

BRITISH STANDARD

Specification for windows and doorsets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles

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Contents

Foreword *iii*

1	Scope	<i>1</i>
2	Normative references	<i>1</i>
3	Terms and definitions	<i>4</i>
4	Handing	<i>5</i>
5	Components	<i>5</i>
6	Appearance and finish	<i>7</i>
7	Fabrication	<i>7</i>
8	Glazing	<i>9</i>
9	Use, cleaning and maintenance	<i>9</i>
10	Security	<i>9</i>
11	Safety in case of fire	<i>10</i>
12	Safety in use	<i>10</i>
13	Weathertightness	<i>10</i>
14	Operation and strength characteristics	<i>10</i>
15	Hygiene, health and the environment	<i>10</i>
16	Acoustic performance	<i>11</i>
17	Energy conservation	<i>11</i>
18	Marking	<i>11</i>

Annexes

Annex A (informative)	Guidance on the evaluation of conformity	<i>12</i>
Annex B (informative)	Durability and recycling	<i>13</i>
Annex C (normative)	Specification for handing	<i>16</i>
Annex D (normative)	Weld test	<i>17</i>
Annex E (normative)	Mechanical joint tests (mullion and transom joints)	<i>19</i>

Bibliography *24*

List of figures

Figure C.1	Drawing conventions for window and door types	<i>16</i>
Figure D.1	Apparatus for weld test	<i>18</i>
Figure E.1	Window type and inspection apertures	<i>19</i>
Figure E.2	Test pieces for the watertightness test	<i>20</i>
Figure E.3	Thermal stress test	<i>21</i>
Figure E.4	Arrangement for torsion test	<i>22</i>
Figure E.5	Torsion test loading cycle	<i>22</i>

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 25 and a back cover.

Foreword

Publishing information

This British Standard is published by BSI and came into effect on 30 April 2007. It was prepared by Subcommittees B/538/1, *Windows*, and B/538/2, *Doors*, under the authority of Technical Committee B/538, *Doors, windows, shutters, hardware and curtain walling*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This British Standard supersedes BS 7412:2002, which will be withdrawn in December 2008.

Relationship with other publications

The requirements for raw materials and properties of the finished profile for white PVC-U extruded hollow profiles are specified in BS EN 12608. The requirements for surface covered PVC-U extruded hollow profiles are specified in BS 7722.

This British Standard is related to the following other standards.

- BS EN 14351-1 is the harmonized European product standard for windows and external pedestrian doorsets without resistance to fire and smoke leakage characteristics. It gives a list of performance characteristics and classifications of performance, but does not give guidance on determining the appropriate classification for any specific application.
- BS 6375 (currently in two parts, with a third in preparation) is the national application document in the UK, giving performance requirements and guidance for the selection of appropriate classes of performance from BS EN 14351-1.
- The performance aspects in BS 6375 are referred to in BS 7412.

Guidance on the survey and installation of windows and doorsets is given in BS 8213-4.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- changes to take into account the publication of harmonized European product standard EN 14351 in three parts;
- information on how the requirements relate to the European Construction Products Directive.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

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

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

Attention is drawn to the Building Regulations 2000 and subsequent amendments [1], the Building (Scotland) Regulations 2004 [2] and the Building Regulations (Northern Ireland) 2000 [3].

1 Scope

This British Standard specifies requirements for the design, fabrication and performance of windows and glazed doorsets made from PVC-U extruded hollow profiles.

This British Standard applies to windows and doorsets manufactured from PVC-U hollow profiles incorporating fusion welded corner joints.

It applies to windows and doors fabricated into frames in a factory, to be installed vertically (within 15°) into the external face of buildings, as single or multi-light units, in coupled assemblies when appropriate, of the following types:

a) windows:

- 1) hinged: side-hung (open in or out), top-hung (open out), bottom-hung (open in), tilt and turn or turn before tilt;
- 2) projecting: side-hung (open in or open out) and top-hung (open out or reversible);
- 3) pivoted: horizontal and vertical (hung centrally or off-centre) including reversible;
- 4) sliding: horizontal and vertical;
- 5) side-hung: fully reversible;
- 6) fixed light;

b) doors:

- 1) single leaf single-swing doors with or without side lights and top panels;
- 2) double leaf single-swing doors with or without side lights and top panels.

It is applicable to assemblies in which any frame member is not longer than 3 m. It does not apply to curtain walls that span across horizontal structural members of floors but is applicable to windows within a curtain walling system.

It is applicable to assemblies up to the point of installation.

NOTE Guidance on the evaluation of conformity is given in Annex A. Guidance on durability and recycling is given in Annex B.

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.

Standards publications

BS 4255-1, *Rubber used in preformed gaskets for weather exclusion from buildings – Part 1: Specification for non-cellular gaskets*

BS 6100-1 (BS ISO 6707-1), *Building and civil engineering – Vocabulary – Part 1: General terms*

BS 6100-1.3.5, *Glossary of building and civil engineering terms – Part 1: General and miscellaneous – Subsection 1.3: Parts of construction works – Subsection 1.3.5: Doors, windows and openings*

BS 6100-1.3.6, *Glossary of building and civil engineering terms – Part 1: General and miscellaneous – Subsection 1.3: Parts of construction works – Subsection 1.3.6: Jointing products, builders' hardware and accessories*

BS 6100-1.5.1, *Glossary of building and civil engineering terms – Part 1: General and miscellaneous – Subsection 1.5: Operations; associated plant and equipment – Subsection 1.5.1: Co-ordination of dimensions; tolerances and accuracy*

BS 6100-1.6, *Glossary of building and civil engineering terms – Part 1: General and miscellaneous – Subsection 1.6: Persons*

BS 6262 (all parts), *Glazing for buildings*

BS 6375 (both parts), *Performance of windows and doors*

BS 7722, *Surface covered PVC-U profiles for windows and doors – Specification*

BS 7950:1997, *Specification for enhanced security performance of windows for domestic applications*

BS 8000-7, *Workmanship on building sites – Part 7: Code of practice for glazing*

PAS 24-1:1999, *Enhanced security performance requirements for door assemblies – Part 1: Single and double leaf, hinged external door assemblies to dwellings*

BS EN 485-2, *Aluminium and aluminium alloys – Sheet, strip and plate – Part 2: Mechanical properties*

BS EN 514, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors – Determination of the strength of welded corners and T-joints*

BS EN 515, *Aluminium and aluminium alloys – Wrought products – Temper designations*

BS EN 572 (all parts), *Glass in building – Basic soda lime silicate glass products*

BS EN 755-9, *Aluminium and aluminium alloys – Extruded rod/bar, tube and profiles – Part 9: Profiles, tolerances on dimensions and form*

BS EN 1027, *Windows and doors – Watertightness – Test method*

BS EN 1096 (all parts), *Glass in building – Coated glass*

BS EN 1279 (all parts), *Glass in building – Insulating glass units*

BS EN 1670:1998, *Building hardware – Corrosion resistance – Requirements and test methods*

BS EN 1863 (both parts), *Glass in building – Heat strengthened soda lime silicate glass*

BS EN 10088-2, *Stainless steels – Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

BS EN 10327:2004, *Continuously hot-dip coated strip and sheet of low carbon steels for cold forming – Technical delivery conditions*

BS EN 12150 (both parts), *Glass in building – Thermally toughened soda lime silicate safety glass*

BS EN 12211, *Windows and doors – Resistance to wind load – Test method*

BS EN 12337 (both parts), *Glass in building – Chemically strengthened soda lime silicate glass*

BS EN 12608:2003, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors – Classification, requirements and test methods*

BS EN 13024 (both parts), *Glass in building – Thermally toughened borosilicate safety glass*

BS EN 13141-1, *Ventilation for buildings – Performance testing of components/products for residential ventilation – Part 1: Externally and internally mounted air transfer devices*

BS EN 13142, *Ventilation for buildings – Components/products for residential ventilation – Required and optional performance characteristics*

BS EN 14178 (both parts), *Glass in building – Basic alkaline earth silicate glass products*

BS EN 14179 (both parts), *Glass in building – Heat-soaked thermally-toughened soda lime silicate safety glass*

BS EN 14321 (both parts), *Glass in building – Thermally toughened alkaline earth silicate safety glass*

BS EN 14449, *Glass in building – Laminated glass and laminated safety glass – Evaluation of conformity/product standard*

BS EN ISO 4042, *Fasteners – Electroplated coatings*

BS EN ISO 105-A01:1996, *Textiles – Tests for colour fastness – Part A01: Standard depths: matt*

Other publications

BRITISH PLASTICS FEDERATION. *Code of practice for the reinforcement of high impact modified PVC-U windows and doors*. 323/1. London: British Plastics Federation, 1991.¹⁾

BRITISH PLASTICS FEDERATION. *Materials for gaskets and weatherstrips for windows, doors, conservatories and curtain walling – Specification and performance requirements*. 345/2. London: British Plastics Federation, 2004.¹⁾

BRITISH PLASTICS FEDERATION. *Infill panels for doors and windows*. 355/1. London: British Plastics Federation, 1996.¹⁾

BRITISH PLASTICS FEDERATION. *Specification and guidelines for the selection and application of fasteners for the manufacture of plastics windows and doors*. 363/1. London: British Plastics Federation, 2001.¹⁾

¹⁾ British Plastics Federation, 6 Bath Place, Rivington Street, London EC2A 3JE. Telephone 020 7457 5000. www.bpf.co.uk.

3 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS 6100-1, BS 6100-1.3.5, BS 6100-1.3.6, BS 6100-1.5.1 and BS 6100-1.6 and the following apply.

3.1 casement

framed opening window light that is hinged or pivoted

3.2 coupled assembly

two or more windows and/or doorsets mechanically joined to fill an opening

NOTE This was previously known as a composite assembly.

3.3 cycle

set of operations required to take a window or door from the closed and fully locked condition to the fully opened condition and back to the closed and fully locked position

3.4 door frame

part of a doorset surrounding the door leaf and to which the door leaf is hinged

3.5 door leaf

hinged, moving element within a doorset

3.6 doorset

complete unit, as installed, comprising door leaf, door frame, any associated side panels or top lights, and any operating hardware, locks and accessories

NOTE This is also known as a door assembly.

3.7 finger operated

operation of hardware by the use of fingers only without palm contact

NOTE This might or might not include the use of a key.

3.8 fixing

component that is used to secure separate parts of a window or doorset to each other, to secure an item of hardware to a window or door part, or to secure a completed window or doorset into the structure of a building

3.9 glazing gasket

plastic or synthetic flexible member used between the glazing and the frame and/or between the glazing and the glazing bead

3.10 hand operated

operation of hardware by full use of the hand including palm contact

NOTE This might or might not include the use of a key.

3.11 hardware

device attached to a structural member to facilitate opening, closing or making the product secure in the frame

3.12 multi-light

window incorporating two or more lights, opening and/or fixed, within one perimeter frame