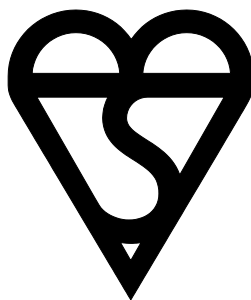




PRODUCT GUIDE – USER MANUAL



KM 76513
PAS 1188-1:2014
Flood Protection

Appropriate installation locations and exposures

Flood Ark protection systems are suitable for building apertures, doors, patio doors, air bricks, windows, garages and gateways. The Flood Ark barrier and air vent cover can be fitted to domestic properties, commercial premises and public buildings. The aluminium barrier frame either fixed directly to the property (if there is at least one course of brickwork below the threshold), or recessed into the floor, flush with ground level.

The specially developed closed cell PVC foam gasket ensures a watertight seal to almost any surface, even rough or damaged brickwork. The seals are also impervious to weathering, including salt water, and ultra-violet rays. Flood Ark’s powder-coated frames are aesthetically pleasing, unobtrusive and non-corrosive.

The lightweight, yet extremely strong uPVC extruded boards which are attached manually to the frame to create the watertight barrier are reusable, require no tools, so are easy for people of all abilities to assemble and dismantle. Each board is only 200mm in depth, and may be added or removed one at a time as flood water rises or recedes; giving maximum protection and accessibility to your property.

British Standard Kitemark Licence KM76513

Products with Kitemark labels have been tested against the standard as defined in PAS 1188-1:2014 which represent typical conditions that might be experienced during a flood in the UK. Test results summary below.

Product Tested	Maximum Aperture Width	Designated Maximum Water Depth	Recorded Leakage Rate
Flood Ark flood barrier	4.000 Metres	840mm	453 ml/hour/metre
Flood Ark air vent cover	205mm Square	840mm	268 ml/hour/metre

Conformance of our products to British Standard PAS 1188-1:2014 does not mean they are suitable for all buildings or locations. If the user has any uncertainty about the suitability of a product they should seek professional guidance.

A flood protection risk assessment could be carried out by a suitably qualified building surveyor, architect, structural or civil engineer to ensure all relevant routes for water entry have been identified and that the structural integrity of the building is not compromised by installing the flood protection product.

Agency sources of advice

See **Environment Agency** website for details of their flood alert, flooding and severe flooding warning system - www.apps.environment-agency.gov.uk/flood



National flood Forum is a national charity dedicated to supporting and representing communities and individuals at risk of flooding. They can provide independent advice on getting flood insurance, tell you about community flood groups, generally all things about flooding – www.nationalfloodforum.org.uk

Scottish Flood Forum is a national charity as above - www.scottishfloodforum.org

Advice on safe maximum period of use during and before a flood

The flood boards should only be installed in the event of an imminent flood and should be removed as soon as danger from flooding is over. Boards are installed and removed manually.

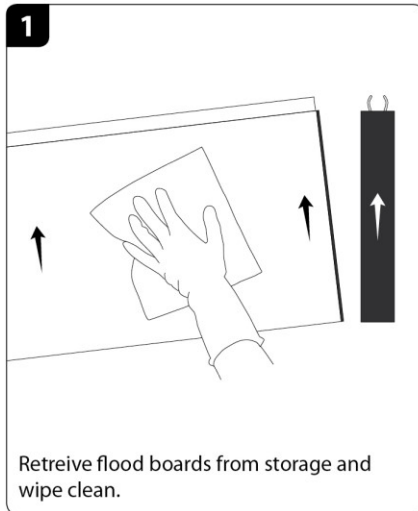
The Flood Ark Flood Protection system is intended for temporary use. However the design enables the flood boards to remain in place during a flood situation for up to a maximum of 2 weeks.

If the flood boards are to be left in the barrier for any length of time before a flood situation; during periods of heavy rain, water may collect behind the boards. To remove the water open the drainage plug at the side of the frame or remove the boards to release any trapped water.

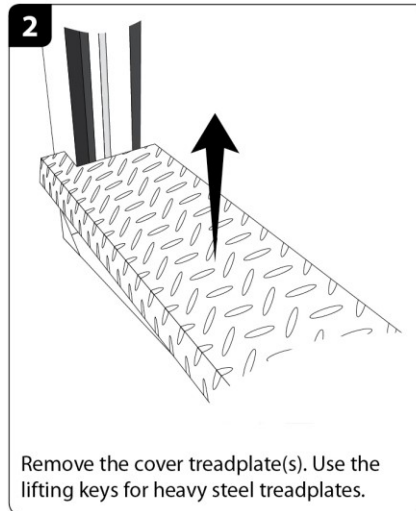
Very Important: This drain plug must be closed for the system to work in a flood situation.

If the flood boards are left in the barrier for 4 weeks before a flood situation; it is recommended that the flood boards are removed to allow the PVC foam gaskets to recover for a period of three days.

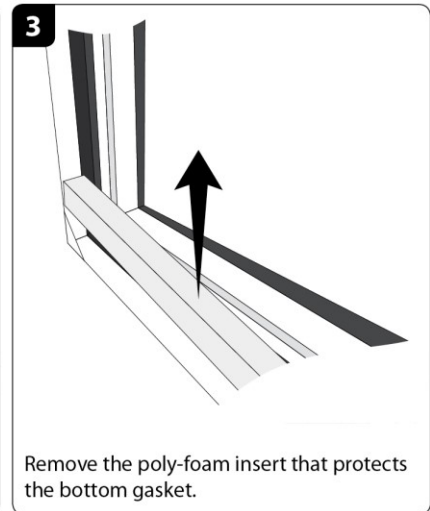
Flood Ark Protection System Deployment Guide



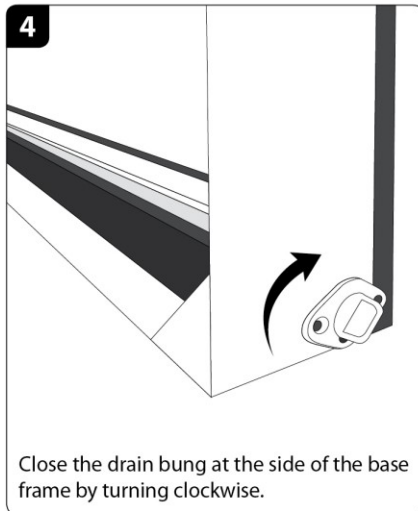
Retrieve flood boards from storage and wipe clean.



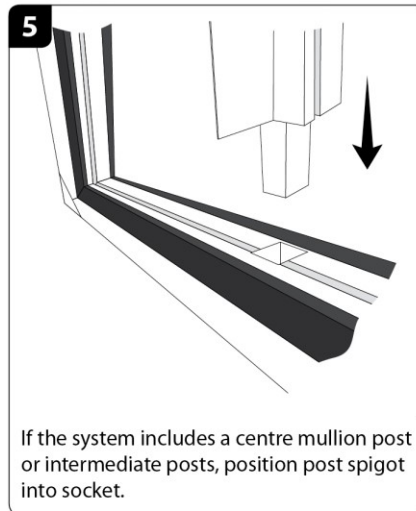
Remove the cover treadplate(s). Use the lifting keys for heavy steel treadplates.



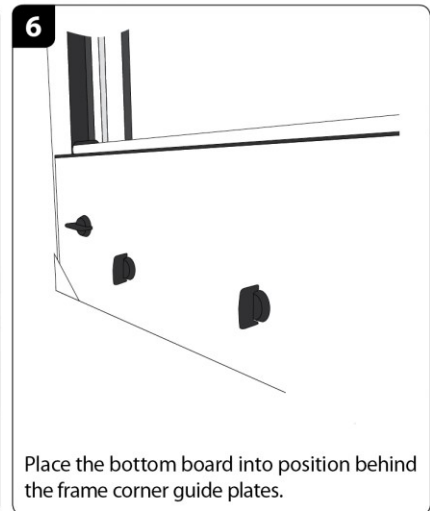
Remove the poly-foam insert that protects the bottom gasket.



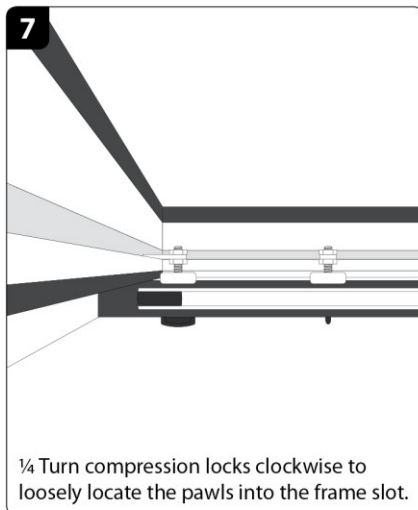
Close the drain bung at the side of the base frame by turning clockwise.



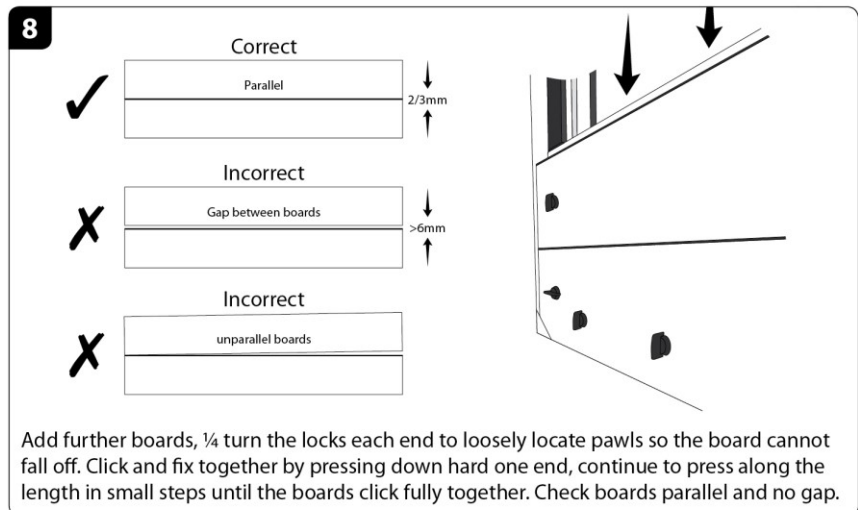
If the system includes a centre mullion post or intermediate posts, position post spigot into socket.

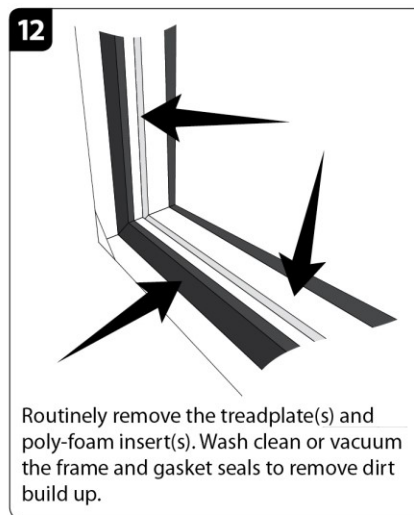
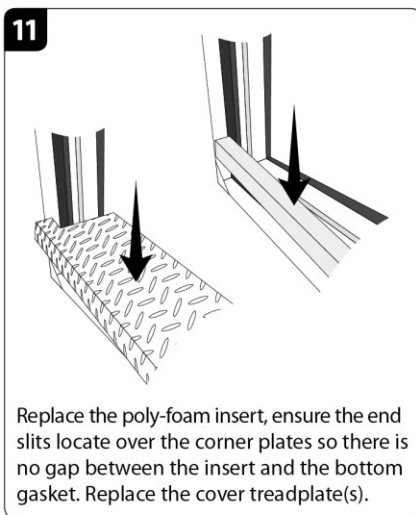
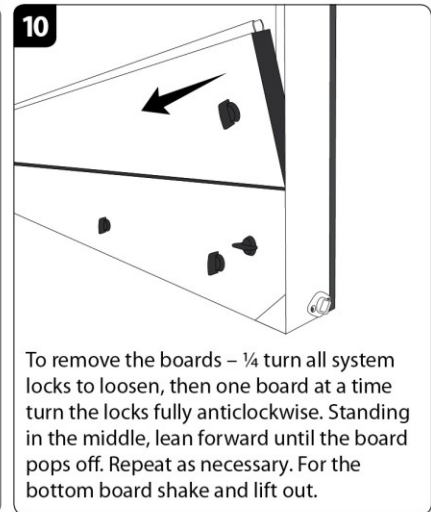
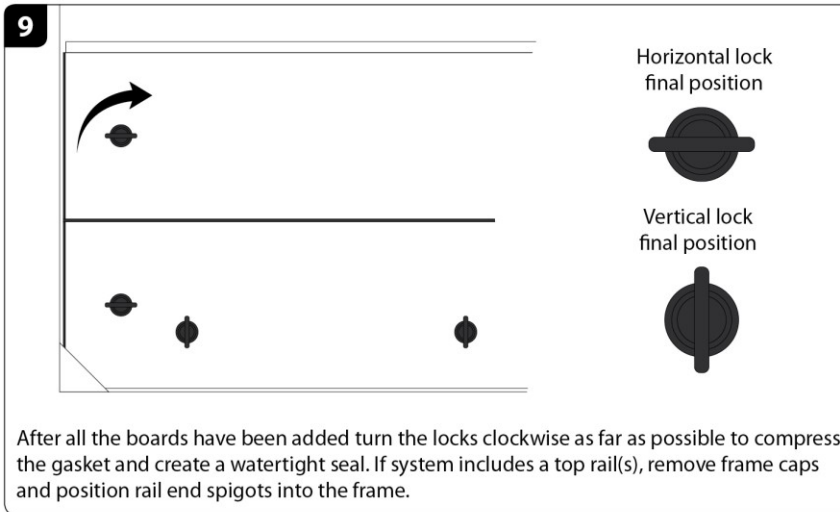


Place the bottom board into position behind the frame corner guide plates.



¼ Turn compression locks clockwise to loosely locate the pawls into the frame slot.





Flood Ark barriers are designed for temporary use to stop water from entering a property. Flood Ark barriers should be used in conjunction with other measures to mitigate flood risk. The system has been successfully tested for the British Standard Kitemark PAS 1188-1:2014 over a period of 48 hours; however, our design enables the flood boards to remain in place during a flood situation for up to 2 weeks.

Barrier flood boards are lightweight, reusable, require no tools to assemble so can be used by people of all abilities. No individual flood board weighs more than 12 kilograms so can be lifted safely in accordance with HSE Manual Handling Regulations 1992 (as amended).

Once flood boards have been retrieved from storage it takes no more than 5 minutes to deploy one barrier. For barriers with multiple boards and division posts, each set of boards will also take no more than 5 minutes to erect.

A downloadable copy of the user manual is available from www.floodark.com/support Or by calling or writing to us to request a replacement hard copy.

Installation of Airbrick and Vent Covers

1. Hold the airbrick or vent cover plate up to the frame.
2. Turn the two compression locks $\frac{1}{4}$ turn to locate pawls into slots.
3. Turn each lock another $\frac{1}{4}$ turn which will compress the gasket to create a watertight seal.

Removal of Airbrick and Vent Covers

1. Release compression locks by turning anticlockwise, ensuring the pawls disengage from the slots in the frame.
2. Once the locks are disengaged lean the plate forward to remove it.

For rooms containing gas appliances attention is drawn to the Gas Safety (Installation and Use) Regulations 1998 [4] and manufacturers' instructions regarding the free circulation of air both in and out of the building. In such instances special care should be taken when covering ventilation points. Air brick / air vent flood protection covers should be removed as soon as floodwaters have receded.

Advice on storage and reuse procedures

The uPVC flood boards should be stored so as to prevent damage occurring either by crushing or caused by animals e.g. mice, birds, cats, dogs or children. The boards will only be effective if they are undamaged and the seals remain intact. Following use, the flood boards should be removed, cleaned and stored safely. Do not let the PVC foam gaskets come into contact with strong detergents or solvents.

Maintenance procedures and advice

1. Regular visual checks should be carried out for signs of damage or distress.
2. The aluminium frames should be kept clean and free from debris.
3. **The PVC foam gaskets should be kept free of dirt and mud.** Brush with a soft brush or vacuum, wash with mild soap and water and rinsed thoroughly with clear water.
4. Do not let the PVC foam gaskets come into contact with strong detergents or solvents.
5. The PVC foam gasket seals should be inspected at regular intervals and replaced if damaged.
6. The uPVC boards should be kept clean by washing with mild soap and water and rinsed thoroughly with clear water.
7. Flood Ark Ltd provide a 3 year guarantee, which can be renewed upon completion of an inspection and service (details upon request).

Long-term durability and design life of the product (e.g. advice on how often the product should be replaced)

The main elements of the system, i.e. uPVC boards, aluminium frames, cover plates and locks have an extremely long, but undetermined life expectancy. The only component of the system which may require replacing is the PVC foam gasket. However, the manufacturer's specification indicates a life expectancy of approximately 20 years.

Possible failure mechanisms - Advice on safety precautions to be taken

1. Ensure the uPVC flood boards are fully clicked together.
2. Ensure the compression locks have been fully engaged, two quarter turns each. The locks along the bottom should all be vertical and the locks up the sides should be horizontal.
3. The barrier frames must not be removed from the fabric of the property.
4. The flood boards 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.
5. The airbrick / vent cover plates are not intended for permanent installation and should be removed as soon as the flood water recedes to ensure free circulation of air both in and out of the building.

Appropriateness for locations with saline or polluted waters

The aluminium frame, uPVC flood boards and the PVC foam seals are appropriate for flood protecting against saline water and domestic pollution.

The British Standards Institute recommends a flood protection risk assessment be carried out by a suitably qualified building surveyor, architect, structural engineer or civil engineer prior to installation of flood protection. This is to ensure the relevant routes for water entry have been identified and that the structural integrity of the building is not compromised by the flood protection product.

Advice on the disposal of life expired, contaminated or failed flood protection products

If the flood protection system has been contaminated by flood water, wash the frame and boards with mild soapy water. Avoid letting the PVC foam gaskets come into contact with strong detergents or solvents.

Unless damaged by accident or mistreatment we do not anticipate the need to dispose of any parts of the Flood Ark flood protection. All elements of the system are recyclable and so should damage occur, please telephone 01603 879 977 for advice.

Flood Ark Ltd takes no responsibility for the consequences if the above maintenance and storage instructions are not followed.

Details of product trials and independent verification

ASTON UNIVERSITY – TEST REPORT

Report on the Flood Ark uPVC-Extruded Boards Flood Protection System prepared by M. Sadegzadeh BSc MBA PhD C Eng MICE

Test-specific experimentally designed tank:

A steel water tank – 2500mm x 1250mm x 1250mm was constructed with 930mm x 1000mm open front. Open front section building brick-lined to represent a typical house front with doorway.

Procedure:

Flood Protection System frame fixed in front of the tank-opening. The uPVC boards were fitted into place and the tank was filled with water up to a level of approximately 1100 mm. (At this water level, uPVC sections exposed to a uniform pressure of 5KN per metre run).

Results:

Visual examination of system found that all sections were in perfect condition with no signs of damage or distress.

No leakage found either between uPVC boards or from sides or bottom of sections.

Test duration:

Approximately 24 hours.

Conclusion:

uPVC boards found to be lightweight easily assembled, extremely strong and watertight up to 1100mm head of water.

Based on the given results, the Flood Protection System can provide effective flood protection in situations similar to the test conditions used here.