



# Flood Protection Guide

A practical guide prepared by  
The Scottish Flood Forum





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Finding the right flood protection product for any property that is at risk of flooding can be difficult. There are a lot of products on the market designed for as many situations as there are properties. The aim of this booklet is to show a small sample of products that are available, to enable you the property owner to understand what each product does. This guide was not designed to show every product available or to replace the information on the manufacturer's web site. We would add that the Scottish Flood Forum can provide additional information on products or a home survey if required – please contact us.

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The property flood protection products shown in this brochure are for illustrative purposes only. The inclusion of any product in this booklet does not imply any endorsement of the product by the Scottish Flood Forum, due to the wide variety of possible locations Flood Protection Products could potentially be used in. The Scottish Flood Forum gives no warranties as to the quality or suitability of the flood protection products shown and excludes, so far as may be allowed by law, any warranties express or implied by statute, common law or otherwise.

If you would like a property assessment or additional information please contact The Scottish Flood Forum - [www.scottishfloodforum.org](http://www.scottishfloodforum.org) or 01698 839021.



# Scottish Flood Forum

## - What we do

- Support a network of over 60 Community flood resilience groups throughout Scotland to share information, experience and best practice
- Provide advice on flood resilience including a property flood protection survey
- Run a dedicated web site with up to date information – [www.scottishfloodforum.org](http://www.scottishfloodforum.org)

### Community Involvement:

- Public meetings
- Mediation between communities, local authorities and other agencies
- Flood warden schemes
- Local information advice centres during flooding
- Help and advice in obtaining Insurance cover
- Business continuity training for SME's
- Flood protection exhibitions and flood awareness days
- Community emergency plan guidance and help
- Our aim is to plan with Flood Risk Communities

### Recovery Support:

- Rapid deployment of recovery advice and strategy to flooded communities, Local Authorities, individuals and businesses
- Practical support, empathy and a listening ear to communities and individuals following a flood incident
- A dedicated information line and enquiries number - [01698 839021](tel:01698839021)
- Help and advice to resolve issues regarding restoration of property, insurance claims etc. following a flood



# Am I at risk from flooding?

**Is my home at risk of flooding?** Burst pipes, close to a water course, blocked drains are ways a property can be flooded. SEPA have a web site that enables anyone living in Scotland to find out their flood risk from either water courses or coastal flooding. [www.sepa.org.uk/flooding](http://www.sepa.org.uk/flooding)

**How would flood water get into my house?** See diagram overleaf.

**What is the depth of flood water?** – local knowledge, the local library, local press archives or SEPA may be able to assist you with the answers.

**How often might flooding occur?**  
Sign up to Floodline:  
[floodlinescotland.org.uk](http://floodlinescotland.org.uk)

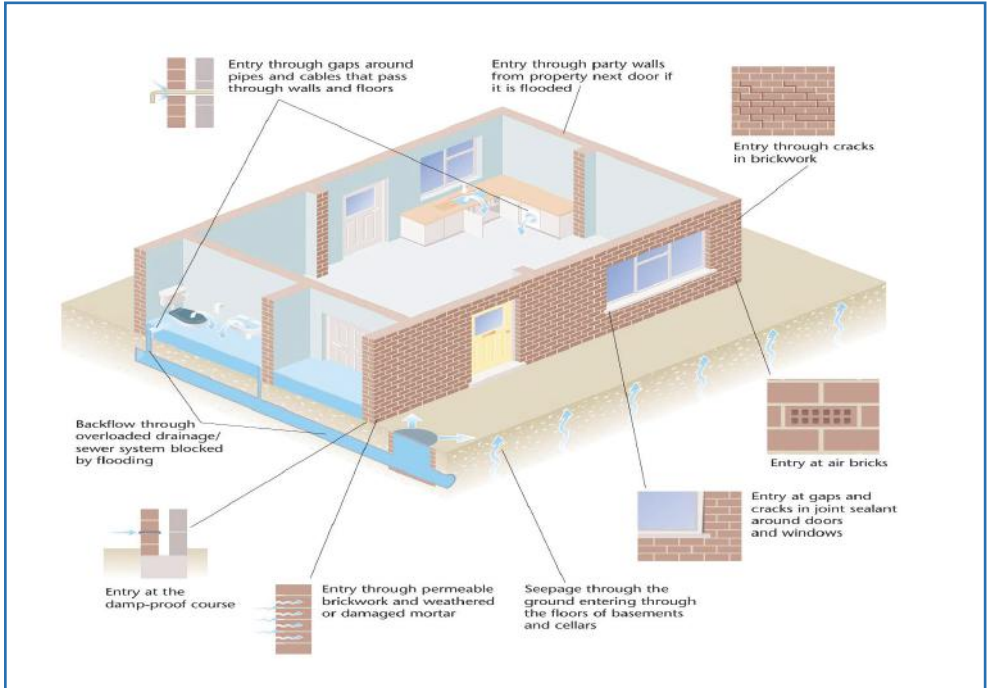
**How long would the flooding last** depends on the location of your property, and the ability to get water away, this may be via drains, watercourses, pump out. Again local knowledge may help.

**The extent of the damage** is going to be determined by the type of property – house or bungalow, construction, and depth of water, put simply – floodwater in a home destroys everything it comes into contact with.

**How will the flood affect me?**  
You may have to move out of your property for at least six months. It affects relationships; family life, finances, insurance and the impact may be felt for many years.



# How flood water enters into a property



Doors, low windows, air bricks, broken brickwork, backflow up through the toilet, ground water 'rising up' under the floor, are just a few of the many ways water can enter a property.

However there is much that can be done to minimise the entry of water into a property – that is partly the purpose of this booklet, to help and inform.

No two properties are the same; however the Scottish Flood Forum does provide a property flood protection survey – so why not ask your friends and neighbours to get together and let us visit you with independent informed free advice and information.



# Flood products

## Air Brick Covers



### **Air brick cover – with clip on cover**

The blue frame is preinstalled to the wall on top of the air brick, using sealant and screws. In a flood situation the red cover is clipped to the frame ensuring a water tight seal. After the event the red cover is removed leaving the blue frame ready for the next deployment. Currently supplied in single size only at present.



### **Air brick cover – with frame**

These air brick covers – work by fixing a secure frame directly to the wall over the air brick – the frames are permanently left in position, with the covers being fixed to the frame to prevent flood water entering the property - and removed after the event. Comes in a variety of sizes.



### **Air brick cover – fastened directly to wall**

These air brick covers are fastened directly to the wall with either four or two wall bolts, which need to be preinstalled, in a flood situation the bolts secure the cover to the wall with a neoprene seal to prevent water getting into the air brick.



### **Air brick cover – permanent**

Air brick covers permanently fitted to walls, which can be over painted. There are two expanding bungs which are fitted into the holes (black) near the bottom of the cover in times of flooding but are removed to allow the property to breathe.



### **Air brick cover – snorkel**

This snorkel air brick cover is permanently fixed to the wall over the air brick, which in the photo is just above ground level. The vents of the cover are now above flood water height - and allow the property to breathe yet prevent the ingress of flood water. Very effective on vents which are close to the floor and come in a variety of different heights.



### **Air brick cover – simple single fastening**

This air brick cover is fixed quickly and simply with a single fastening through the centre of the air brick. Its advantage is no predrilled holes in the wall, the neoprene seal is very effective at keeping flood water from flowing into the property. The cover is easily removed once the risk of flooding has passed.



### **Automatic air brick**

These air bricks are designed to replace your existing air brick, fitted to your property. They work by preventing water from the outside of the property entering the solum. They do this with a clever floating ball arrangement which seals the ventilation hole when flood water reaches the air brick. Some manufacturers use a flap valve instead. Although more expensive than some products, they are a fit once protection to the property. They have the advantage of working even if you are away from the property on holiday or at work.



Parts of the automatic air brick cover is easily removed once the risk of flooding has passed.



# Flood products

## Door Barriers

Door barriers are supplied in differing styles in this case a preinstalled frame is attached to the property – this provides a secure and water tight fitting to which the flood door is attached. The barrier is curved to cope with the pressure of flood water. When the barrier is removed the frame remains ready for the next deployment.



A typical door barrier frame fitted to the exterior brickwork in this case to the main door. Note the frame is fitted to the threshold step, and the subsequent below ground level hole covered with a removable plate. The plate is lifted to gain access to the whole frame in case of a flood situation, the Barrier then being clipped in place.

## Sectional door barriers

Garages or wider opening are always more difficult to prevent flood water entering the property, This type of product consists of 4 long panels (can be more) stacked on top of each other – each one interlocking into the other – and forming an effective barrier. Removal allows the garage to be used by cars as normal. They are supplied in shorter lengths for standard door openings.







### Door barrier – expands to fit

No frames, just a simple expansion system which allows one flood barrier to fit a number of different size openings. A very effective system but product can be a little heavy if used by the elderly. The reverse view of this flood barrier is also shown above.



### Conservatory door barrier

Conservatories like garages often are more difficult to protect because of the span of the doors. These door barriers blend in well with the existing uPVC doors – the frames which are pre installed to which the barriers are fitted come in a variety of different colours.

Door barriers can remove much of the worry and fear of flooding. Here a typical door barrier has just been installed – with the property owner within the home, being shown how to fit the barrier in case of a flood. In this case the barrier is installed to the outer brickwork of the property by a permanently fixed frame.





Some door barriers are versatile enough to be used across window openings, where the windows are low enough to be vulnerable to flood risk. In this case the whole estate were equipped with identical products.



This type of barrier uses a simple clip arrangement to secure it to a preinstalled frame. Each panel is quite light weight and can be used by people who find it difficult to lift heavier objects. This barrier can be used for garage doors as well as other openings. Depending on the property it is not limited to a fixed height of 600 mm as some barriers are – but seek advice first.



This water proof door is designed and manufactured with a special seal between the frame and the door, which effectively prevents water from entering the property.

The door is designed to blend in with the property and there is nothing which would identify it as being an effective flood barrier. Advantages are that when the door is closed the flood protection is immediately effective.



**Audible warning alarm** – Worried about flooding, this simple battery powered alarm is placed at a suitable spot in the garden. When the flood water reaches that point the alarm is triggered, giving you additional warning.

## Commercial Barriers

This is a simple steel gate, which provides full protection against flooding to commercial premises. When a flood warning is given the gate is closed thus sealing the property off from any flood water.



To prevent flood water from affecting a group of houses this water activated hydraulic barrier was installed to a Scottish housing estate. The surrounding walls also act as a flood defence barrier, when lowered the barrier is flush to the ground, when raised the barrier reaches to the top of the wall, about 1m.



These barriers are quite versatile in that they can be erected and dismantled relatively quickly even able to go around corners. The steel frame is interlinked together and a waterproof sheet is installed over the frame. This is more than sufficient to prevent flood water from reaching critical infrastructure. In this case electrical control equipment. The barriers come in a range of different heights, from 500mm up to 3m.



## Sand Bags

Note water being pumped out.

This photo says it all, sand bags are not water proof. They should only be used as a last resort and if there is nothing else to use. Always keep a plastic sheet available to reduce the seepage of flood water into the property, and place the sand bags on top of the plastic.



**Synthetic sand bags** – do not contain sand but a special polymer, they are inexpensive and very light unlike sand bags, can be deployed extremely quickly and prevent water from passing through them. They are activated by immersing in water for a few minutes, and molded to fit the location where they are to be used, in this case across a door way and stacked on top of each other up to a height of about 12 – 18 ins. Some can be dried and reused, others are square these here are rectangular.

**Floodlock door protection** - easy to fit within a door frame. The strips absorb liquid and swell to seal against flood water. An effective product that comes with a 5yr shelf life.



## Valves

**Sewage non-return valve** - keeping sewage from back flowing into the property through the toilet is often overlooked. Flap valves like the one shown are installed between the property and the main sewer, or between the septic tank and the property. They need to be installed by a plumber, as they need to be accessible incase of blockage.



## Miscellaneous

### Water ingress in solum (under floor void)

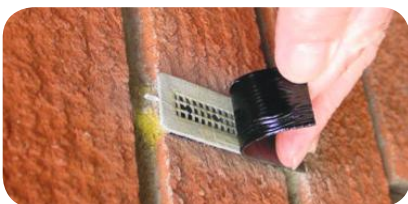
This is what happens when flood water is allowed to enter through the air bricks. In this case water came to a height of 18" - if sufficient water enters the solum can fill with water up to the joists and subsequently to the floor boards. Flood water to this depth requires extensive drying out, often including removal of the floor and joists to ensure proper drying.



**Sump pumps** – are inexpensive and invaluable in removing water from the solum (under floor void). They can be moved around wherever water may be entering the property. When pumps are fitted to the solum and the water activated, float switch allows the pump to remove water as soon as it reaches a fixed depth. Always use your pump with a RCB safety switch, beware water and electricity are dangerous.

We suggest a pump capacity of 500 ltr per min.

**Inflatable toilet bungs** - toilets can in flood conditions back flow sewage directly into your home, especially if you have a ground floor toilet, or a septic tank. These bungs are placed into the U bend, where they are inflated which prevents sewage adding to the situation.



**Micro air vents** – are fitted to many domestic properties throughout Scotland. There are commercially made rubber seals which fit over the vents, however a strip of adhesive flash band obtainable from most DIY shops, and cut to shape will work as well.

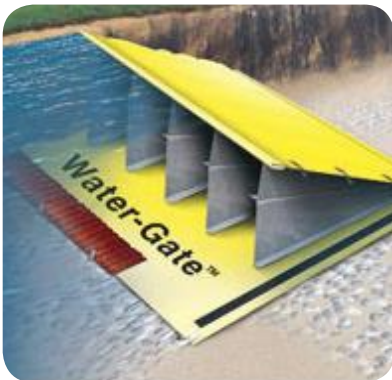
## Miscellaneous

It's not just doors and air brick covers that need to be protected. Ensure that pipes and holes in walls are sealed with water proof mastic or silicone sealant. Don't forget to check on your gas and electricity boxes, seal pipes and cables too if they are low down.



**Persistent damp** – can often be caused by soil piling up against brickwork. This can be through the movement of soil over time. The ideal solution is to cut back soil from the walls of the house and back fill the trench with gravel, this allows surface or ground water to drain away, and prevent water migration up the walls.

**This barrier** is unique in the way that once rolled out, it self deploys. It uses the weight of the water to hold the water back. The water lifts the top of the barrier and weighs the base down, forming a seal. By utilising this unique self-opening method, the barrier reduces the time, effort and number of people needed to deploy the system, making this a truly rapid flood or water diversion barrier.





# Emergency Flood kit – grab bag

Being prepared will make things so much easier if your home is ever flooded or affected by severe weather damage. Putting together an emergency flood kit 'grab bag' is a key way of minimising the risks and surviving the worst, if you choose to stay in your home or are evacuated to a rest centre.



A typical grab bag



Waterproof clothing & boots



Food / energy bars



Medication / prescriptions

## Suggested contents:

- water carrier / bottled water
- light sticks / torch & batteries
- wind-up radio
- toilet roll
- whistle / first aid kit
- money / bank card
- baby's bottle, food and nappies
- disinfectant hand gel
- rubber gloves
- camera
- analogue telephone



Toys & games



Torch & batteries



# www.scottishfloodforum.org

01698 839021



## We can help you:

- with informed impartial help and guidance in making the best choice of property flood protection
- with advice on what to do before, during and after a flood
- with an independent directory of flood products so that you can do more to protect your home if a flood happens
- if you have problems getting (or keeping) buildings or contents insurance, particularly cover for flood damage
- with advice and support via our information line and enquiries number - **01698 839021**
- with lots of relevant and useful information about flooding – check out our website [www.scottishfloodforum.org](http://www.scottishfloodforum.org)
- bring your community together to plan and prepare in advance of a flood

The Scottish Flood Forum is a charitable organisation devoted to providing help, support and assistance to both individuals and communities that are, or have been, at risk of flooding. Our work is made possible through funding from the Scottish Government.

- **Phone Floodline on 0345 988 1188 or visit [www.floodlinescotland.org.uk](http://www.floodlinescotland.org.uk) to sign up to receive free flood messages for your area.**
- **Contact the Scottish Flood Forum at [enquiries@scottishfloodforum.org](mailto:enquiries@scottishfloodforum.org) or on 01698 839021 to receive useful information about flooding.**
- **Become affiliated to the Scottish Flood Forum to keep up to date of flooding issues and become part of one united Scottish community voice.**

The Scottish Flood Forum is a registered charity: SC043783