BS EN 13126-1:2011

BSI Standards Publication

Building hardware — Hardware for windows and door height windows — Requirements and test methods

Part 1: Requirements common to all types of hardware

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National foreword

This British Standard is the UK implementation of EN 13126-1:2011. It supersedes BS EN 13126-1:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/538/4, Building hardware.

A list of organizations represented on this committee 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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English Version

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

Quincaillerie pour le bâtiment - Ferrures de fenêtres et portes-fenêtres - Exigences et méthodes d'essai - Partie 1: Exigences communes à tous les types de ferrures

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

This European Standard was approved by CEN on 15 October 2011.

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-CENELEC 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-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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Foreword

This document (EN 13126-1:2011) 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 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

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 EN 13126-1:2006.

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) lists the titles of all parts of this European Standard and refers to their different window opening-type applications.

Where appropriate, additional normative and informative annexes are included in the respective part of this Standards series.

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.

There are no significant changes to the previous version. The conversion of the CEN/TS into EN introduced only marginal changes in the wording.

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, 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.

Introduction

EN 13126 is a multipart product standard which enables the testing of hardware components or sets. The components or sets are tested on a standard test frame independently of the windows to which they should be fitted. The standard test frame is intended to eliminate any test-result inconsistencies that may arise through the variability between different constructions of windows.

NOTE 1 In some cases where the hardware components or sets are tested directly on a test rig or window; a standard test frame is not necessary. The applicable test specifications are listed in the individual parts of this Standards series.

Throughout this European Standard all references to windows mean both windows and door height windows where appropriate.

This European Standard applies only to hardware that connects a movable sash to its fixed frame or controls the opening and closing of the movable sash. It does not take fixing devices into account that are used to assemble or install a fixed window or permanently fix a complete window into a building structure.

Where possible, test methods have been unified to accommodate a wide range of window opening-types and hardware. In particular, the following are unified for movable sashes:

a) size of the sash;

b) mass of the sash;

c) frequency and total number of test cycles;

d) range of operations during each test cycle.

This European Standard excludes hardware for use on both doors and windows (single axis hinges and door bolts) because requirements for these products are specified in other standards.

NOTE 2 The single complete standard consists of a combination of Part 1 together with one of the parts in this Standards series.

1 Scope

This European Standard specifies performance requirements for the strength and durability of hardware for the operation of movable sashes of windows and door height windows including requirements and test methods common to all hardware.

This European Standard is applicable to the hardware suitable for windows and door height windows in Table 1, whatever the material used for the construction of the window.

Table 1 — Window opening-types

Window opening-type	Description Description refers to EN 12519	Number of Figure in Annex B
A	Side-hung window inward opening *single (and double) side-hung casement, opening inwards*	B.1
B	Side-hung window outward opening *single (and double) side-hung casement, opening outwards*	B.1
C	Bottom-hung window inward opening and outward opening *bottom-hung casement, opening inwards or outwards*	B.2
D	Top-hung window inward opening and outward opening *top-hung casement, opening inwards or outwards*	B.2
E	Tilt&Turn, Tilt-First *tilt and turn windows*	B.3
F	Horizontal pivot window *horizontal pivot casement, centre or off-centre*	B.4
G	Vertical pivot window *vertical pivot casement, centre or off-centre*	B.4
H	Projecting top-hung inward and outward opening window *sliding projecting, top-hung casement, opening inwards or outwards*	B.5
J	Projecting bottom-hung inward and outward opening window *this type is not separately described in EN 12519*	B.5
K	Projecting reversible top-hung window *this type is not separately described in EN 12519*	B.6
L	Projecting reversible side-hung window *sliding projecting, side-hung casement, open out*	B.7
M	Vertical sliding sash *vertical sliding sash*	B.8
N	Horizontal sliding sash *horizontal sliding sash*	B.9
P	Lifting sliding sash *lifting sliding sash*	B.10
Q	Folding window (centre pivot) *this type is not separately described in EN 12519*	B.11
R	Folding outward opening window (corner pivot) *sliding folding window*	B.12
S	Folding inward opening window (corner pivot) *sliding folding window*	B.12
T	Tilting sliding sash *double tilting sliding sash*	B.13
U	Top-hung inward opening window multi-light *this type is not separately described in EN 12519*	B.14
V	Bottom-hung inward opening window multi-light *this type is not separately described in EN 12519*	B.14
W	Horizontal balanced window *this type is not separately described in EN 12519*	B.15

This European Standard does not apply to the following:

Fusible links, hardware for lifting side-hung windows, fixing devices that are used to assemble or install a fixed window, devices that are used for the permanent fixing of a complete window into a building structure, mechanisms for the pneumatic or hydraulic remote operation of windows; also single axis hinges (other than those, which provide a pivot-function for windows) and dead bolts suitable for both door and window sashes, as covered in EN 1935 and EN 12051 respectively.

NOTE 1 If fire/smoke resistance is required, reference should be made to the respective standards mentioned in 5.5.

NOTE 2 If burglar resistance is required, reference should be made to EN 1627, EN 1628, EN 1629 and EN 1630.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1634-1, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 1: Fire resistance tests for doors, shutters and openable windows*

EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 3: Smoke control test for door and shutter assemblies*

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

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

FprEN 13126-2, *Building hardware — Requirements and test methods for windows and door height windows — Part 2: Window fastener handles*

FprEN 13126-3, *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*

EN 13126-4, *Building hardware — Requirements and test methods for windows and door height windows — Part 4: Espagnolettes*

EN 13126-5, *Building hardware — Hardware for windows and balcony doors — Requirements and test methods — Part 5: Devices that restrict the opening of windows*

EN 13126-6, *Building hardware — Requirements and test methods for windows and doors height windows — Part 6: Variable geometry stay hinges (with or without a friction system)*

EN 13126-7, *Building hardware — Requirements and test methods for windows and door height windows — Requirements and test methods — Part 7: Finger catches*

EN 13126-8, *Building hardware — Requirements and test methods for windows and doors height windows — Part 8: — Tilt&Turn, Tilt-First and Turn-Only hardware*

CEN/TS 13126-9, *Building hardware, fittings for windows and door height windows — Requirements and test methods — Part 9: Pivot hinges*

EN 13126-10, *Building hardware — Requirements and test methods for windows and doors height windows— Part 10: Arm-balancing systems*

EN 13126-11, *Building hardware — Requirements and test methods for windows and doors height windows — Part 11: Top hung projecting reversible hardware*

EN 13126-12, *Building hardware — Requirements and test methods for windows and doors height windows — Part 12: Side-hung projecting reversible hardware*

CEN/TS 13126-13, *Building hardware, fittings for windows and door height windows — Requirements and test methods — Part 13: Sash balances*

CEN/TS 13126-14, *Building hardware, fittings for windows and door height windows — Requirements and test methods — Part 14: Sash fasteners*

EN 13126-15, *Building hardware — Requirements and test methods for windows and doors height windows — Part 15: Rollers for horizontal sliding and sliding folding windows and doors*

EN 13126-16, *Building hardware — Requirements and test methods for windows and doors height windows — Part 16: Hardware for Lift&Slide windows and doors*

EN 13126-17, *Building hardware — Requirements and test methods for windows and doors height windows — Part 17: Hardware for Tilt&Slide windows and doors*

EN 13126-19, *Building hardware — Requirements and test methods for windows and door height windows — Part 19: Sliding Closing Devices*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 12519:2004 and the following apply.

3.1
sample
actual hardware components

3.2
specimen
mock-up window or pieces of fictive frame/sashes (i.e. profile pieces) to accommodate hardware components for testing

3.3
test-rig
testing device onto which a sample can be mounted directly, without the need of a specimen

3.4
test equipment
series of various testing rigs, devices and machinery enabling testing to be carried out

3.5
supporting sub frame
supplementary fixing frame surrounding the specimen enabling it to be clamped or screwed while testing

4 Classification

4.1 General

For the purpose of this European Standard, hardware for windows and door height windows shall be classified in accordance with the nine digit coding system as shown in Table 2. This coding system should be used for hardware components or sets, for example a complete set of Tilt&Turn hardware.

Table 2 — Classification of hardware 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	Applicable part	Test sizes

4.2 Category of use (1 – first digit)

No marking is required for the category of use in accordance with 5.2.

NOTE For special applications, additional requirements may be specified in the other individual parts of this Standards series.

4.3 Durability (2 – second digit)

Three grades shall be identified, as follows, in accordance with 5.3.

NOTE For special applications, further information regarding the marking of durability is specified in other individual parts of this Standards series.

— grade 3: 10 000 cycles;

— grade 4: 15 000 cycles;

— grade 5: 25 000 cycles.

4.4 Mass (3 – third digit)

The third digit shall display the maximum tested sash-mass (weight), unless otherwise defined in the individual parts of this Standards series in accordance with 5.4, for example as follows:

EXAMPLE A sash mass of 15 kg should be 015 and a sash mass of 120 kg should be 120.

4.5 Fire resistance (4 – fourth digit)

One grade shall be identified in accordance with 5.5.

— grade 0 : no requirements.

4.6 Safety in use (5 – fifth digit)

One grade shall be identified in accordance with 5.6.

— grade 1: the product shall conform to the safety in use.

4.7 Corrosion resistance (6 – sixth digit)

Grades shall be identified in accordance with 5.7.

4.8 Security (7 – seventh digit)

No marking is required for the category of security in accordance with 5.8.

NOTE For special applications, additional requirements may be specified in other individual parts of this Standards series.

4.9 Applicable part (8 – eighth digit)

The eighth digit refers to the specific part of this European Standard, which was used for testing the hardware components or sets according to 5.9.

NOTE For special applications, further information regarding marking the applicable part is specified in other individual parts of this Standards series.

EXAMPLE Grade 16 for hardware being tested in accordance with EN 13126-16.

4.10 Test sizes (9 – ninth digit)

The ninth digit shows the test sizes in accordance with 5.10 for example as follows: S.R.W. (sash rebate width) in mm / S.R.H. (sash rebate height) in mm.

4.11 Example of classification for hardware for Tilt&Slide windows (see EN 13126-17)

1	2	3	4	5	6	7	8	9
-	**4**	**120**	**0**	**1**	**4**	**-**	**17**	**1200/2000**

This denotes hardware for Lift&Slide windows and patio doors, which have:

Digit 1 category of use - (no requirements)

Digit 2 durability grade 4 (15 000 cycles)

Digit 3 mass 120 kg

Digit 4 fire resistance grade 0 (no requirements)

Digit 5 safety in use grade 1

Digit 6 corrosion resistance grade 4

Digit 7 security - (no requirements)

Digit 8 applicable part tested according to part 17 of this standard

Digit 9 test sizes S.R.W. = 1 200 mm, S.R.H. = 2 000 mm

5 Requirements common to all types of hardware

5.1 Dangerous substances

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

5.2 Category of use (1 – first digit)

No requirements for the category of use.

NOTE For special applications, additional requirements may be specified in the other individual parts of this Standards series.

5.3 Durability (2 – second digit)

The following grades apply to the durability test:

— grade 3: 10 000 cycles (+ 1 %);

— grade 4: 15 000 cycles (+ 1 %);

— grade 5: 25 000 cycles (+ 1 %).

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. Hardware components, which are used in pairs, i.e. pivots, should be tested in pairs.

5.4 Mass (3 – third digit)

The mass of the test sash shall be determined in accordance with the claims made by the hardware manufacturer.

The mass range starts from 10 kg and varies unlimited in steps of 5 kg. An unlimited number of grades are identified, whereby 010 is the lowest from Table 3.

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	…

The specimen is to be loaded ensuring that the mass is equally distributed around the centre point.

5.5 Fire resistance (4 – fourth digit)

No requirements for the category of fire resistance.

Where hardware components are required for fire performance or smoke control, they shall be subjected to the following tests specified to prove the effect of the product, in the complete window assembly:

a) fire performance: shall be tested in accordance with the fire performance tests of EN 1634-1;

b) smoke control: shall be tested in accordance with the smoke control performance tests of EN 1634-3.

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

NOTE 2 The fire and smoke tests are in addition to the performance tests required by this European Standard.

NOTE 3 Until the appropriate European Standard has been approved and published, existing national standards still apply.

5.6 Safety in use (5 – fifth digit)

All window hardware shall conform to the requirements of this part and the relevant part of this Standards series

5.7 Corrosion resistance (6 – sixth digit)

Hardware shall conform to the grades listed in EN 1670, whereby grade 2 is the minimum requirement.

Unless a test report can be provided by the manufacturer, the hardware shall be tested in accordance with EN 1670.

NOTE The evaluation of the corrosion resistance is limited to the essential areas (as a rule, the visible surfaces of the installed hardware).

Exempt from the corrosion resistance evaluation are:

— rivet locations;

— locations of later processing (for example: cleaved surfaces that result from cropping the hardware components, millings etc.);

— non surface-treated parts/surfaces, provided they are not in the visible vicinity of the hardware (for example: screw guide-holes made of zinc die-cast etc.);

— welding joints and their immediate surroundings.

5.8 Security (7 – seventh digit)

There are no requirements for the category of security.

NOTE For special applications, additional requirements may be specified in other individual parts of this Standards series.

5.9 Applicable part (8 – eighth digits)

Hardware components or sets for different window opening-types (see Table 1 and Annex A) shall conform to the relevant parts of this Standards series.

Annex A shall be referred to in order to establish for which window opening-type(s) the tested hardware component or set is suitable.

The eighth digit refers to the specific part of this standard, used for testing the hardware components or sets.

5.10 Test sizes (9 – ninth digits)

Hardware components, or sets, for different window opening-types shall be tested at different test sizes in accordance with the relevant parts of this Standards series.

5.11 Mechanical strength

All hardware shall conform to the relevant parts of this Standards series.

6 Test equipment

6.1 General

The specimen for the test rig shall be in-filled with a 19 mm ± 1 mm chipboard or similar; this would take the place of the glazing. The test rig shall be capable of accommodating movable test sashes that appropriately simulate the design of any of the window opening-types in accordance with Table 1. It shall be capable of accommodating either left-hand or right-hand operation, and inwards or outwards opening hardware, suitable for the hardware being tested.

NOTE In some cases the samples (hardware components or sets) are tested directly on a test rig or window; a specimen is not necessary. The applicable test specifications are listed in the individual parts of this Standards series.

The general tolerance in this standard is + 5 % unless otherwise specified in the individual parts of this Standards series.

6.2 Mounting of specimen

The test rig shall be so rigid that any deformation during the tests shall have no influence on the results. The specimen to which the samples may be fastened during the test, shall be fixed to the test rig. The mounting of the specimen on the test rig shall represent a typical application and not impair its performance in the durability and mechanical strength tests.

The specimen or the test rig shall incorporate provision for the application of the test forces.

6.3 Test sizes

The specimen's active-sash for the test rig shall be tested at different sizes (to a tolerance of ± 10 mm) in accordance with the relevant parts of this Standards series.

6.4 Profile and material of test windows and door height windows

6.4.1 General

The specimen shall simulate the profile and material for which the hardware is intended.

6.4.2 Test specimen for hardware on timber windows and door height windows

Hardware for timber windows shall be installed in timber test-windows.

NOTE Unless otherwise specified the manufacturer may select timber quality and profile dimensions, provided they are within the scope of this European Standard and that normal fixing and operating instructions are applicable.

The test report shall describe the following:

a) profile cross-section;

b) timber quality;

c) glazing centre position in relation to the pivot point;

d) hardware fixing screw sizes;

e) any special features.

A gasket shall not be applied to the specimen.

6.4.3 Test specimen for hardware on PVC-U profile windows and door height windows

Hardware for PVC-U windows shall be installed in PVC-U test-windows.

NOTE Unless otherwise specified in this standard the manufacturer may select the PVC-U profile provided it is within the scope of this European Standard.

The test report shall describe the following:

a) profile cross-section;

b) profile reinforcement;

c) wall thickness;

d) chamber quantity;

e) glazing centre position in relation to the pivot point;

f) hardware fixing screw sizes;

g) any special features.

A gasket shall not be applied to the specimen.

6.4.4 Test specimen for hardware used on aluminium or steel windows and door height windows

Hardware for aluminium or metal windows shall be installed in aluminium or steel test-windows.

NOTE Unless otherwise specified in this European Standard the manufacturer may select the aluminium or steel profile provided it is within the scope of this European Standard and normal fixing and operating instructions are applicable.

The test report shall describe the following:

a) profile cross-section;

b) thermal insulation;

c) wall thickness;

d) chamber quantity;

e) centre position in relation to the pivot point;

f) hardware fixing screw sizes; and

g) any special features.

A gasket shall not be applied to the specimen.

6.4.5 Clamping the specimen into the test-rig

To prevent forces exerted while clamping the specimen into the test-rig, fix the specimen onto a 19 mm ± 1 mm chipboard or similar or be fixed into a rigid sub frame to ensure that it is inserted squarely.

Clamp the chipboard or sub frame securely in those areas where hardware is subjected to strain.

7 Test methods

7.1 General

The hardware shall be installed in the specimen or test rig in accordance with the manufacturer's published installation instructions. The fixings specified by the manufacturer shall be applied wherever deemed practicable. In the event of the manufacturer's specified fixings being deemed not practicable, the hardware shall be securely fixed to the specimen or test rig by suitable mechanical means using the normal fixing holes provided in the hardware.

Unless stated otherwise in the individual parts of this Standards series, three samples of each hardware component or set shall be used for testing to this European Standard as follows.

sample A – performance testing;

sample B – corrosion testing;

sample C – retained for reference control.

NOTE 1 Sample B should only be necessary if no test report can be supplied from the manufacturer regarding the testing of the hardware component or set in accordance with EN 1670.

NOTE 2 Sample C should be retained by the test institute for the duration of the validity of the test report.

7.2 Lubrication of hardware

Hardware shall be lubricated in accordance with the manufacturer's installation and maintenance instructions. If no lubrication is specified, the hardware shall be tested without lubrication.

Upon completion of every 5 000 cycles, all moving and locking parts shall be lubricated, unless the hardware is claimed to be maintenance-free.

7.3 Sash-mass

7.3.1 Adjusting the sash-mass

Additional weights, for example steel plates, shall be mounted to reach the sash-mass in accordance with 5.4. The additional plates are mounted uniformly on the outside and inside of the chipboard or similar so that the centre of gravity is maintained. The sash-mass should be checked in the testing institute. To reach the precise mass per unit as specified in 5.4, weights can still be mounted in the centre of the specimen. The allowed tolerance with test weights is + 1 %.

7.3.2 Selecting the sash-mass

The sash-mass shall conform to the values specified in 5.4.

7.4 Resistance to corrosion

NOTE If no test report in accordance with EN 1670 can be supplied by the manufacturer, a test is necessary.

All corrosion tests shall be carried out on original new samples (i.e. Tilt&Turn hardware, espagnolettes etc.). Any frangible positioning lugs holding components together (i.e. for cam centre-positioning) shall be broken.

8 Test procedures

8.1 General

Install the sample in accordance with 7.1.

Test room ambient temperature from 15 °C to 30 °C

8.2 Durability test

Durability tests shall be performed at a rate of 250 $^{+25}_{-0}$ cycles/h, except that in the case of a manufacturer choosing the option of specifying a lower testing speed, i.e. to avoid any friction-material overheating. In this case the test report shall state the testing-speed and the reasons for using the lower speed.

Number of cycles in accordance with 5.3.

8.3 Additional test requirements

NOTE Should the hardware-manufacturers specify additional requirements, which are approved by the test report, the necessary tests should be performed and reported in the test report.

8.4 Acceptance criteria

Upon completion of the tests, there shall be no breakage of any function related component. The specific acceptance criteria are specified in the relevant parts of this Standards series.

9 Marking

The product and/or its literature, packaging etc., shall be marked with the following:

a) manufacturer’s name or trademark, or other means of positive identification.

b) product model identification.

c) number of this European Standard.

d) year and calendar-week of production.

NOTE The information for d) may be in a coded form.

The classification of Clause 4 shall be quoted using one or more of the following methods:

— hardware manufacturer’s catalogue;

— accompanying documents;

— on the product label or packaging;

— by marking the product itself.

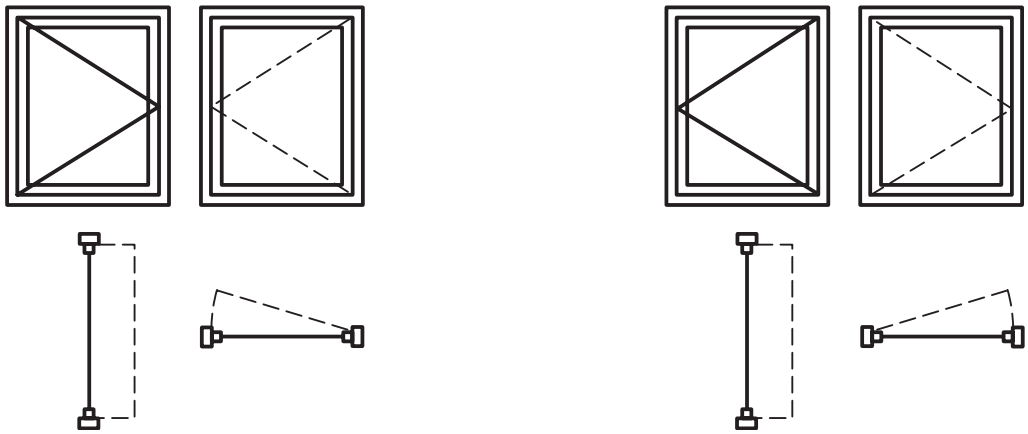
Annex A
(informative)

List of parts and titles and their reference to the relevant window types

13126 Part:	Titles	Relevant for window-types
1	Requirements common to all types of hardware	All types of windows
2	Window fastener handles	A, B, C, D, F, G, H, J, K, L, N, Q, R, S, U, V, W
3	Handles, primarily for Tilt&Turn, Tilt-First and Turn-Only hardware	All Types of Windows
4	Espagnolettes	A, B, C, D, F, G, H, J, K, L, M, N, Q, R, S, U, V, W
5	Devices that restrict the opening of windows	A, B, C, D, E, F, G, H,J, K, L, U, V, W
6	Variable geometry stay hinges with or without friction systems	A, B, C, D, H, J, U, V
7	Finger catches	C, D, F, G, H, J, U, V, W
8	Tilt&Turn, Tilt-First and Turn-Only hardware	A, B, E
9	Hardware for horizontal and vertical pivot windows	F, G
10	Arm balancing systems	H, J, U, V
11	Top-hung projecting reversible hardware	K
12	Side-hung projecting reversible hardware	L
13	Sash balances	M
14	Sash fasteners	M, N
15	Rollers for horizontal sliding and sliding folding windows and doors	N, Q, R, S
16	Hardware for Lift&Slide windows and doors	P, T
17	Hardware for Tilt&Slide windows and doors	T
18	Fan light openers	C, D
19	Sliding Closing Devices	M, N

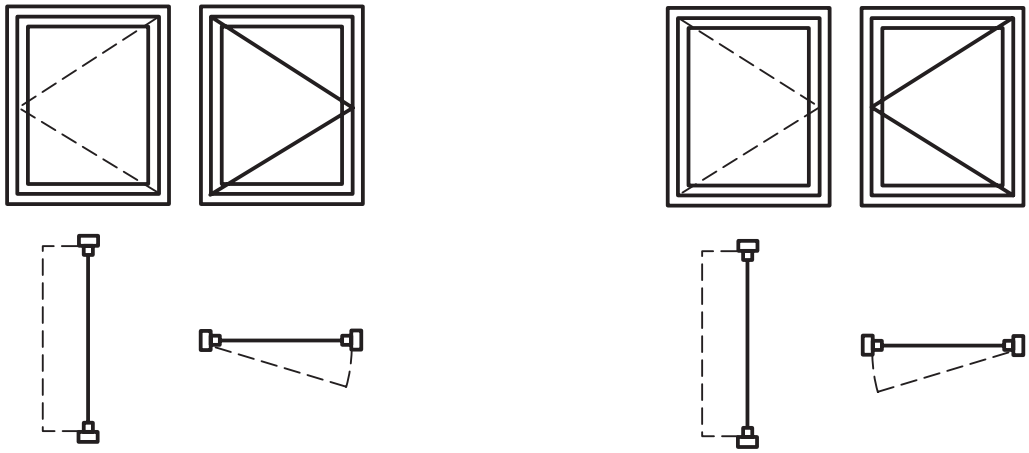
Annex B
(informative)

Window types



1 **2**

Type A



1 **2**

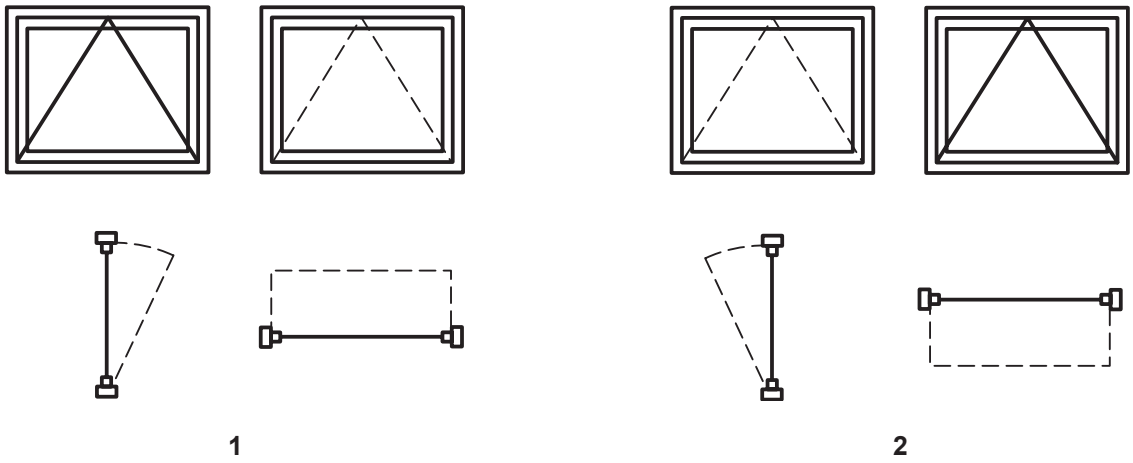
Type B

Key

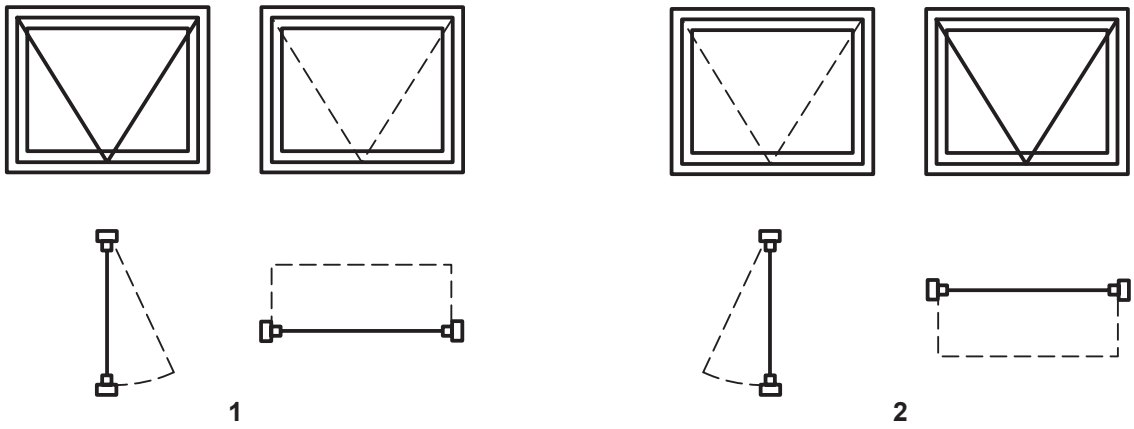
1 left

2 right

Figure B.1 — Type 'A' (inward opening) and type 'B' (outward opening) side-hung windows (including projecting side-hung windows)



Type C



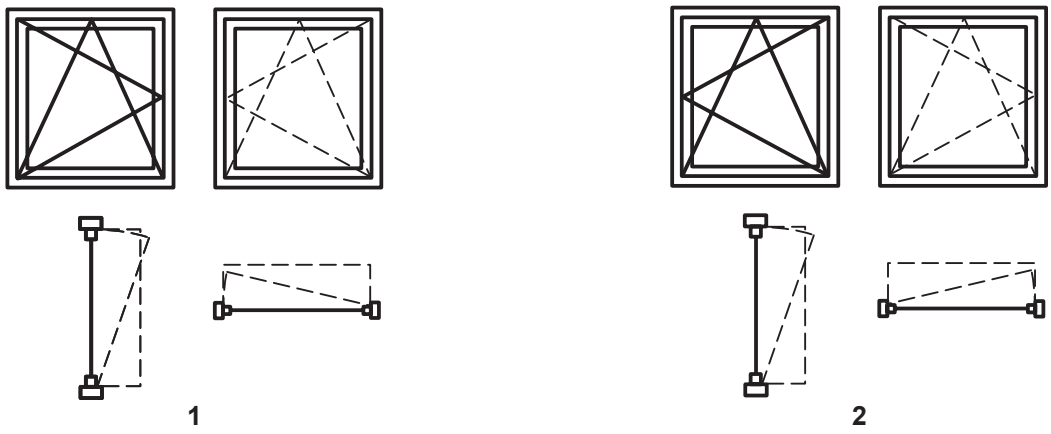
Type D

Key

1 inward

2 outward

Figure B.2 — Type ‘C’ (bottom hung) and type ‘D’ (top hung) inward and outward opening windows

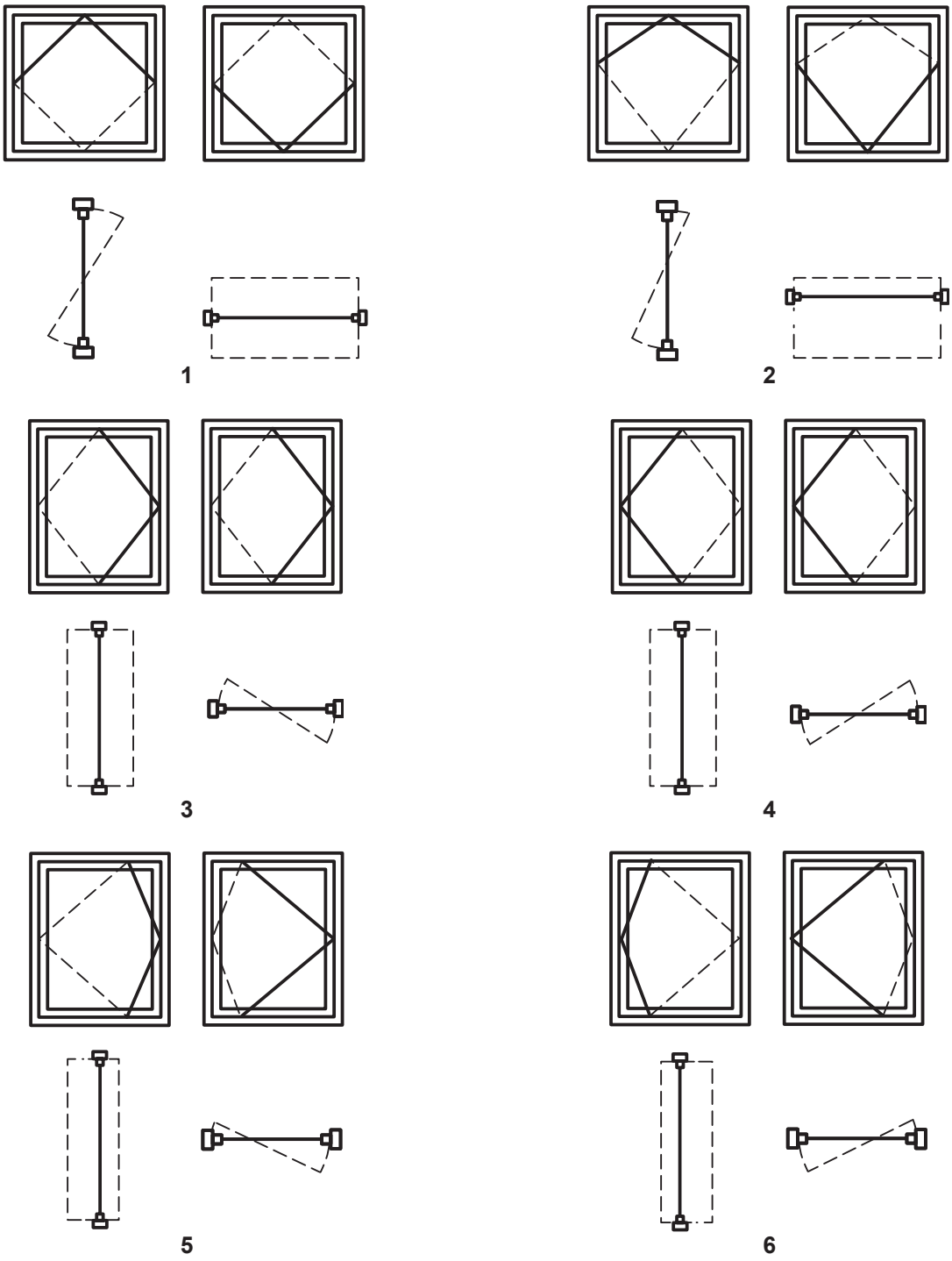


Key

1 left

2 right

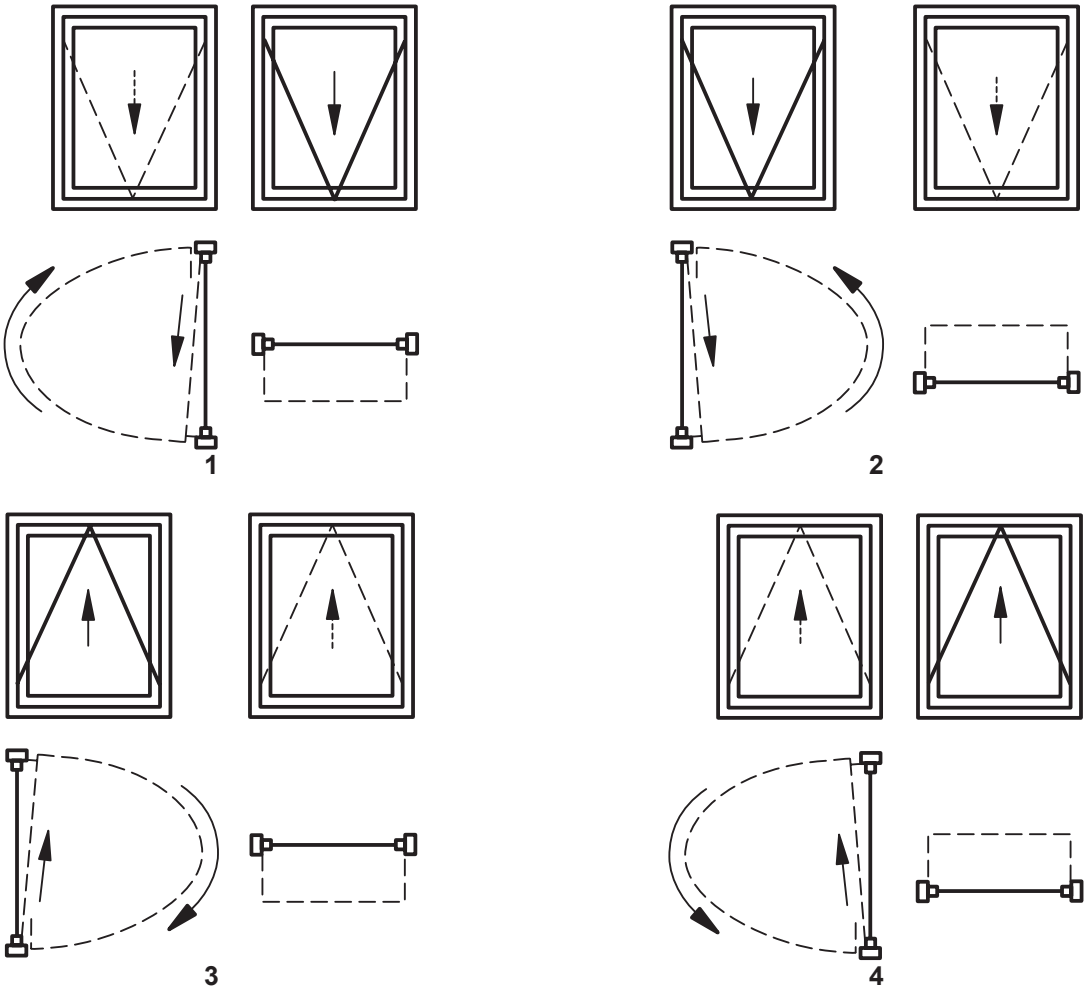
Figure B.3 — Type ‘E’ Tilt&Turn / Tilt-First windows



Key

1 Type F centre pivot
2 Type F off-centre pivot
3 Type G centre left
4 Type G centre right
5 Type G centre off – left
6 Type G centre off – right

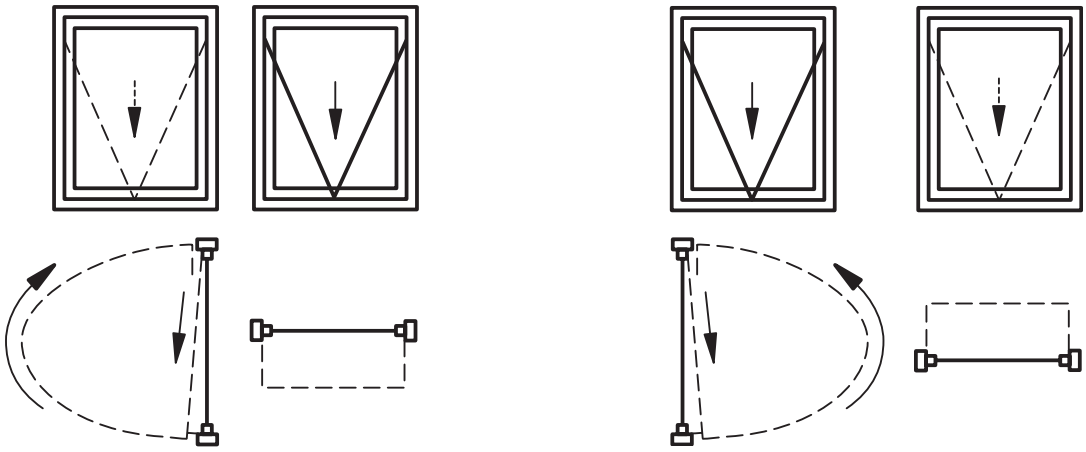
Figure B.4 — Type ‘F’ (horizontal pivot) and type G (vertical pivot) windows



Key

1	Type H outward opening
2	Type H inward opening
3	Type J outward opening
4	Type J inward opening

Figure B.5 — Type ‘H’ (top-hung) and type ‘J’ (bottom-hung) projecting windows



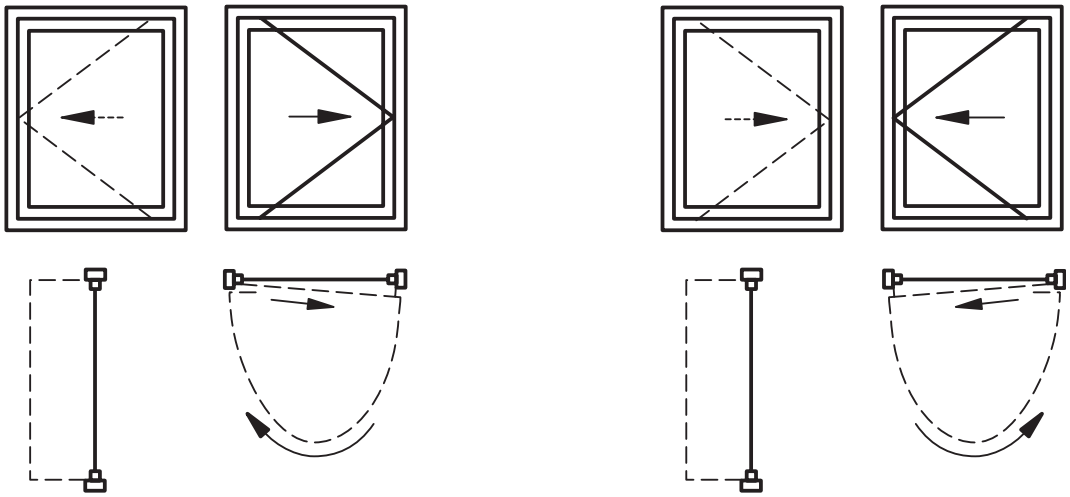
1 **2**

Key

1 Type K outward opening (like B.5 key 1:Type H – but fully reversible)

2 Type K inward opening (like B.5 key 2:Type H – but fully reversible)

Figure B.6 — Type ‘K’ top-hung projecting reversible windows



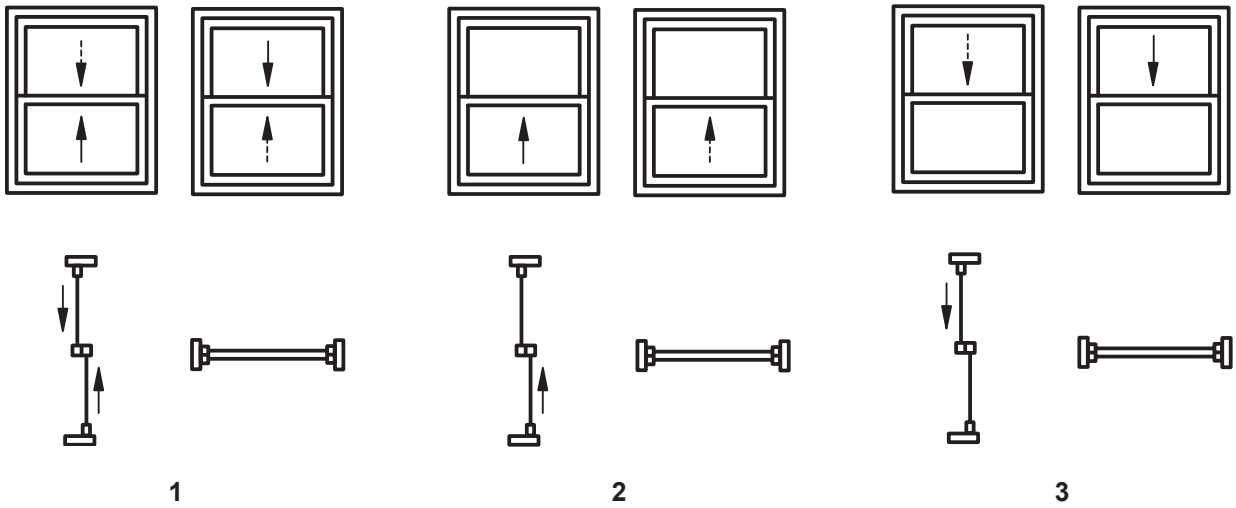
1 **2**

Key

1 left

2 right

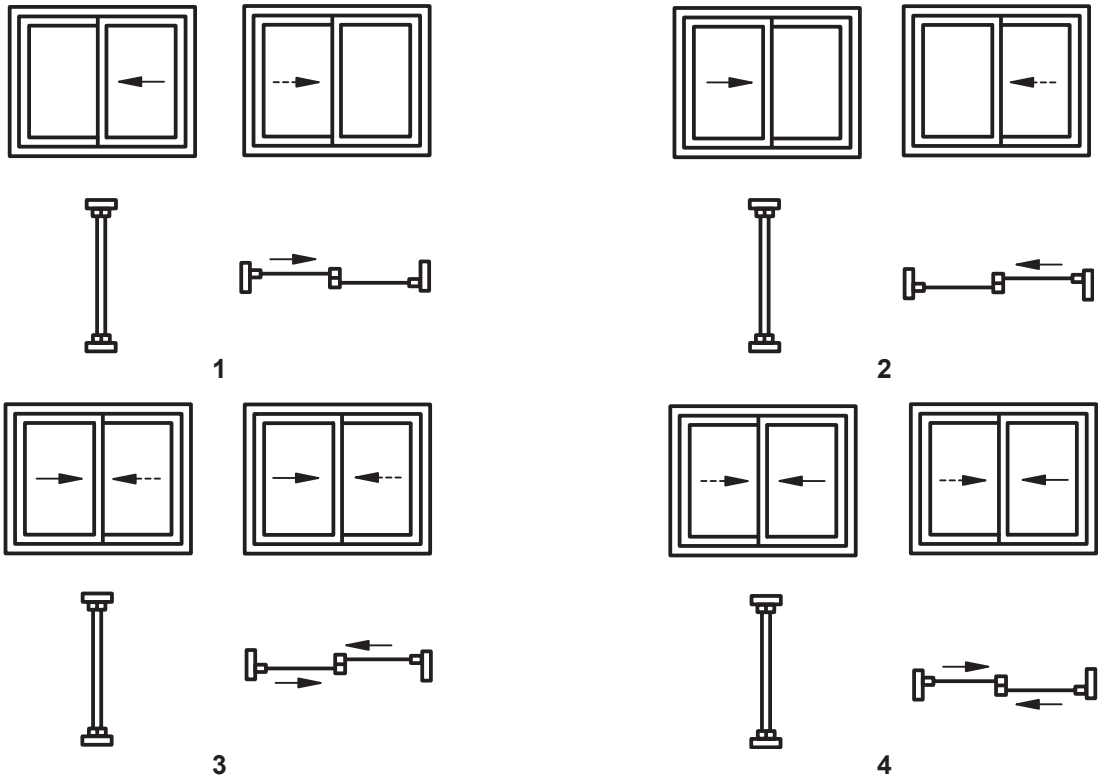
Figure B.7 — Type ‘L’ side-hung projecting reversible windows



Key

1 double sashes
2 single bottom sash
3 single top sash

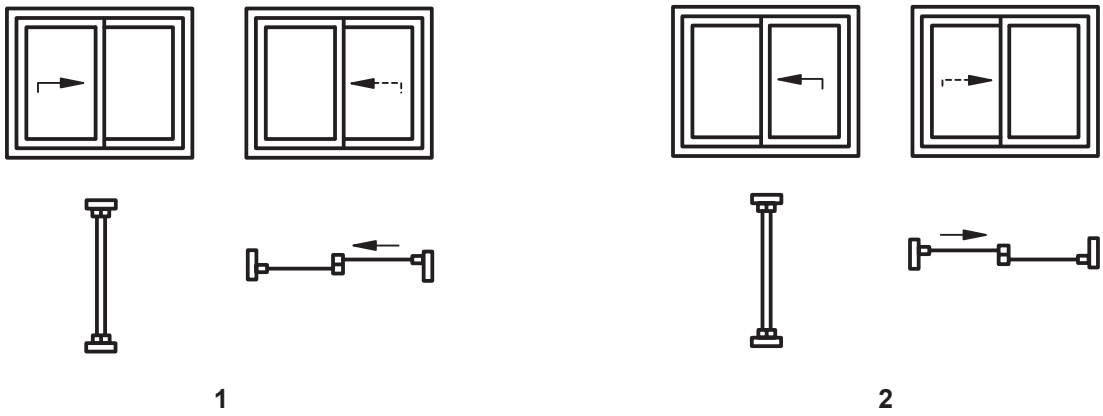
Figure B.8 — Type 'M' vertical sliding sashes



Key

1 single sash – left
2 single sash – right
3 left sash along the front of right sash
4 right sash along the front of left sash

Figure B.9 — Type 'N' horizontal sliding sashes



Key

1 active sash sliding to the right

2 active sash sliding to the left

Figure B.10 — Type ‘P’ lifting sliding sashes

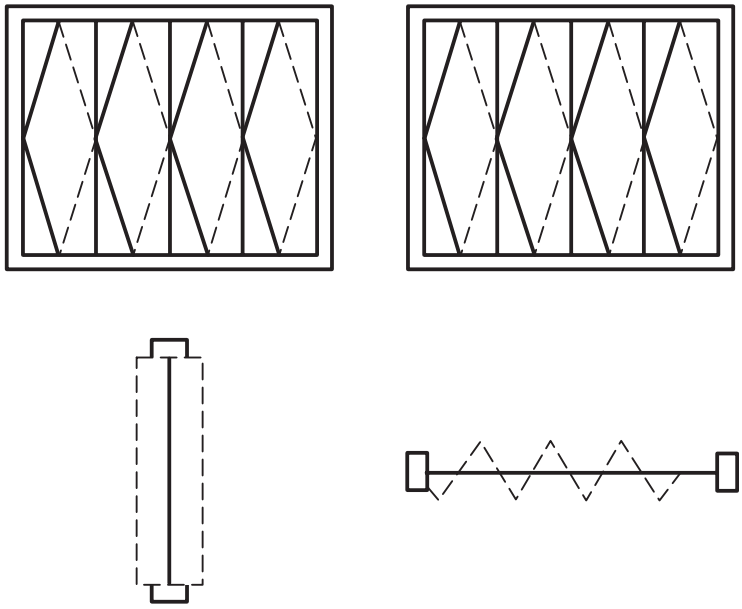
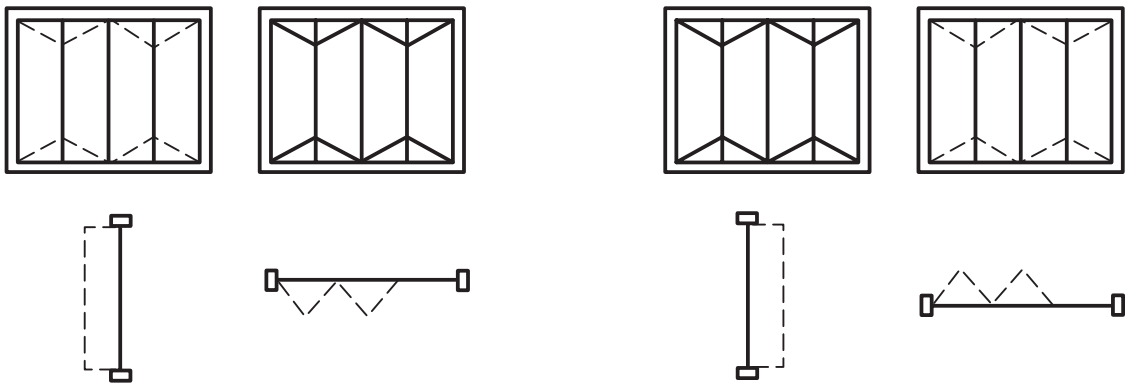


Figure B.11 — Type ‘Q’ folding (centre pivot) windows



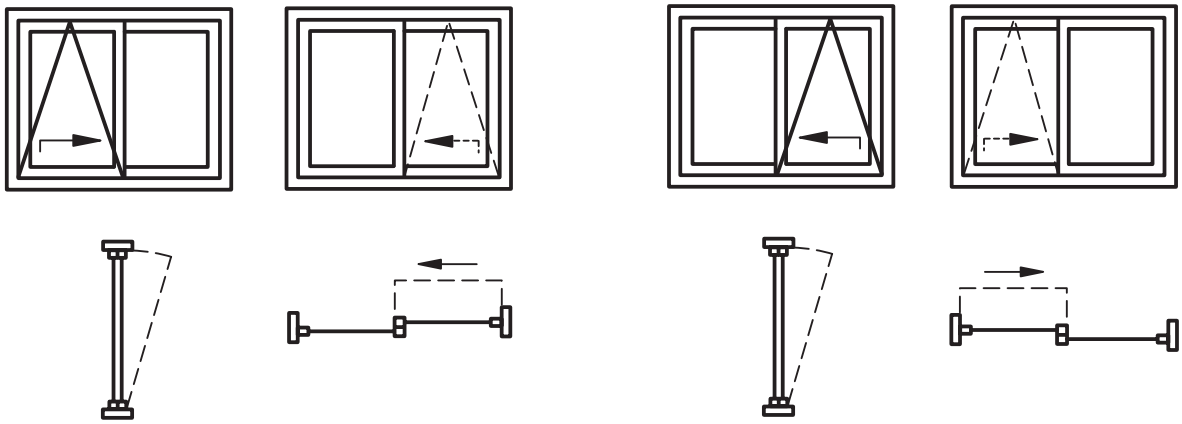
1 **2**

Key

1 Type R – outward folding

2 Type S – inward folding

Figure B.12 — Type 'R' (outward folding) and type 'S' (inward folding) corner pivot windows



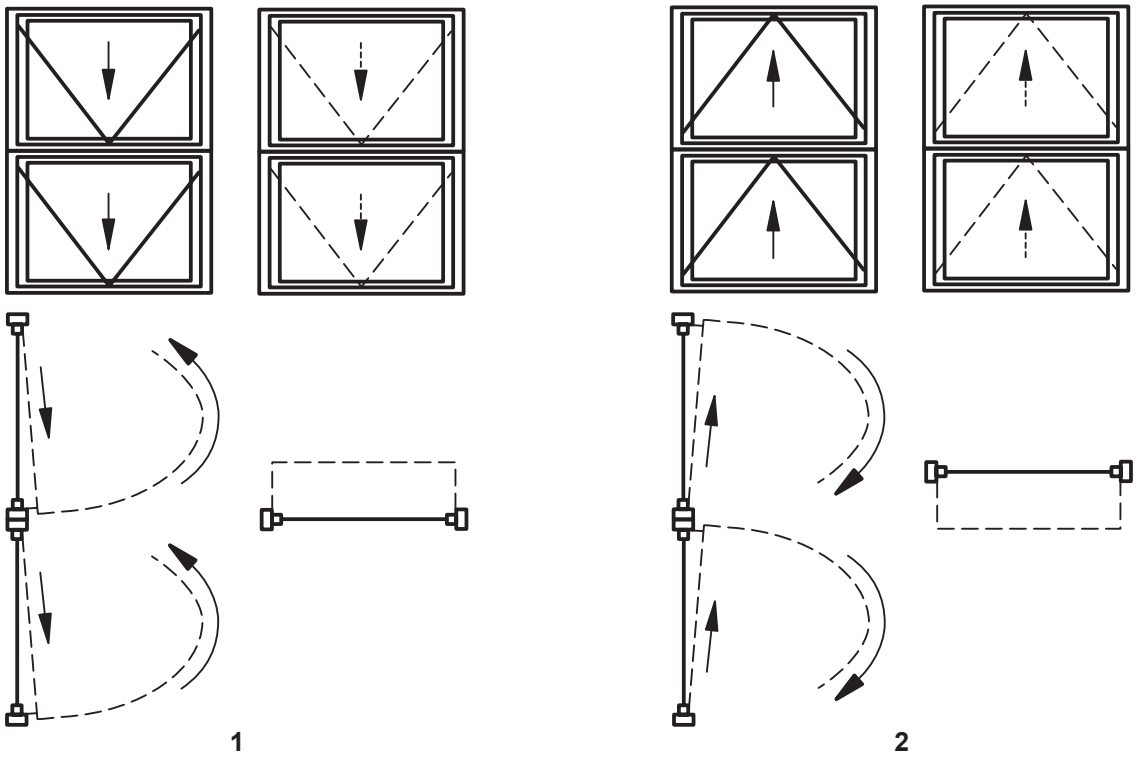
1 **2**

Key

1 active sash sliding to the right

2 active sash sliding to the left

Figure B.13 — Type 'T' tilting sliding sashes



Key

1 Type U

2 Type V

Figure B.14 — Type ‘U’ (top-hung) and type ‘V’ (bottom-hung) inward opening (multi-light) projecting windows

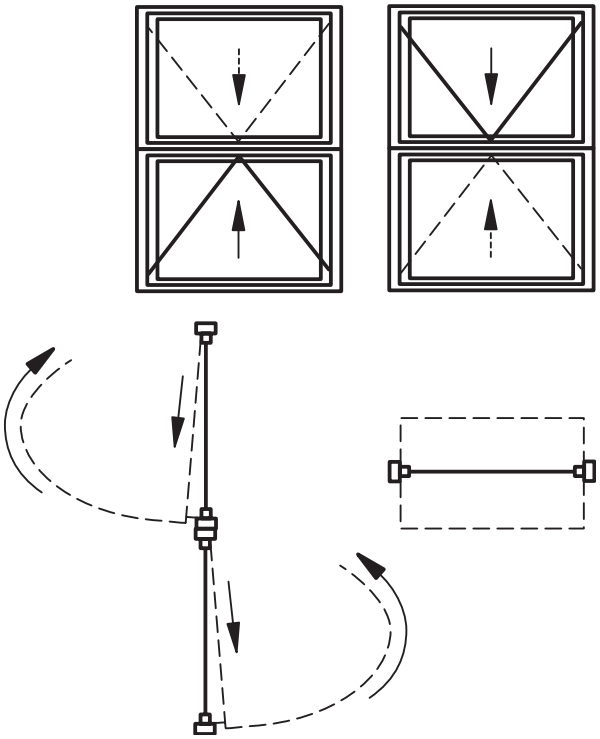


Figure B.15 — Type ‘W’ horizontal balanced windows

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