the variable geometry stay hinge system is controlled by the friction between some or all of its moveable components

NOTE Friction is usually applied either at the pivot points or between a sliding shoe and its track.



**3.2****working stack height**

perpendicular distance between the outer faces of the frame plate and casement plate of a variable geometry stay hinge (with or without a friction system)

**3.3****pull-in**

characteristic of the design of the variable geometry stay hinge (with or without a friction system), which maintains the non-locking edge of a casement in contact with the window frame or weather stripping when the casement fastener is closed

**3.4****integrated restrictor**

mechanism that is an integral part of the variable geometry stay hinge (with or without a friction system) that limits the initial opening of the window

**3.5****declared minimum opening**

distance measured between the nearest adjacent edges of the sash and frame as the outward movement, from fully closed to where the friction in a variable geometry stay hinge with a friction system is sufficient to conform to the requirements of 7.3

**4 Classification****4.1 General**

The classification for variable geometry stay hinge (with or without a friction system) shall be in accordance with the requirements of EN 13126-1:2006, Clause 4.

**4.2 Category of use (1 – first digit)**

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

**4.3 Durability (2 – second digit)**

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

**4.4 Mass (3 – third digit)**

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

**4.5 Fire resistance (4 – fourth digit)**

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

— grade 0: no requirements.

**4.6 Safety in use (5 – fifth digit)**

One grade shall be identified in accordance with EN 13126-1:2006, 4.6.

— grade 1: hardware shall conform to the requirements of EN 13126-1 and EN 13126-6.

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**EN 13126-6:2008 (E)****4.7 Corrosion resistance (6 – sixth digit)**

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

**4.8 Security (7 – seventh digit)**

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

**4.9 Application (8 – eighth digit)**

The eighth digit shows “6/1”, “6/2” or “6/3” indicating the part of the standard which was used for testing the variable geometry stay hinges (with or without a friction system) and their common application to the following window assemblies in accordance with EN 13126-1:2006, 4.9. Three grades are identified:

- grade 6/1: indicating window operates on a horizontal axis of rotation:
  - type C: bottom-hung window, inward opening or outward opening;
  - type D: top-hung window, inward opening or outward opening;
  - type H: projecting top-hung window, inward or outward opening;
  - type J: projecting bottom-hung window, inward or outward opening;
  - type U: top-hung, inward opening window multi-light;
  - type V: bottom-hung, inward opening window multi-light;
- grade 6/2: indicating window operates on a vertical axis of rotation:
  - type A: side-hung window inward opening;
  - type B: side-hung window outward opening;
- grade 6/3: indicating the window operates on both horizontal and vertical axis of rotation.

**4.10 Test sizes – size limitations (9 – ninth digit)**

The ninth digit shows the test sizes in accordance with EN 13126-1:2006, 4.10 as follows:

S.W.<sup>2)</sup> in mm / S.H.<sup>3)</sup> in mm – tolerance of -2 mm/+0 mm

EXAMPLE 1 200 S.W. × 900 S.H.

Where a variable geometry stay hinge (with or without friction) operates on a horizontal axis of rotation, the test size is determined in accordance with Table 1.

Where a variable geometry stay hinge (with or without friction) operates on a vertical axis of rotation, the test size is determined in accordance with Table 2.

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<sup>2)</sup> S.W. = sash width

<sup>3)</sup> S.H. = sash height

Table 1 — Test window size for top hung variable geometry stay hinges

Overall length of variable geometry stay hinge (mm)	Sash width (mm)	Sash height (mm)
< 250	1 200	300
≥ 251 ≤ 350	1 200	450
≥ 351 ≤ 450	1 200	600
≥ 451 ≤ 550	1 200	750
≥ 551 ≤ 750	1 200	900
≥ 751	1 200	1 200

Where a manufacturer specifies the maximum height of the casement on which the variable geometry stay hinge (with or without a friction system) is to be used, the variable geometry stay hinge (with or without a friction system) shall be tested on the largest size up to and including that height.

Table 2 — Test window size for side hung variable geometry stay hinges

Overall length of variable geometry stay hinge (mm)	Sash width (mm)	Sash height (mm)
< 250	600	1 200
≥ 251 ≤ 500	750	1 200
≥ 501	900	1 200

Where a manufacturer specifies the maximum width of the casement on which the variable geometry stay hinge (with or without a friction system) is to be used, the variable geometry stay hinge (with or without a friction system) shall be tested on the largest size up to and including that width.

#### 4.11 Example of classification for variable geometry stay hinges (with or without a friction system – EN 13126-6)

An example classification is shown in Table 3.

Table 3 — Example of classification for variable geometry stay hinges

1	2	3	4	5	6	7	8	9
–	5	020	0	1	3	–	6/1	1 200/900

This denotes variable geometry stay hinges (with or without a friction system), which has the following:

Digit 1	category of use	– (no requirements);
Digit 2	durability	grade 5 (25 000 cycles);
Digit 3	mass	20 kg;
Digit 4	fire resistance	grade 0 (no requirements);
Digit 5	safety in use	grade 1;
Digit 6	corrosion resistance	grade 3;