

PAS 1188-4:2009



BSI Standards Publication

Flood protection products — Specification

Part 4: Demountable products

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Summary of pages

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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.

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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 It will be withdrawn upon publication of its content in, or as, a British Standard.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

Together with PAS 1188-2:2009, this part of PAS 1188 supersedes PAS 1188-2:2003, which is withdrawn.

For flood protection products certified against PAS 1188-2:2003, 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.*

Temporary and demountable flood protection: Interim guidance on use [1] is available from the Defra/Environment Agency joint R&D Programme website at http://sciencesearch.defra.gov.uk/Document.aspx?Document=TDfD_phase_1__1628.PDF (main report) http://sciencesearch.defra.gov.uk/Document.aspx?Document=TDfD_phase_1__9783.PDF (Appendix 1) http://sciencesearch.defra.gov.uk/Document.aspx?Document=TDfD_phase_1__9784.PDF (Appendix 2)

Information about this document

Together with PAS 1188-2:2009, this is a full revision of PAS 1188-2:2003. PAS 1188-2:2003 was divided into two parts, Part 2, *Temporary products*, and Part 4, *Demountable products*.

It is intended that this PAS will form the basis of a 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

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 intended to be demountable, for use away from buildings, but may be sealed against structures or buildings at section ends, 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.

NOTE 1 The PAS test conditions represent typical conditions that may be experienced during a flood. This includes testing the product on a concrete base for leakage and structural failure under static water levels, random waves up to 0.1 m high and parallel currents up to 1.0 m/s.

NOTE 2 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 3 Conformance of the product does not mean it is suitable for all locations, exposures and foundation types. If the user is in any doubt as to the suitability of a product to any specific location, they should seek further guidance as set out in Temporary and demountable flood protection: Interim guidance on use [1] or from the Flood Protection Association (www.floodprotectionassociation.org) or other professional advisers.

NOTE 4 Extreme loading conditions such as those resulting from turbulent water or from debris impact are not covered by testing in this PAS. In these locations the product should be specifically designed and/or tested to withstand such stresses.

NOTE 5 Demountable flood protection products are normally installed in conjunction with a pumping arrangement to remove any excessive leakage.

NOTE 6 The flood protection products described in this part of PAS 1188 are not intended for permanent installation, and attention is drawn to the need to ensure a free passage to persons in the event of an emergency and to access and egress for persons with impaired movement. These products should only be installed in the event of an imminent flood and should be removed as soon as danger from flooding is over.

This PAS is not applicable to flood protection products for installation across building apertures such as individual doors, windows, air-bricks and air vents or around buildings; these are covered by PAS 1188-1 and PAS 1188-3.

This PAS is not applicable to temporary flood protection products which are not location specific in their use, are intended to be wholly installed during a flood event and wholly removed afterwards; these are covered by PAS 1188-2.

This PAS does not specifically test flood protection products for coastal conditions. Where flood protection products are intended for coastal conditions, advice on suitability should be obtained from the manufacturer.

2 Terms and definitions

For the purposes of this PAS, the following terms and definitions apply.

NOTE For definitions of demountable flood protection product types, see Annex A.

2.1 demountable flood protection product

flood protection product that is capable of being removed and reinstalled on permanent mountings

2.2 demountable flood protection system

moveable flood protection system that is either fully pre-installed and requires operation during or following warning of a flood event or a system that requires part-installation into pre-installed guides or sockets within a pre-constructed foundation

NOTE A demountable flood protection system is made up of demountable sections and permanent sections that act together to form a demountable flood protection system when fully installed.

2.3 designated maximum water depth (DMWD)

depth above the base on which the flood protection product is installed and for which the flood protection product is intended to physically retain water

NOTE The DMWD is the water depth at which the flood protection is tested (see Annex B).

2.4 factory production control

permanent, internal control of production exercised either by the manufacturer or by their representative on the responsibility of the manufacturer

NOTE 1 Factory production control comprises operational techniques and all measures necessary to regulate and maintain the conformity of the product to the requirements of this specification.

NOTE 2 Requirements for factory production control are specified in Annex D.

2.5 flood protection product

material or equipment used to limit or restrict the flow of water, which when installed, forms part or all of the flood protection system

2.6 flood protection system

system that aims to reduce the risks of flooding to people and property

NOTE A flood protection system includes all the constituent parts of the product and the operational environment, such as barriers, joints, foundations, end connections, interaction with the subsoil, and all operational activities required during installation.

2.7 leakage

water passing through, over ("overtopping"), at the end of any intersection or between the flood protection product and the laboratory floor

2.8 overtopping

water passing over the flood protection product, driven by wave action when the static water level is below the top of the flood protection product

NOTE Overtopping contributes to the leakage in the wave leakage test (see B.6.3).