

PAS 1188-1:2009



BSI Standards Publication

Flood protection products — Specification

Part 1: Building aperture products

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Foreword

Publishing information

This Publicly Available Specification (PAS) has been developed by the British Standards Institution (BSI) in association with the Environment Agency. It came into effect on 30 April 2009.

Acknowledgement is given to the following organizations that were involved in the development of this PAS:

- Department for Communities and Local Government;
- Flood Protection Association;
- HR Wallingford;
- National Flood Forum;
- Royal Haskoning;
- Insurance industry representatives;
- Flood protection product manufacturers and suppliers.

This PAS is published by BSI which retains its ownership and copyright. BSI reserves the right to withdraw or amend this PAS on receipt of authoritative advice that it is appropriate to do so. This PAS will be reviewed at intervals not exceeding two years, and any amendments arising from the review will be published as an amended PAS and publicized in *Update Standards*.

This PAS is not to be regarded as a British Standard. It will be withdrawn upon publication of its content in, or as, a British Standard.

The PAS process enables a specification to be rapidly developed in order to fulfil an immediate need in industry. A PAS may be considered for further development as a British Standard, or constitute part of the UK input into the development of a European or International Standard.

Supersession

This part of PAS 1188 supersedes PAS 1188-1:2003, which is withdrawn.

For flood protection products certified against PAS 1188-1:2003, the PAS user is advised to discuss transition arrangements with their certification body.

Relationship with other publications

PAS 1188, *Flood protection products – Specification*, is issued in four parts:

- *Part 1: Building aperture products;*
- *Part 2: Temporary products;*
- *Part 3: Building skirt systems;*
- *Part 4: Demountable products.*

A guidance document *Preparing for floods: Interim guidance for improving the flood resistance of domestic and small business properties* [1] is available from the Department for Communities and Local Government's website at www.communities.gov.uk/publications/planningandbuilding/preparingfloods and through the Environment Agency's 24-hour "Floodline", which can be reached on 0845 988 1188.

Information is available from the Scottish Executive as *Design guidance on flood damage to dwellings* [2].

A publication on flood resilient construction *Improving the flood performance of new buildings – Flood resilient construction* [3] is available from the Department for Communities and Local Government's website at www.planningportal.gov.uk/uploads/br/flood_performance.pdf.

Attention is drawn to the need to consider the prevention of the ingress of flood water into buildings through building fabric (i.e. walls and floors), horizontal pipes, waste water fittings and floor gullies. Anti-flood devices for buildings are covered in BS EN 13564-1.

Information about this document

This is a full revision of PAS 1188-1:2003.

It is intended that this PAS will form the basis of a flood protection product conformity certification scheme to provide assurance to potential purchasers of flood protection products that they have been independently tested and that the manufacturer's production controls are in accordance with stated requirements.

Product certification. Users of this PAS are advised to consider the desirability of third-party certification of products conforming to this PAS. Appropriate conformity attestation arrangements are described in BS EN 45011. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

Use of this document

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

This PAS is not intended to restrict new developments in design and materials.

Hazard warnings

WARNING. This PAS calls for the use of procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage. Attention is also drawn to additional company health and safety policy that may be in place. Testing should be stopped immediately if the safety of persons is in doubt at any time.

Presentational conventions

The provisions of this PAS 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

Users' attention is drawn to all existing legislation covering the subject matter of this PAS. The following legislation is relevant:

- Statutory Rules of Northern Ireland 1991, Technical Booklet L [4];
- Statutory Rules of Northern Ireland 1994, Technical Booklet E [5];
- Statutory Rules of Northern Ireland 1994, Technical Booklet K [6];
- Statutory Rules of Northern Ireland 1994, Technical Booklet N [7];
- Statutory Rules of Northern Ireland 2000, Technical Booklet R [8];
- The Building Regulations (England and Wales) 1991, Approved Document B [9];
- The Building Regulations (England and Wales) 1991, Approved Document F [10];
- The Building Regulations (England and Wales) 1991, Approved Document H [11];
- The Building Regulations (England and Wales) 1991, Approved Document J [12];
- The Building Regulations (England and Wales) 1991, Approved Document M [13];
- The Building Regulations (England and Wales) 2006, Approved Document C [14];
- The Building Standards (Scotland) Regulations 1990, Technical Standard D [15];
- The Building Standards (Scotland) Regulations 1990, Technical Standard E [16];
- The Building Standards (Scotland) Regulations 1990, Technical Standard F [17];
- The Building Standards (Scotland) Regulations 1990, Technical Standard K [18];
- The Building Standards (Scotland) Regulations 1990, Technical Standard M [19];
- The Building Standards (Scotland) Regulations 1990, Technical Standard Q [20];
- The Disability Discrimination Act 1995 [21];
- The Fire Precautions Act 1971 [22];
- The Gas Safety (Installation and Use) Regulations 1998 [23].

For rooms containing gas appliances attention is drawn to the Gas Safety (Installation and Use) Regulations 1998 [23] and manufacturers' instructions regarding the free circulation of air both in and out of the building. In such instances special care should be taken with the use of air ventilation bricks.

Air vent flood protection covers should be removed as soon as floodwaters have receded to ensure sub-floor ventilation is maintained.

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

Compliance with a PAS cannot confer immunity from legal obligations.

1 Scope

This PAS specifies requirements for the designation, testing, factory production control, installation documentation and marking for different types and configurations of flood protection products.

This PAS is applicable to flood protection products intended for use in the temporary sealing of building apertures and entrances to properties, in the event of static flood water rising up to a level between 600 mm and 900 mm above ground level, except where they are designed to completely cover or replace small apertures, such as air-bricks or air vents.

This PAS is intended for use in the UK or locations with similar exposures, i.e. where there is a temperate climate and advanced warning of flooding is available.

This PAS specifies the method of testing and an allowable leakage rate.

The range of building aperture sizes covered is a nominal width of up to 2 400 mm.

NOTE 1 The hydrostatic pressures exerted by floodwater can cause sudden or long-term structural damage and undermine the foundations of a building or cause leakage through the walls, floor or sub-floor, unless the building is specifically designed to withstand such stresses. The actual water level that can be safely retained by the external walls will depend upon the construction, type, form, age and condition of the walls. It is recommended that a suitably qualified building surveyor, architect or structural engineer inspects the external walls, before any flood protection product for building apertures is installed.

NOTE 2 Flood protection products are not normally intended to prevent water more than 600 mm to 900 mm above the level of the ground surrounding the property from entering the building.

NOTE 3 The PAS test conditions represent typical conditions that can be experienced during a flood. This includes testing the flood protection product for leakage under static water levels, waves up to 0.1 m high and parallel currents up to 1.0 m/s.

NOTE 4 This PAS does not cover testing with contaminated or saline water, however, product manufacturers are required to provide information about the performance of their products in these conditions (see Annex C).

NOTE 5 Conformance of the flood protection product does not mean it is suitable for all situations. If the user is in any doubt as to the suitability of a flood protection product they should seek further guidance as set out in Preparing for floods: Interim guidance for improving the flood resistance of domestic and small business properties [1], or from the Flood Protection Association (www.floodprotectionassociation.org) or other professional advisers.

NOTE 6 Extreme loading conditions such as those resulting from turbulent water or from debris impact are not covered by testing in this PAS. If required in these locations, the flood protection product needs to be specifically designed and/or tested to withstand such stresses.

NOTE 7 The flood protection products described in this part of PAS 1188 are not intended for installations providing permanent flood protection, and attention is drawn to the need to ensure a safe evacuation of persons in the event of an emergency and to access and egress for persons with impaired movement. These flood protection products are installed or activated in the event of an imminent flood and removed or deactivated as soon as danger from flooding is over.

This PAS is not applicable to the testing of foam products, such as those composed with composite polyurethane.