BS EN 13126-5:2011+A1:2014

BSI Standards Publication

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

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National foreword

This British Standard is the UK implementation of EN 13126-5:2011+A1:2014. It supersedes BS EN 13126-5:2011 which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by ⟨A1⟩ ⟨/A1⟩.

The UK participation in its preparation was entrusted by Technical Committee B/538, Doors, windows, shutters, hardware and curtain walling.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
30 November 2014	Implementation of CEN amendment A1:2014

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13126-5:2011+A1

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Supersedes EN 13126-5:2011

English Version

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

Quincaillerie pour le bâtiment - Exigences et méthodes d'essai des ferrures de fenêtres et portes-fenêtres - Partie 5: Dispositifs limiteurs d'ouverture des fenêtres et portes-fenêtres

Baubeschläge - Beschläge für Fenster und Fenstertüren - Anforderungen und Prüfverfahren - Teil 5: Vorrichtungen zur Begrenzung des Öffnungswinkels von Fenstern

This European Standard was approved by CEN on and includes Amendment 1 approved by CEN on 22 September 2014.

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Foreword

This document (EN 13126-5:2011+A1:2014) 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 2015, and conflicting national standards shall be withdrawn at the latest by May 2015.

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 ⟩A1⟨ EN 13126-5:2011 ⟨A1⟩.

This document includes Amendment 1 approved by CEN on 2014-09-22.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟩A1⟨ ⟨A1⟩.

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

This European Standard is one of a series of European Standards dedicated to building hardware products. It is divided into many parts, the first part being common to all the other parts of this standards series, incorporating all types of hardware for windows and door height windows.

Annex A (informative) of EN 13126-1 lists the titles of all parts of this European Standard and refers to their different window opening-type applications.

Annex B (informative) of EN 13126-1 provides a list of the elements of components used on the various types of window opening functions.

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.

⟩A1⟨ *deleted text* ⟨A1⟩

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, 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

[A1] This Part of EN 13126 specifies requirements and test methods for durability, strength, security and functionality of devices that restrict the opening of windows and door height windows.

On devices that restrict the opening of

- Tilt&Turn, Tilt-First, Turn-Only, or Tilt-Only windows and door-height windows
- horizontal and vertical pivot windows and door height windows
- side-hung Casements and top–hung windows and door height windows (opening outwards)

this part of EN 13126 only applies, if a restriction of the opening occurs within the specification in Annex A, E or G of EN 1191:2012 in accordance with the intended use specified by the manufacturer. [A1]

NOTE 1 Restrictors and reverse restrictors can be either a separate item of hardware or an integral part of hardware, for example a part of the operating gear or an integral part of a hinge.

NOTE 2 Windows may be fitted with more than one restrictor.

NOTE 3 The requirements included within this standard take the needs for child safety into consideration, child protective window restrictors intended to be installed by the end consumers are beyond the scope of this standard. Therefore, for the DIY market refer to PC398 and [A1] EN 16281 [A1].

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, *Windows and pedestrian doors - Terminology*

EN 13049, *Windows - Soft and heavy body impact - Test method, safety requirements and classification*

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

[A1] CEN/TR 13387, *Child use and care articles - Safety guidelines* [A1]

ISO 8317, *Child-resistant packaging — Requirements and testing procedures for reclosable packages*

3 Terms and definitions

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

3.1
limiting restrictor (including maximum opening stops)
device intended to limit the movement of an active sash to a predetermined position

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3.2
holding restrictor (including peg type casement stays)
mechanical device which is intended to hold the active sash in a predetermined position

3.3
reverse restrictor
mechanical device which holds a reversed active sash securely for cleaning

3.4
safety restrictor
robust mechanical device intended to limit the initial movement of an active sash in a predetermined position, maximum 100 mm, to prevent accidental passage through the window

3.5
child safety restrictor
〖A1〗robust mechanical device intended to limit the initial movement of an active sash in a predetermined position, maximum 89 mm, to prevent the passage of small children (passage of small children aged from 9 to 12 months in accordance with CEN/TR 13387)〈A1〉

4 Classification

4.1 General

The classification for devices that restrict the opening of windows shall be in accordance with the requirements of EN 13126-1.

4.2 Category of use (1 – first digit)

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

4.3 Durability (2 – second digit)

Grades shall be in accordance with EN 13126-1.

4.4 Mass (3 – third digit)

Grades shall be in accordance with EN 13126-1.

4.5 Fire resistance (4 – fourth digit)

Grades shall be in accordance with EN 13126-1.

4.6 Safety in use (5 – fifth digit)

One grade shall be identified in accordance with EN 13126-1.

Hardware with safety requirements shall show a grade as generated from Table 1.

The grade shall consist of two digits separated by a slash.

The first of the digits shall represent the testing performed to conform to the selected safety requirements as shown in Table 2.

The second of the digits shall represent the impact test drop height as shown in 5.7.

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Table 1 — Safety in use grades

Safety requirement grade	Impact test drop height grade
1 : No requirements	0 : No requirements
2 : Safety requirements	1 : 200 mm
3 : Child safety requirements	2 : 300 mm
	3 : 450 mm
	4 : 700 mm
	5 : 950 mm
EXAMPLE Grade 3/2 – Child safety requirements. 300mm drop height for impact test.	

4.7 Corrosion resistance (6 – sixth digit)

Grades shall be in accordance with EN 13126-1.

4.8 Security (7 – seventh digit)

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

4.9 Application (8 – eighth digit)

The eighth digit shows a grade as indicated in Table 2 indicating the part of the standard which was used for testing the devices that restrict the opening of windows in accordance with EN 13126-1. Seven grades are identified.

Table 2 — Application grade

	Safety in use grade (5th digit)	**1**				**2**			**3**	
	Application Grade (8th digit)	**5/1**	**5/2**	**5/3**		**5/4**	**5/5**		**5/6**	**5/7**
Clause	**Description**	**Limiting restrictor**	**Holding restrictor**	**Reverse restrictor**		**Safety limiting restrictor**	**Safety holding restrictor**		**Child safety limiting restrictor**	**Child safety holding restrictor**
5.2.2	Safety initial opening (max. 100 mm)					X	X			
5.2.3	Child safety initial opening (max. 89 mm)								X	X
5.3.2	Restrictor operation cycle	X	X			X	X		X	X
5.3.3	Restrictor engage and release cycle	X	X	X		X	X		X	X
5.4.2	Hold open strength 200 N		X				X			X
5.4.3	Restrictor strength 350 N	X	X	X		X	X			
5.4.4	Child safety restrictor strength 500 N								X	X
5.5	Static load					X	X		X	X
5.6	Percussion								X	X
5.7	Impact					X	X		X	X
5.8	Cutting					X	X		X	X

4.10 Test sizes – Size limitations (9 – ninth digit)

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

S.W. (sash width) in mm / S.H. (sash height) in mm

EXAMPLE 600 S.W. x 1 200 S.H.

NOTE The specified sizes are a test sizes only. It does not relate to the maximum sizes to which a window may be fabricated.

The window test size shall be determined by reference to the relevant part of the standards series for that hardware type or in accordance with Table 3.

Table 3 — Test window size (S.W. x S.H.)

	Test size A	Test size B	Test size C	Test size D	Test size E
Side Hung / Vertical Pivot	600 x 1 200	900 x 1 200	1 200 x 1 200	1 800 x 1 200	2 300 x 1 200
Top Hung / Horizontal Pivot	1 200 x 600	1 200 x 900	1 200 x 1 200	1 200 x 1 800	1 200 x 2 300

4.11 Example of classification for devices that restrict the opening of windows

1	2	3	4	5	6	7	8	9
-	**5**	**030**	**0**	**3/2**	**3**	**-**	**5/7**	**600/1 200**

This denotes a device that restricts the opening of windows, which has the following:

Digit 1	category of use	(no requirements)
Digit 2	durability	grade 5 (25 000 operation cycles, 3 750 engage and release cycles)
Digit 3	mass	30 kg
Digit 4	fire resistance	grade 0 (no requirements)
Digit 5	safety in use	grade 3/2 – Child safety requirements. 300 mm drop height for impact test
Digit 6	corrosion resistance	grade 3
Digit 7	security	(no requirements)
Digit 8	applicable part	grade 5/7; Child safety holding restrictor (max. 89 mm opening)
Digit 9	test sizes	S.W. = 600 mm, S.H. = 1 200 mm

5 Requirements

5.1 General

The requirements for devices that restrict the opening of windows shall be in accordance with EN 13126-1.

For restrictors that are a separate item of hardware the manufacturers' installation documentation shall make clear the application range (minimum and maximum dimensions) of the restrictor. (See Figure A.1)

Where a restricted initial opening dimension is specified the installation position on the window shall include the locating dimensions to ensure that the intended grade is achieved.

Where the functionality of the restrictor is determined by the installation position on the window, the locating dimensions shall ensure the hardware functions correctly.

Locating dimensions shall ensure the hardware functions correctly.

5.2 Initial opening test

5.2.1 General

The test specified in 7.2.1 shall be used to ensure the hardware restricts the initial movement of the active sash, in accordance with Table 2.

Safety hardware shall be tested in accordance with 5.2.2.

Child safety hardware shall be tested in accordance with 5.2.3.

The gauge type selected shall be relevant to the grade necessary. (See Figure A.2).

NOTE Where hardware has multiple restrictor functions, in addition to the intended safety / child safety restrictor function, only the intended safety / child safety restrictor function has to conform to the initial opening criteria between the sash and fixed outer frame.

5.2.2 Safety initial opening test (max. 100 mm)

Upon completion of the initial opening test in accordance with 7.2.2:

— Gauge A (see Figure A.2) shall not pass through the opening between the sash and frame (see Figure A.3) without any force applied; and

— the restrictor shall continue to function normally.

5.2.3 Child safety initial opening test (max. 89 mm)

Upon completion of the initial opening test in accordance with 7.2.3:

— gauge B (see Figure A.3) shall not pass through the opening between the sash and the frame (see Figure A.3) during the test;

— the restrictor shall continue to function normally; and

— the restrictor shall conform with one of the following three criteria:

a) the restrictor cannot be released to enable further opening; or

b) the restrictor is able to be secured against further opening with the use of a specifically designed removal device or tool; or

c) the restrictor is able to be secured against further opening with the use of a release mechanism which conforms to the requirements of ISO 8317 when tested in accordance with ISO 8317.

NOTE ISO 8317 “Child-resistant packaging — Requirements and testing procedures for reclosable packages” contains test procedures and pass/fail criteria for child-resistant packages. The same procedures are applicable to child safety restrictors.

5.3 Durability test

5.3.1 General

The tests specified in 7.3.2 and 7.3.3 shall be used to ensure the hardware is capable of continued operation after cycling in accordance with grades specified in 7.3.1, with regard given to normal maintenance.

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NOTE 1 The durability tests are not applicable to peg type casement stays.

NOTE 2 The engage and release cycle test is not applicable to maximum opening stop restrictors.

5.3.2 Restrictor operation cycle test

Upon completion of the restrictor operation cycle test in accordance with 7.3.2, the restrictor shall continue to function normally.

5.3.3 Restrictor engage and release cycle test

Upon completion of the restrictor engage and release cycle test in accordance with 7.3.3, the restrictor shall continue to function normally.

5.4 Mechanical strength test

5.4.1 General

The tests specified in 7.4.1, 7.4.2 and 7.4.3 shall be used to ensure a restrictor is able to achieve the necessary strength level, in accordance with Table 2.

Where a restrictor is graded as a hold open restrictor the hardware shall be tested in accordance with 5.4.2.

Unless otherwise specified, hardware shall be tested in accordance with 5.4.3.

Child safety functionality shall be tested in accordance with 5.4.4. Failure to ensure that restrictors conform to these requirements will result in safety being compromised.

5.4.2 Hold open strength test

Upon completion of the hold open strength test in accordance with 7.4.1:

— the restrictor shall remain engaged; and

— the restrictor shall continue to function normally.

5.4.3 Restrictor strength test

Upon completion of the strength test in accordance with 7.4.2:

— the restrictor shall remain engaged; and

— the restrictor shall continue to function normally.

5.4.4 Child safety restrictor strength test

Upon completion of the strength test in accordance with 7.4.3:

— the restrictor shall remain engaged;

— the restrictor shall continue to function normally.

5.5 Static load test

The test specified in 7.5 shall be used to ensure the restrictor can withstand a force to disengage.

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Upon completion of the static load test in accordance with 7.5:

— the restrictor shall remain engaged;

— the restrictor shall continue to function normally.

NOTE Static Load test should only be performed on restrictors where an accessible link, excluding cable style restrictors, is present between the frame and active sash.

5.6 Percussion test

The test specified in 7.6 shall be used to ensure that any accessible part of a restrictor protruding beyond the face of the sash is able to withstand a mass colliding with the protruding part.

Upon completion of the percussion test in accordance with 7.6:

— the restrictor shall remain fixed to the window;

— the restrictor shall remain engaged.

NOTE Percussion test should only be performed on restrictors that have accessible, protruding surfaces that are available for vertical percussions.

5.7 Impact test

The test specified in 7.7 shall be used to ensure the restrictor is able to withstand a mass colliding with the active sash.

Five grades have been identified:

Grade 1. 200 mm

Grade 2. 300 mm

Grade 3. 450 mm

Grade 4. 700 mm

Grade 5. 950 mm

Upon completion of the impact test in accordance with 7.7:

— the restrictor shall remain engaged;

— the restrictor shall continue to function normally.

5.8 Cutting test

The test specified in 7.8 shall be used to ensure a cord style restrictor is able to withstand being cut.

Upon completion of the cutting test in accordance with 7.8, the restrictor shall continue to function normally.

NOTE The cutting test is only applicable to cord style restrictors, i.e., manufactured from string, cable, wire, etc, that is not resistant to cutting.

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6 Test equipment

The devices that restrict the opening of windows shall be installed in the test specimen for testing as in EN 13126-1 and in accordance with the manufacturer's fixing instructions.

The hardware manufacturer shall provide test specimens for the testing institute. A drawing of the profile cross-section with relevant information shall be enclosed in the test application, which also contains the necessary hardware installation information for the windows.

The test shall be conducted on a test rig which corresponds in function and shape to the window for which the hardware was intended. The hardware tested shall conform to the manufacturer's recommendation for size and mass of the test specimen.

All tolerances shall be in accordance with EN 13126-1.

7 Test methods

7.1 Samples

Four samples shall be used for testing in accordance with this European Standard.

Sample A1 - performance tests

Sample A2 - impact test

Sample A3 - cutting test for cord style restrictors only

Sample B - corrosion test

Sample C - retained for reference control

NOTE 1 Impact test, and cutting test for cord style restrictors, should be carried out on a separate sample.

NOTE 2 Sample B should only be necessary if no test report can be supplied by the manufacturer regarding the testing of the hardware component or set in accordance with EN 1670.

NOTE 3 Sample C should be retained by the test institute for the duration of the validity of the test report.

7.2 Initial Opening test procedure

7.2.1 General

Use sample A1.

Open the sash from the fully closed position until the restrictor device is either engaged in its initial opening position, or is at the maximum limit of opening. Restrictors shall be manually operated, where necessary.

7.2.2 Safety initial opening test (max. 100 mm)

Attempt to pass Gauge A without applying any force through the largest clear opening between the sash and frame of the window. See Figure A.3.

Acceptance criteria are in accordance with 8.4 of EN 13126-1 and 5.2.2 of this standard.

7.2.3 Child safety initial opening test (max. 89 mm)

Apply a force of 350 N without shock for 60 s, to the sash in the direction of opening.

This force shall be applied to the sash in the most unfavourable way (i.e., position, direction).

While the force is applied attempt to pass Gauge B through the opening between sash and frame. (See Figure A.3)

Acceptance criteria are in accordance with EN 13126-1, and 5.2.3 of this standard.

7.3 Durability test

7.3.1 General

Use sample A1.

Cycle the restrictor in accordance with one of the following grades shown in Table 4 and with the reference velocity shown in Table 5 as measured on the closing edge. The reference velocity shall be measured in metres per second (m/s.)

Table 4 — Durability Grade Cycles

Grade	Restrictor operation cycles, 7.3.2	Engage and release cycles, 7.3.3
Grade 3	10 000 (+ 1 %) cycles	1 500 (+ 1 %) cycles
Grade 4	15 000 (+ 1 %) cycles	2 250 (+ 1 %) cycles
Grade 5	25 000 (+ 1 %) cycles	3 750 (+ 1 %) cycles

NOTE All moving parts requiring lubrication should be lubricated in accordance with the hardware manufacturers' instructions.

7.3.2 Restrictor operation cycle test procedure

Use sample A1.

Open the sash from the fully closed position until the restrictor device is either engaged in its initial opening position, or is at the maximum limit of opening. (See Figure A.4.)

Table 5 — Durability Mass / Velocity

Mass (M) kg	Velocity m/s
M ≤ 65	0.50
65 < M ≤ 100	0.35
100 < M ≤ 150	0.30
150 < M ≤ 200	0.25
200 < M ≤ 300	0.20
M > 300	0.18

Opening Cycle

The sash is set in motion with consistent acceleration and in a jerk and jolt-free manner. The reference velocity in accordance with Table 5 shall be reached at least 5 (+ 5) mm before the restricting position. After this, the sash shall move freely into the stopping/restricting position.

A rest time shall then be applied.

Return the window to the closed position.

Closing Cycle

Upon completion of the rest time, the sash is set in motion with consistent acceleration and in a jerk and jolt-free manner. The reference velocity in accordance with Table 5 shall be achieved 5 (+ 5) mm before reaching the closed-position. After this, the sash shall move freely into the closed position and stop there.

A rest time shall then be applied.

Acceptance criteria are in accordance with EN 13126-1, and 5.3.2 of this standard.

7.3.3 Restrictor engage and release cycle test procedure

Use sample A1.

Each cycle shall be from an unengaged state through the full engagement process of the limiting and/or holding mechanism, and then releasing the restrictor to return to an unengaged state.

Where suitable test equipment is not available it is permitted for this test to be carried out manually.

Acceptance criteria are in accordance with EN 13126-1, and ▌A1⟩ 5.3.3 ⟨A1▐ of this standard.

NOTE This test should be conducted on hardware not fitted to a window.

7.4 Mechanical Strength test

7.4.1 Hold open strength test procedure

Use sample A1.

Where restrictors have a hold open function the restrictor shall be engaged into this position and a force applied of 200 N without shock, for 60 s, to the sash in direction of closing. This force shall be applied perpendicular ± 5º to the plane of the sash, in the same plane as the specimen and at the mid point of the locking rail. (See Figure A.5)

Acceptance criteria are in accordance with EN 13126-1 and 5.4.2 of this standard.

7.4.2 Restrictor strength test procedure

Use sample A1.

Open the sash and engage the restrictor in the intended stop position to be tested.

Restrictors shall be manually operated, where necessary, to hold a window open.

Apply a force of 350 N without shock, for 60 s, to the sash in the direction of opening. This force shall be applied perpendicular ± 5º to the plane of the sash, in the same plane as the specimen and at the mid point of the locking rail. (See Figure A.6)

Acceptance criteria are in accordance with EN 13126-1 and 5.4.3 of this standard.

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7.4.3 Child Safety Restrictor strength test procedure

Use sample A1.

Open the sash and engage the restrictor in the intended stop position to be tested.

Restrictors shall be manually operated, where necessary, to hold a window open.

Apply a force of 500 N without shock for 60 s, to the sash in the direction of opening. Apply this force perpendicular ± 5º to the plane of the sash, in the same plane as the specimen and at the mid span position. (See Figure A.6)

Acceptance criteria are in accordance with EN 13126-1 and 5.4.4 of this standard.

7.5 Static Load test procedure

Use Sample A1.

Open the sash and engage the restrictor in the intended stop position to be tested. Restrictors shall be manually operated, where necessary, to hold a window open.

Apply a force of 200 N without shock for 60 s, to the restrictor at a position, and a direction, putting the most strain on the specimen to cause disengagement. (See Figure A.7).

Acceptance criteria are in accordance with EN 13126-1 and 5.5 of this standard.

7.6 Percussion test procedure

Use Sample A1.

The restrictor is operated to determine the point of attack by the percussion test. The point shall be selected to give the most severe impact on the hardware.

The pendulum is set so that the selected point of the restrictor is struck when the pendulum is horizontal.

The pendulum arm shall be revolving so that a fall angle of the pendulum shall be 45°. (See Figure A.8).

The pendulum shall be made of steel. The weight of the pendulum head shall be 0,3 kg and that of the pendulum arm 0,6 kg.

The restrictor is subjected to 3 percussions with the equipment (See Figure A.8).

Acceptance criteria are in accordance with EN 13126-1 and 5.6 of this standard.

7.7 Impact test procedure

Use Sample A1 or separate sample A2.

The test shall be performed in the restricted position in accordance with EN 13049.

Acceptance criteria are in accordance with EN 13126-1 and 5.7 of this standard.

7.8 Cutting test procedure

Use Sample A3.

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The cord style restrictor is mounted to the fixed base of the stamping tool and a force of 10 N ± 1 N is applied to the restrictor and held throughout the test to pull the cord taut. (See Figure A.9)

The moveable punch shall be rested onto the cord and a force shall be applied at a constant rate of 100 N/s until 3600 N is reached.

The stamping tool should be designed so that deformations, if any, do not affect the test result. The diameter of hole D_2 should be 0,02 mm to 0,04 mm bigger than the cylinder diameter D_1.

Acceptance criteria are in accordance with EN 13126-1 and 5.8 of this standard.

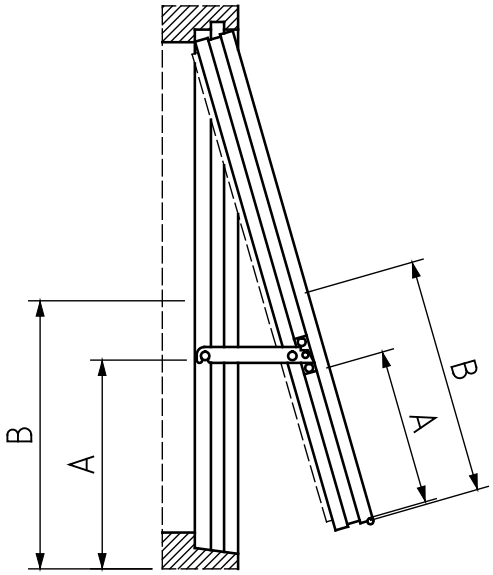
7.9 Corrosion resistance

Use Sample B.

Unless a test report has already been submitted by the manufacturer, the corrosion test shall be carried out in accordance with EN 1670 (with neutral salt spray).

Annex A
(informative)

Test equipment

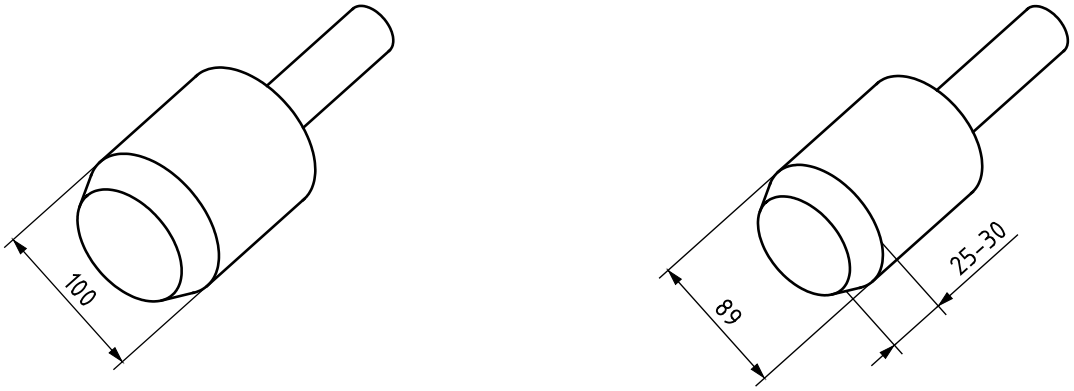


Key

1 minimum position

2 maximum position

Figure A.1 — Restrictor installation position



Gauge A
100 mm

Gauge B
89 mm

Figure A.2 — Gauge Types

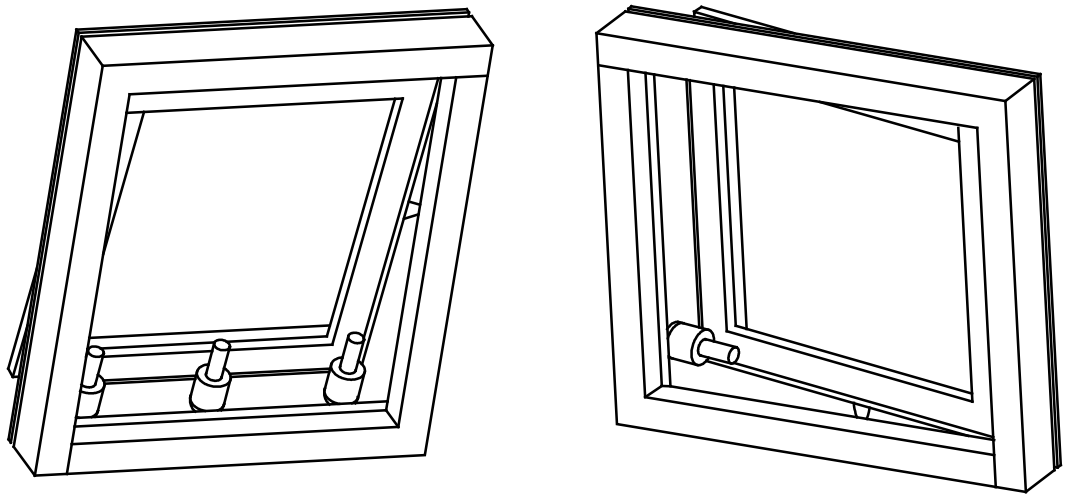
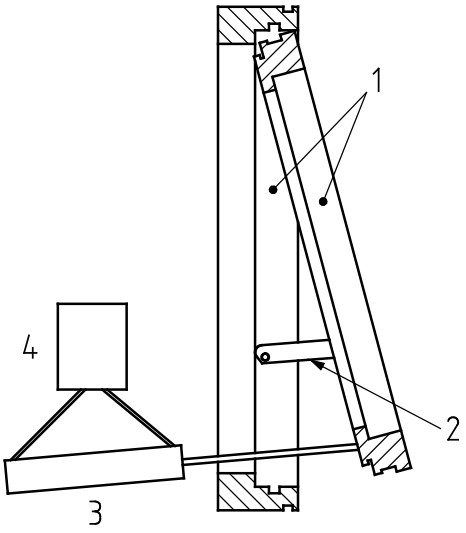


Figure A.3 — Gauge Clearance



Key

1 window assembly

2 restrictor specimen

3 pneumatic cylinder

4 control valve

Figure A.4 — Durability test rig

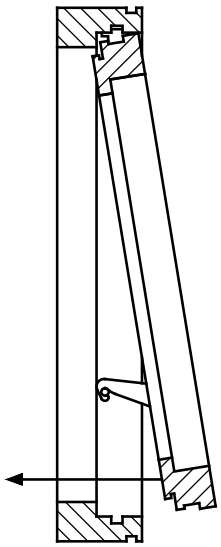


Figure A.5 — Hold open strength test

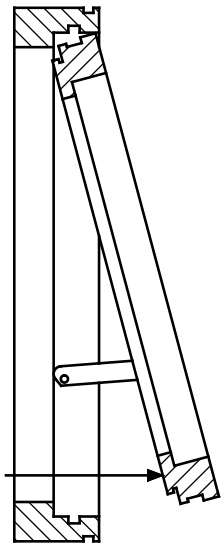


Figure A.6 — Restrictor/safety restrictor strength test

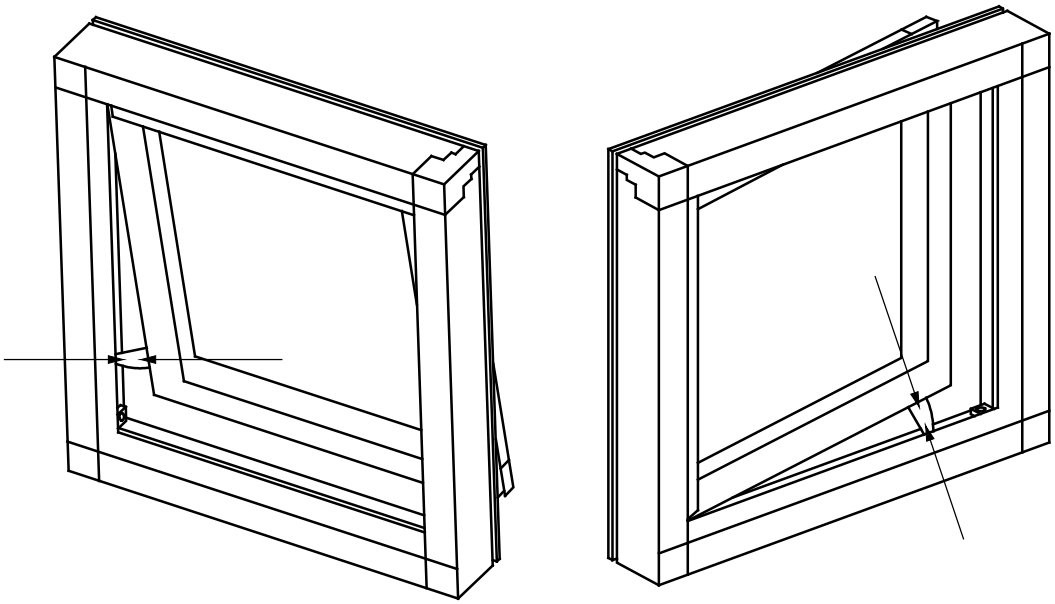


Figure A.7 — Static load test procedure

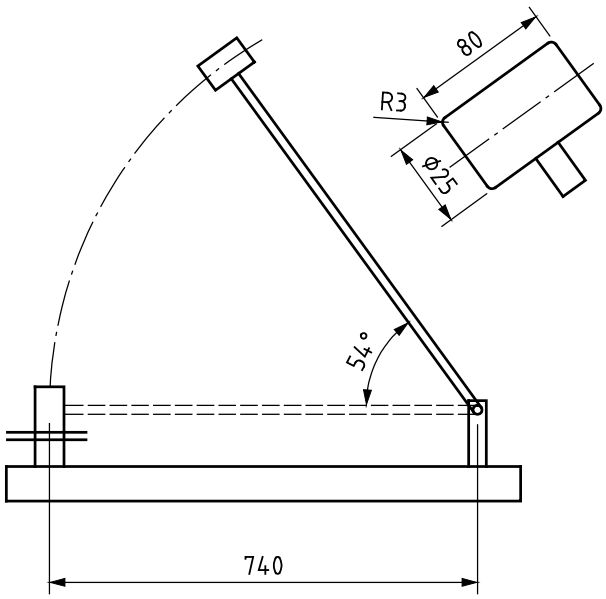
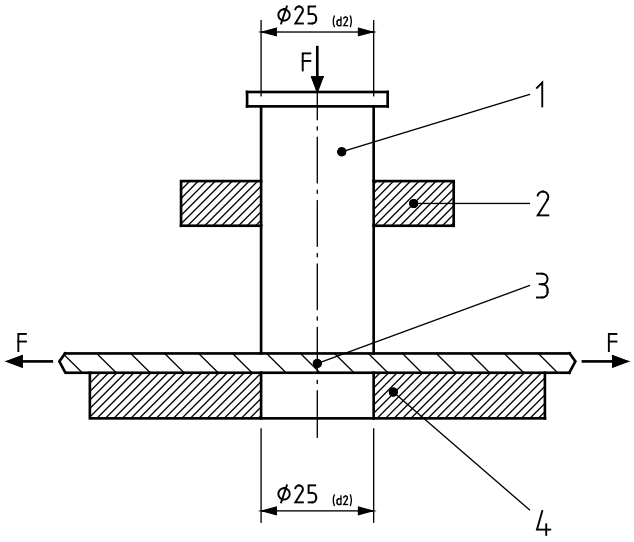


Figure A.8 — Percussion test



Key

1 movable part

2 guide

3 test object (sample)

4 fixed part

Figure A.9 — Cutting test

Annex B
(normative)

Test flow chart

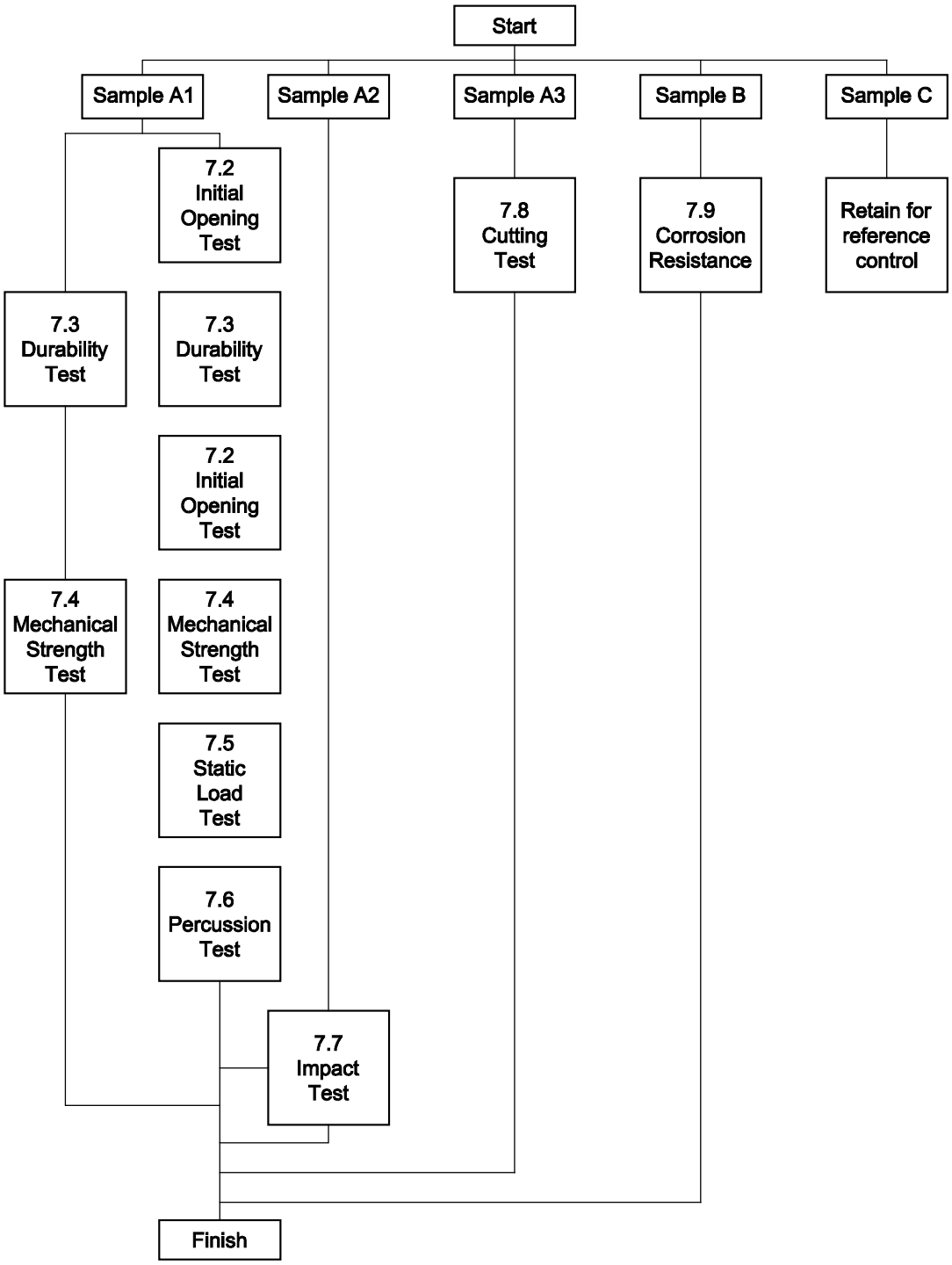


Figure B.1 — Flow chart of text procedure

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EN 14351-1, *Windows and doors — Product standard, performance characteristics – Part 1: Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics*

[A1] EN 16281 [A1], *Child protective products - Consumer fitted child resistant locking devices for windows and balcony doors - Safety requirements and test methods*

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