

Property Flood Resilience (PFR)

January 2021

Property Flood Resilience (PFR) has been identified as the most viable option to reduce flood risk to properties in your area. We appreciate that many people are unfamiliar with PFR and have therefore created a series of documents to help explain what it involves for those interested in applying. Whilst PFR can bring important benefits to a property, we also want to raise awareness of the level of time and input required from the applicant and ourselves.

What does this mean for me?

We can never eliminate the risk of flooding entirely, but we can reduce the risk of water getting in to homes or businesses and reduce its impact if it does get in. The techniques come under many different names, including Property Level Protection (PLP), Property Level Resilience (PLR) and Property Flood Resilience (PFR).

Introducing effective flood resilience for homes and business premises that are at risk of flooding involves looking at a property as a whole, understanding its needs, and bringing together all the appropriate parts of a solution that together will help protect that building and limit the impact of a flood.

When it comes to flood protection it is not just a case of buying products off the shelf – there is no one-size-fits-all solution.

Improving property resilience to flooding can take many forms. There are measures which can help prevent water from entering a property, commonly referred to as **RESISTANCE** measures. Examples of such measures include:

- Flood barriers;
- Flood gates;
- Air Brick covers;
- Non-return valves; and
- Floor membranes.

Measures and actions homeowners and residents can take before flood water reaches their property, which will further limit the impact of flooding, generally fall under **PREPAREDNESS**. Measures which limit the damage caused by internal flooding and speed up the time it will take for residents to be able to return to a property post flooding are commonly known as **RECOVERABILITY** measures.

Under the York Five Year Plan PFR Scheme we are offering a free survey to eligible properties. The survey will identify the suitability of the building for PFR and recommend a list of measures bespoke to that property. For those who wish to proceed with the recommendations, we are offering a grant of up to £7,500 to install **RESISTANCE** measures, such as those listed above, to their properties. These measures aim to mitigate flood risk and damage but like any measure cannot remove the risk of flooding entirely. In addition, we provide a flood warning service to those properties that are at risk of flooding and offer further advice and guidance on what individuals can do to further improve their **PREPAREDNESS** to flooding.



Criteria that we have to meet

For us to provide PFR to a property there are some criteria that we as an organisation have to meet. These criteria are non-negotiable and are as follows:

- The property must meet the eligibility criteria listed in Step 1 of the PFR Scheme process (see next section);
- All flooding sources and routes need to be considered for a complete package of effective protection measures: partial measures may be by-passed by flood water and the investment wasted.
- The provision, specification and use of pumps is a vital element of property protection and resilience systems. This was sometimes over-looked in the earlier pilot schemes, but is now recognised as an essential component to help manage seepage, groundwater and sub-floor flooding. As such, no PFR measures can be installed without a pump also being installed, if we have identified that a pump is required;
- The height of measures and the impact on floodwater loading/pressure must be considered in relation to property construction, threshold levels and floor levels.
- In addition all products used should conform to the relevant Kitemark standards. The BSI Kitemark™ is a quality mark owned and operated by British Standards Institute.
- The property must undergo and pass a Post Installation Audit demonstrating the property has been better protected from the works carried out.



The York PFR Flood Alleviation Scheme Process

The PFR Process from start to finish can be broken down into 10 steps as follows:

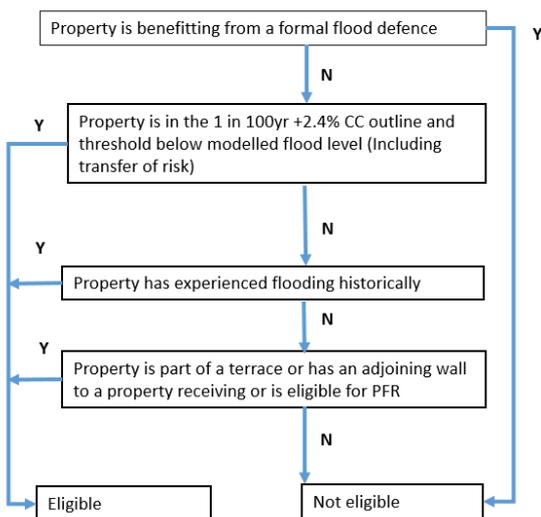


Step 1: PFR determined as most appropriate solution

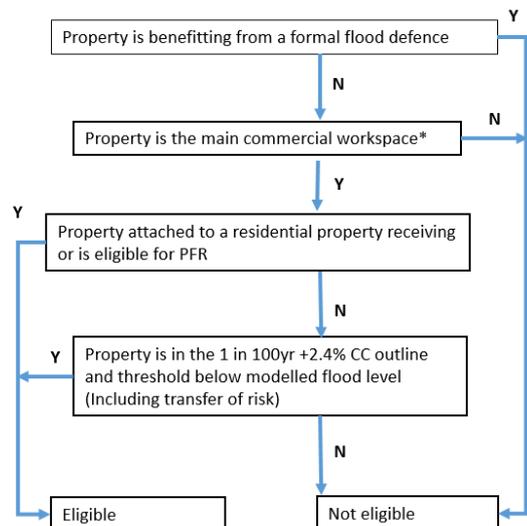
We carry out technical and economic appraisals to determine viable options for each area to determine where PFR is the most appropriate solution. We then apply the principles of the following flow charts to determine eligibility of individual properties to receive a free PFR survey which will determine what measures should be recommended.

Eligibility for PFR Flow Diagrams

Residential



Commercial



*Measures will be funded up to a cap of £7,500 to protect the main workspace. If measures exceed this cap the property owner will need to contribute the remaining costs to ensure the building is fully protected, we will not be able to fund part measures.



Step 2: Community engagement and eligible homeowners contacted

Having determined PFR as the most appropriate solution for an area, we will be in touch directly with eligible homeowners via post to inform them of this and discuss preferences and next steps. It is the homeowner's responsibility to confirm via email or post that they would like to sign up to our PFR scheme.

Step 3: Initial property surveys carried out and reports issued to homeowners

Should the homeowner wish to proceed, our supplier will carry out an initial property survey to determine the suitability of the property for PFR and the most appropriate products for the property. They will then share a report listing the recommended products with the Environment Agency and the homeowner.

Step 4: Drop in session/property owner discussion

We will then provide an opportunity for homeowners to discuss the recommendations detailed in their reports with us and the supplier to agree the best products for the property.

Step 5: Works inspection and detailed product pricing produced

Once measures have been agreed, the supplier will arrange a time with the homeowner to carry out a works inspection at the property to take specific measurements for products and provide a final price, to be used as part of homeowner decision.

Step 6: Measures and costs agreed

Resistance measures up to a cap of £7,500 will be provided to homeowners under the PFR scheme. If the measures exceed this cap, we will require homeowners to contribute towards the additional measures. More costly and invasive options such as tanking and resilience measures are excluded and would also need to be funded privately by the homeowner.

Step 7: Legal agreements issued for signature by the homeowner and the Environment Agency

Once we have agreed the measures and costs with the homeowner we will issue legal agreements to the homeowner for them to sign and return.

Step 8: Product Lead Time

Once we have received the signed legal agreements from the homeowner we will place the orders for the required products. There will be a wait time whilst products are manufactured to the specific property measurements.

Step 9: Installation

Once products are ready, we will agree a suitable installation date with each homeowner and installation should take a few days dependent on the measures required.

Step 10: Sign off/completion

The supplier will provide training to ensure the homeowner understands how to use and maintain the products installed. The supplier will provide written and verbal instruction on the operation, storage and maintenance of products.

A community test exercise usually forms part of the handover, with mock flood warning triggers and the enactment of local emergency plans, to ensure residents are able to deploy their products correctly and that community support is available to those who may need assistance. Due to the current Covid restrictions and the uncertainty surrounding the pandemic, this element is currently under review. Further information will be shared on the format when available.

We will also issue a post installation Flood Risk Report, detailing the available information on levels of flood risk and the measures that have been provided for the property. Homeowners can share this report with their insurance company who may be able to take account of the measures and adjust insurance premiums accordingly.



Frequently Asked Questions

How much will I have to pay?

Where the homeowner agrees, resistance measures will be made available under the scheme up to the value of £7,500. Where resistance measures cost more, e.g. a composite door, a contribution will be required by the homeowner.

What resistance measures are included in the scheme?

Standard resistance measures/minimum level of protection (not limited to):

1. Flood barriers or uPVC doors (as long as one exit is a barrier. See 'Can I have flood doors instead of barriers?' below)
2. NRV (non-return valves)
3. Automatic airbricks
4. Toilet bung
5. Automatic Weep holes
6. Waterproofing/repainting
7. Sump pump if required
8. Puddle pump if required
9. Sealing of entry points e.g. pipes and cables
10. Raising of ventilation for combustible heat sources

How big will my barriers be?

The height of PFR resistance measures at your property will be proportionate to the flood risk to your property. For example, properties at lower flood risk may only need 300mm high barriers.

How high can PFR measures protect to?

PFR resistance measures can be offered up to 600mm as per standard building regulations. Properties should only be surveyed up to 600mm unless the modelled flood level and property threshold level show that flood risk exceeds 600mm. Resistance measures above 600mm may compromise the structural integrity of the building and if recommended resistance measures exceed 600mm, the suitability of these resistance measures should be confirmed by a structural engineer and will be provided at the owner's risk. If the flood risk at a property is higher than 600mm, we will inform the homeowner, and our suppliers will survey the property up to the required flood risk height. If the homeowner then chooses to have measures fitted in excess of 600mm from the ground, they must accept responsibility and sign a legal waiver to that effect.

Will I get any training in how to operate my products?

Once installed, our suppliers will give full training in how to operate or fit your resistance measures correctly. Following this, written instructions will be provided in the homeowner pack.

How will I know when to put me barriers in and out?

As part of the PFR scheme it is vital that residents sign up to our free Flood Warning service. This will let you know when flooding is expected and when the risk has subsided. It is also important that residents have a flood action plan to make sure that everyone knows what to do in the event of a flood.

Can I have PFR resistance measures on my garage?

The protection of gardens, garages and outbuildings is excluded from the scheme unless there are direct implications for the main building. For example, an adjoined garage may have an internal door to the property, or resistance measures may need to be applied to the garage to protect the property. In this instance, we will make the homeowner aware of their responsibility for any resistance measures to the garage, and they will be required to sign a legal waiver.



Can I have a flood gate?

Flood gates are normally excluded as our scheme is designed to protect the main building only. If a homeowner requests a flood gate or barrier to be installed then first they must obtain a structural survey of the designated wall and cost of the gate must be met by the homeowner.

Can I have flood doors instead of barriers?

At least one main entry/exit point from the property must be protected by a flood barrier as opposed to a flood door. This is to allow emergency entry/exit to the property in times of flood without compromising the integrity of the protection.

Can I have a composite door instead of an uPVC one?

Composite doors are a specialist product and are only available for openings between 869mm and 997mm. Narrower or wider doors are available in uPVC. Composite doors are also more expensive and would be considered as an upgrade, and as such, the difference in cost would need to be covered by the homeowner.

Up to what point can I change my mind/leave the scheme?

The scheme is purely voluntary and you not obliged to receive any PFR measures until you sign the Legal Agreement in Step 7. Upon receiving your signed Legal Agreement we will instruct our contractors to order your property specific resistance products which are non-transferable.

Will the products have British Standards Institution certification/Kitemarks?

Where possible all products will have the relevant BSI certification/Kitemark. Non-Kitemarked alternatives will only be offered where no comparable Kitemarked products are available.

Who will pay for any maintenance once my products have been installed?

Where applicable, the products will come with a manufacturer's warranty which is usually 12 months. Once any warranty has expired any maintenance costs will be at the discretion of the homeowner. Recommended maintenance activities and schedules will be detailed within your homeowners pack. Detailed guidance and instruction will be provided to the homeowner on product maintenance and correct storage.

How/where will I store my removable products e.g. barriers?

We recommend that barriers are stored in a safe and dry place away from direct sunlight and that the rubber seals are not resting against anything to prevent deformation.

How long before I can expect to receive my PFR measures?

On average it can take around 9 months from property survey to completion, however, this process is relatively new to us, and our experience suggests that there are many factors which can influence the time it takes to complete. We are doing our best to speed up the process, and ask that homeowners support our efforts by making time to engage with us and our suppliers throughout the process.

I live in a conservation area/my property is a listed building. Can I still have PFR?

Yes. Properties within the conservation area and those with listed building status can receive PFR measures. Extra considerations and consents are needed which can add to the overall timeframe.

My neighbour has said they don't want PFR but I do. Can I still have it?

Yes however, if you are part of an adjoining property, whereby your neighbour chooses not to have PFR and there is a direct flow route via that property, then this would render your measures less effective.

Will having PFR resistance measures affect my home insurance?

Your insurance company will already have access to flood risk maps and be aware of whether or not your property is at flood risk, so installing PFR measures should not increase your home insurance. Following installation, we will provide you with a post installation Flood Risk Report, detailing the available information on levels of flood risk and



the measures that have been provided for the property. You can share this report with your insurance company who may be able to take account of the measures and adjust insurance premiums accordingly.

What do I do with my resistance measures after a flood?

Once the flood risk has receded you will be able to remove your deployed measures. Your homeowner pack will detail what if any cleaning/maintenance is required for each of your measures before returning them to storage.

When do I receive my homeowner pack?

After installation you will receive training and a homeowner pack provided by the installation contractor.

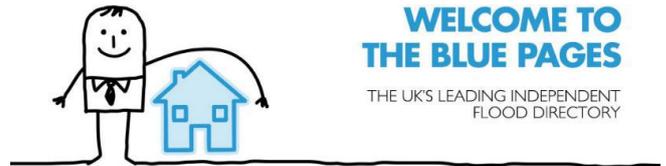
Who can I ask if I need any help with my flood resistance products?

For general maintenance, storage and replacement parts please speak to the installation contractors.

Where can I find out more about PFR?

You can find out more information about PFR on the National Flood Forum website. They have also developed a directory, the Blue Pages, of property flood products and services to advise and inform you of what is available to help reduce the risk of flooding to your home.

- National flood forum:
<https://nationalfloodforum.org.uk/about-flooding/reducing-your-risk/protecting-your-property/>
- Blue Pages: <http://bluepages.org.uk/>



These links provide a great opportunity to learn more about PFR from an independent source. To view real life examples of how PFR can be used, including examples in York, please see: <http://edition.pagesuite-professional.co.uk/html5/reader/production/default.aspx?pubname=&edid=659cb024-a5d5-4004-acbf-1d9236228817>

Any Questions?

If you have any questions not covered above, please get in touch with the team by emailing us at: yorkfloodplan@environment-agency.gov.uk

