



SLOVENSKI STANDARD

SIST-TS CEN/TS 13126-1:2005

01-januar-2005

Stavbno okovje, pritrjevalni sistemi za okna in zastekljena vrata – Zahteve in preskusne metode – 1. del: Zahteve, skupne vsem vrstam pritrjevalnih sistemov

Building hardware, fittings for windows and door height windows - Requirements and test methods - Part 1: Requirements common to all types of fittings

Baubeschläge, Beschläge für Fenster und Fenstertüren - Anforderungen und Prüfverfahren - Teil 1: Gemeinsame Anforderungen an alle Arten von Beschlägen

Quincaillerie pour le bâtiment, ferrures de fenestres et portes-fenestres - Prescription et méthodes d'essais - Partie 1 : Prescriptions communes a tous types de ferrures

<https://standards.iteh.ai/catalog/standards/sist/c16d80fb-ea2c-48ed-b8d4-37725a699c06/sist-ts-cen-ts-13126-1-2005>

Ta slovenski standard je istoveten z: CEN/TS 13126-1:2004

ICS:

91.190 Stavbna oprema Building accessories

SIST-TS CEN/TS 13126-1:2005 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN/TS 13126-1:2005](#)

<https://standards.iteh.ai/catalog/standards/sist/c16d80fb-ea2c-48ed-b8d4-37725a699c06/sist-ts-cen-ts-13126-1-2005>

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 13126-1

April 2004

ICS 91.190

English version

**Building hardware, fittings for windows and door height windows
- Requirements and test methods - Part 1: Requirements
common to all types of fittings**

Quincaillerie pour le bâtiment, ferrures de fenêtres et
portes-fenêtres - Prescription et méthodes d'essais - Partie
1 : Prescriptions communes à tous types de ferrures

Baubeschläge, Beschläge für Fenster und Fenstertüren -
Anforderungen und Prüfverfahren - Teil 1: Gemeinsame
Anforderungen an alle Arten von Beschlägen

This Technical Specification (CEN/TS) was approved by CEN on 18 August 2003 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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.

<https://standards.iteh.ai/catalog/standards/sist/c16d80fb-ea2c-48ed-b8d4-37725a699c06/sist-ts-cen-ts-13126-1-2005>



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

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

CEN/TS 13126-1:2004 (E)

Contents

	Page
Foreword	3
Introduction	4
1 Scope.....	5
2 Normative references.....	6
3 Terms and definitions	6
4 Classification	6
5 Requirements common to all types of fitting.....	8
6 Test apparatus.....	11
7 Test methods.....	12
8 Test Procedures	13
9 Marking.....	14
Annex A (informative) List of parts and titles to individual product specifications	15
Annex B (informative) Window types and list of the Parts of CEN/TS 13126 which apply to the fittings commonly used on each type	16
Annex C (Informative) Test rig	27
Annex D (Informative) Typical flow chart	28
Bibliography	29

Foreword

This document (CEN/TS 13126-1:2004) 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 Technical Specification is one of a series of Technical Specifications dedicated to building hardware products. It is divided into seventeen parts to incorporate all types of fittings for windows and door height windows.

Informative annex A identifies the elements of components incorporated in each of the seventeen parts of this Technical Specification.

Normative annex B illustrates the 21 window types of opening in common use with a list of fittings applicable to each including references to the parts of this Technical Specification that contain test methods and performance requirements for those fittings

Informative annex C illustrates a typical test rig assembly for all window types and materials.

Where appropriate additional normative and informative annexes are included in the respective part.

The performance tests incorporated in this Technical Specification 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 Technical Specification: 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.

CEN/TS 13126-1:2004 (E)**Introduction**

The series of Technical Specifications numbered 13126 is a graded product standard. The fittings are tested on a standard test frame independently of the windows to which they may be fitted. The standard test frame is intended to eliminate any inconsistency of results that may arise through the variability between different materials used for the construction of windows.

Throughout this Technical Specification all references to windows incorporates both windows and door height windows where appropriate.

This Technical Specification applies only to fittings that connect a movable leaf to its fixed frame or control the opening and closing of the movable leaf. It does not take fixing devices into account that are used to assemble or install window frame components or permanently fix a complete window into a building structure.

Where possible, test methods have been unified in order to accommodate a wide range of window-types and fittings. In particular, unification of sizes and mass of moving leaves or sashes, frequency and total number of test cycles and the range of operations of the movable leaf or sash during each test cycle has been maintained.

This Technical Specification excludes selected fittings that are suitable for use on both doors and windows (single axis hinges and door bolts) since requirements for these products are specified in other standards as listed in the relevant text.

Fixings used to install fittings on windows or door height windows are not covered by this Technical Specification. Such fixing devices vary according to the different materials used in the construction of windows. For this reason window fittings being tested may be securely fixed to the test apparatus by suitable mechanical means that may differ from those normally used.

Standards for the performance of complete window assemblies ensure that the correct choice of type and grade of fittings and the effectiveness of the methods of fixing are verified by tests carried out on the complete assembly.

Fittings should be lubricated according to the requirements of the manufacturer's fixing and maintenance instructions. If no lubrication is specified, the test should be undertaken on the product as supplied.

NOTE It is an essential requirement for certain hinges, restricted opening devices that limit the initial opening of a window, devices that hold a window in a fixed open position for ventilation, cleaning or maintenance, and devices that hold a window in a fully reversed position for cleaning of exterior glass, that they should not fail in service in a manner that may cause or permit personal injury. Accordingly, the test methods in this Technical Specification include overload tests which ensure that such safety related devices have a margin of strength in excess of that required for normal operation, even if after such tests the normal function of the window is no longer possible.

1 Scope

This part specifies performance requirements for the strength and durability of fittings for the operation of movable leaves of windows and door height windows including requirements and test methods common to all fittings.

This Technical Specification is applicable to the fittings suitable for windows and door height windows listed in Table 1 and illustrated in normative annex B, whatever the material used for the construction of the window.

Window type	Description	Figure
A	Side-hung casement inward opening	B1
B	Side-hung casement outward opening	B1
C	Bottom-hung casement inward opening and outward opening	B2
D	Top-hung casement inward opening and outward opening	B2
E	Tilt and turn casement and turn and tilt casement	B3
F	Horizontal pivot casement	B4
G	Vertical pivot casement	B4
H	Projecting top-hung inward and outward opening casement	B5
J	Projecting bottom-hung inward and outward opening casement	B5
K	Top-hung projecting reversible casement	B6
L	Side-hung projecting reversible casement	B7
M	Vertical sliding sash	B8
N	Horizontal sliding sash	B9
P	Lifting sliding sash	B10
Q	Folding casement (centre pivot)	B11
R	Folding outward opening casement (corner pivot)	B12
S	Folding inward opening casement (corner pivot)	B12
T	Tilting sliding sash	B13
U	Top-hung inward opening casement multi-light	B14
V	Bottom-hung inward opening casement multi-light	B14
W	Horizontal balanced casement	B15

This Technical Specification does not apply to the following: -

Fusible links, fittings for lifting side-hung casements; fittings for windows that remain parallel to their own plane and move perpendicular to it on pantograph type gear, devices that are used for the permanent connection of window frame members to each other, devices that are used for the permanent fixing of complete window assemblies into the structure of a building, mechanisms for the remote operation of windows, whether mechanical, electrical, pneumatic or hydraulic.

Single axis hinges (other than those, which provide a pivot-function for windows) and dead bolts suitable for both door and window leaves are excluded. Such requirements are included in EN 1935 and EN 12051 respectively.

In addition to the performance testing required by this Technical Specification, where window fittings are to be used in situations that require fire/smoke or burglar resistance classification, the fittings should be incorporated in and tested within the complete assembly. Reference should be made to the following:

CEN/TS 13126-1:2004 (E)

- a) fire performance or resistance to smoke control: their suitability should be determined by fire performance tests which are conducted in accordance with EN 1634-1 for fire resistance and/or smoke control performance tests conducted in accordance with EN 1634-3.
- b) burglar resistance, should be determined by tests in according to ENV 1627, 1628, 1629 and 1630.

2 Normative references

This Technical Specification incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this Technical Specification only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 1634 -1, *Fire resistance tests for door and shutter assemblies - Part 1: Fire doors and shutters.*

EN 1634-3, *Fire resistance tests for door and shutter assemblies - Part 3: Smoke control doors and shutters*

EN 1670, *Building hardware – Corrosion resistance – Requirements and test methods.*

EN 1935, *Building hardware – Single axis hinges – Requirements and test methods*

EN 12051, *Building hardware – Door and window bolts – Requirements and test methods*

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

ENV 1627, *Windows, doors, shutters – Burglar resistance – Requirements and classification.*

ENV 1628, *Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under static loading*

ENV 1629, *Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading*

ENV 1630, *Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts*

3 Terms and definitions

For the purposes of this Technical Specification, the terms and definitions given in EN 12519:2004 for windows and doors apply.

4 Classification**4.1 General**

For the purpose of this Technical Specification, fittings for windows and door height windows shall be classified according to the nine digit coding system as shown below. This coding system should also be used for a complete set of fittings for a specific window type, for example a complete set of tilt and turn window fittings.

Table 2 – Classification for fittings for windows and door height windows

1	2	3	4	5	6	7	8	9
Category of use	Durability	Mass	Fire	Safety in use	Corrosion	Security	Application	Test Sizes

4.2 Category of use (first digit)

No requirement

4.3 Durability (second digit)

Three grades are identified where grade 3 is the lowest.

- grade 3 : 10 000 cycles
- grade 4 : 15 000 cycles
- grade 5 : 25 000 cycles

4.4 Mass (third digit)

The third digit displays the maximum tested leaf-mass. The mass range starts from 10 kg and varies unlimited in steps of 5 kg. An unlimited amount of grades are identified, whereby **010** is the lowest (see Table 3).

For example:

A window weighing 15 kg would be **015** and a window weighing 120 kg would be **120**

4.5 Fire resistance (fourth digit)

One grade is identified

- grade 0 : no requirement

4.6 Safety in use (fifth digit)

All window fittings must satisfy the requirements stated here in part 1 and depending on the window-type, according to the relevant parts 2 until 17. For this reason only one grade is identified

- grade 1: the product shall conform to the safety of use

4.7 Corrosion resistance (sixth digit)

Two grades are identified according to EN 1670

- grade 3: high resistance (class 3)
- grade 4: very high resistance (class 4)

For Zinc galvanised surfaces on iron or steel the specified thickness of 12 µm (class 3) is not necessary if other surface protection methods are used to comply with the requirements of ISO 4520.

4.8 Security (seventh digit)

No requirement

CEN/TS 13126-1:2004 (E)**4.9 Application (eighth digit)**

The application of the individual window fittings shall be listed in Table 1, as identified by testing the window types and designated in the list of fittings appropriate to the window type as given in Table 4.

In the event of the fitting being suitable for more than one application each application shall be listed separately.

4.10 Test Sizes (ninth digit)

The size limitations shall be identified in accordance with the requirements of the window type as given in Table 4.

4.11 Example of classification for pivot hinges (CEN/TS 13126-9)

1	2	3	4	5	6	7	8	9
—	3	040	0	1	3	—	F,G	17

This denotes pivot hinges, which have:

Digit 1	no requirements for category of use
Digit 2	durability grade 3
Digit 3	mass 40kg
Digit 4	fire resistance grade 0
Digit 5	safety in use grade 1
Digit 6	corrosion resistance grade 3
Digit 7	security no requirement
Digit 8	application tested for use on window types F and G
Digit 9	test sizes designated window size reference 17

5 Requirements common to all types of fitting.**5.1 Dangerous substances**

Materials in products shall not release any dangerous substances in excess of the maximum levels specified in the European material standards and any National regulations.

5.2 Samples

Three samples, unless stated otherwise, of each fitting shall be used for testing to this Technical Specification.

- sample A – performance testing
- sample B – corrosion testing
- sample C – retained for reference control

Sample B should only be necessary if no certification can be supplied from the manufacturer regarding the testing of the fittings according to EN 1670.

Sample C shall be retained by the Test House for the duration of the validity of the test report.

5.3 Category of use (first digit)

No category of use has been defined for window fittings.

5.4 Durability (second digit)

All durability tests shall be conducted using the test apparatus as defined in clause 6.

NOTE In the event of products being available for both left and right-handed operation, it is only necessary for one version to be tested.

Fittings, which are used in pairs, e.g. pivots, should be tested in pairs.

5.5 Mass (third digit)

The mass of the test window shall be determined according to the claims made by the fittings manufacturer. The test apparatus is to be loaded ensuring that the mass is equally distributed around the centre point.

Table 3 – Total mass of movable window

Grade	010	015	020	025	030	035	040	045	050	055	060	065	...
Mass (kg).	10	15	20	25	30	35	40	45	50	55	60	65	...

5.6 Fire resistance (fourth digit)

Where fittings are required for use in situations that require fire performance or smoke control they shall be subjected to the appropriate test to prove the effect of the product in the complete window assembly in accordance with the following:

- fire performance: their suitability shall be determined by the fire performance tests conducted in accordance with EN 1634-1
- smoke control: their suitability shall be determined by the smoke control performance tests conducted in accordance with EN 1634-3

NOTE 1 It is not necessary for the fitting to operate after such tests.

NOTE 2 The fire and smoke tests are in addition to the performance tests required by this Technical Specification

NOTE 3 Until the appropriate Technical Specification has been approved and published, existing National Standards still apply.

5.7 Safety in use (fifth digit)

All window fittings must satisfy the requirements stated here in part 1 and depending on the window-type, according to the relevant parts 2 until 17.

5.8 Corrosion resistance (sixth digit)

Fittings shall conform to:

- grade 3: high resistance (EN 1670 - class 3) or
- grade 4: very high resistance (EN 1670 - class 4)

For Zinc galvanised surfaces on iron or steel the specified thickness of 12 µm (class 3) is not necessary if other surface protection methods are used to comply with the requirements of ISO 4520.

If no certification according to EN 1670 can be supplied from the manufacturer, a test is then necessary.

CEN/TS 13126-1:2004 (E)

5.9 Security (seventh digit)

In addition to the performance testing required by this Technical Specification, where window fittings are to be used in situations that require burglar resistance classification, the fittings should be incorporated in and tested within the complete assembly according to ENV 1627, 1628, 1629 and 1630.

5.10 Application and test sizes (eighth and ninth digits)

Table 4 summarises the full range of window types, test window sizes and fittings appropriate for use with each window type.

Table 4 – Designated sizes of test windows

Window type	Requirements and test methods	Fitting to be tested	Test window size		
			Ref No	S.R.W.* mm	S.R.H.* mm
A-B-C-D-F-G H-J-K-L E U-V-W	CEN/TS 13126-5	Devices that restrict the opening of windows	3	700	1 400
			8	900	2 300
			2	700	500
A-B-H-V	CEN/TS 13126-6	Variable geometry stay hinges with or without friction (top hung or bottom hung)	1	600	1 200
			5	750	1 200
			7	900	1 200
			10	1 200	300
			11	1 200	450
			12	1 200	600
			13	1 200	750
			14	1 200	900
			15	1 200	1 200
			C-D-F-G-H-J U-V-W	CEN/TS 13126-7	Finger catches
A-B-E	CEN/TS 13126-8	Tilt and turn-turn and tilt casements.	16	1 300	1 200
			23	1 550	1 400
			8	900	2 300
F-G	CEN/TS 13126-9	Pivot hinges	17	1 400	1 400
H-U	CEN/TS 13126-10	Arm balancing systems	15	1 200	1 200
			2	700	500
K	CEN/TS 13126-11	Top hung projecting reversible fittings	19	1 500	1 500
L	CEN/TS 13126-12	Side hung projecting reversible fittings	6	800	1 100
M	CEN/TS 13126-13	Sash balances	9	1 100	1 400
N-Q-R-S	CEN/TS 13126-15	Rollers for sliding/folding casement (centre & corner pivot)	21	700	1 400
			22	700	2 300
P	CEN/TS 13126-16	Fittings for lift and slide systems	20	1 600	1 400
T	CEN/TS 13126-17	Fittings for tilt and slide systems	8	900	2 300

* S.R.W. = Sash Rebate Width, S.R.H. = Sash Rebate Height