

Our interim policy for Property Level Protection

Property Level Protection or 'PLP' is the term used to describe the means or system used to protect properties from flood risk. This interim policy will apply from winter 2016-17 until such time as full consideration of the use of property level protection in Angus has been considered, at which time the Property Level Protection Policy will be reviewed and updated. This interim policy will also be reviewed following major flooding events.

The responsibility for protection of private property in the event of a flood lies with individual owners and not the Council or any other Agency. The Council does have permissive powers in relation to flood defence and will use those powers, where appropriate, to support local communities in preparing for and dealing with floodwater.

This interim policy endorses the need to seek appropriate flood insurance is held, particularly those in flood risk areas, described in 'flood insurance' section below.

Traditionally, property level protection has been limited to sandbags, which have been used to block doorways, drains and other openings into properties as well as to weigh-down manhole covers, garden furniture and to block sink, toilet and bath drains to prevent water backing up.

- They can keep water out for short periods which can be improved by using them in conjunction with plastic sheeting.
- They can filter out some muddy sediments found in flood waters.
- They are cheap and easy to obtain.

This interim policy continues to use sandbags at this time as described in 'the use of sandbags' section below.

However, the Scottish Flood Forum (SFF) advises that traditional sandbags have many limitations:

- They may not hold back water unless a waterproof sheet is placed under them.
- They can be expensive, heavy, difficult to transport and labour intensive to assemble into flood defence barriers.
- They are prone to leakage, rot very quickly after use and contain viral and bacterial infections often present in flood water.
- They require proper environmental disposal.

The Scottish Government would like to encourage more local authorities and communities to use *Property Level Protection (PLP)* or set up PLP schemes across Scotland, particularly in areas that are unlikely to benefit from a Flood Protection Scheme (FPS) in the foreseeable future.

“Advances in innovative flood protection products over the last 10 years now provide a new option for flood management interventions that local authorities, Scottish Water and individuals can put in place. Combining these products and actions into a specific package or Property Level Protection (PLP) 'system' can provide a more effective means of limiting the impact and consequences of flooding than can be provided with sandbags. This in turn can bring greater peace of mind as well as economic gains and the prospect of a reduction in insurance claim costs.”

(Assessing the Flood Risk Management Benefits of Property Level Protection, Evidence Summary, Final Report, November 2014, JBA Consulting for Scottish Government)

It is recognised that sandbags are relatively ineffective when compared to purpose-designed flood protection products, although they still very much have their place in redirecting flows on roads. The use of sandbags and our sandbag policy for protecting properties will therefore be reviewed in light of the development of any property level protection schemes.

The investigation of the benefits of property level protection schemes (PLP) in Potentially Vulnerable Areas (PVA) are one of the actions identified to manage flood risk included in the Tay Estuary and Montrose Basin Local Flood Risk Management Plan (LFRMP) (link: http://www.angus.gov.uk/downloads/file/2396/tay_estuary_and_montrose_basin_local_flood_risk_management_plan) and Tay LFRMP (link: <http://www.pkc.gov.uk/CHttpHandler.ashx?id=36487&p=0>). PLP will be one of the main activities considered to manage flood risk within the six flood protection studies and seven surface water plan/studies that will be developed between 2016 and 2022 across Angus. It is anticipated that these Plans will identify local benefits of property level protection schemes for prioritisation of actions for the second six-year flood risk management planning cycle from 2022.

Prior to 2022, property level protection schemes subsidised or endorsed by the council will be assessed on a needs basis and schemes may be considered where appropriate and as resources and additional funding allows.

In the meantime, we strongly encourage people to use purpose made flood protection products, such as flood boards, non-return valves for plumbing and air brick covers. Alternative products, such as barriers, often provide more effective long term protection, are more easily deployed and have greater reliability when fitted correctly. You can find information on the Scottish Flood Forum website: <http://www.scottishfloodforum.org/>. The council's flood officers can also be contacted – details are available at <http://www.angus.gov.uk>.

Flood Insurance

We also strongly encourage people to seek appropriate flood insurance, particularly those in flood risk areas. Flood Re is a government backed flood insurance scheme which was launched in April 2016. This scheme will give people living in flood-risk areas access to affordable home insurance. To find out more about this initiative please visit the Flood Re website: <http://www.floodre.co.uk/homeowner/>

The use of sandbags

Advice on how to use sandbags properly can be found at the gov.uk website by searching 'Sandbags: how to use them properly for flood protection'. An extract from this guidance is included as an annex 1 to this policy.

Sandbags are available from most builders supply merchants or DIY centres and this should be the primary and principal source of sandbags for those at risk of flooding to protect their properties.

Traditionally sandbags have been supplied by the council for those at risk of flooding to protect their properties. Depending on resources available and the scale of the flood risk, the council has provided sandbags to property owners, and deployed sandbags to redirect flows and protect at risk properties. The time frame for providing assistance in the form of

sandbags during a flooding event can be very short and in many cases demand will exceed the capacity of the immediately available resources of the council.

Sandbags are often needed very quickly and demand can outnumber availability. Because of this, we will seek to ensure that sandbags distributed by the council are done so in order of priority:

1. Prevent loss of life or serious injury.
2. Maintain access for emergency vehicles.
3. Secure the safety of the roads network.
4. Protect key community facilities and 'persons at risk'.
5. Protect a number of residential properties.
6. Protect a number of business/commercial properties.
7. Protect an individual residential property.
8. Protect an individual commercial property.
9. Make sure you have your own supply if you think you need sandbag protection.

Principally requests for sandbags by residents shall be made by contacting the council through Accessline - not by contacting services or officers directly. The hierarchy of response will be as follows:

- **Initial/low demand** (guide: couple of calls per hour out of hours; couple of calls per hour per supervisor area during working day): inspect location when sandbags are requested.
- **Increasing demand** (guide: 3 to 4 calls per hour out of hours; 3 to 4 calls per hour per supervisor area during working day): deliver sandbags on request without inspection.
- **High/peak demand** (guide: when calls exceed 5 per hour out of hours; exceed 5 calls per hour per supervisor area during working day): continue to deliver sandbags on request without inspection as resources and access allows; and deploy sandbags to known high risk locations

As forecasts predict events or we are experiencing events where high/peak demand will be reached and exceeded (ground saturated and very heavy rain forecast), arrangements will be made to allow those at risk of flooding to collect sandbags from Tayside Contracts depots so that they can protect their properties – see locations below. For out of hours, a stock of sandbags will be available from outside the depots.

These self help stores are for emergency use only and should not be relied upon routinely as flood protection.

When a flooding event is imminent sandbag holdings will be increased to the levels shown below depending on the predicted scale of event and forecast demand. During a prolonged event or series of events, supplies will be replenished depending on the predicted scale of event and forecast demand, and where there is access for and availability of staff and materials. At the end of the flooding event, stock levels will be restored to minimum holdings.

| Depot | Proposed Stock holding |
|------------|------------------------|
| Forfar | 800 |
| Arbroath | 800 |
| Brechin | 800 |
| Montrose | 100 |
| Kirriemuir | 100 |

The addresses and locations of the above depots are included in annex 2 to this policy. In addition, the community storage facility at Edzell will be stocked with 100 sandbags when a flood event is forecast. The council will replenish this stock on request during a prolonged event or series of events where there is access for and availability of staff and materials.

After a flooding event, individual owners are responsible for the safe and proper disposal of sandbags - not the Council or any other Agency. The council will remove sandbags deployed to redirect flows on and to protect roads only.

Annex1: Extract from 'Sandbags: how to use them properly for flood protection', Environment Agency, March 2009

Protecting your property

Sandbags are of no use if your property is already flooded – concentrate your efforts on protecting yourself, your belongings and moving precious items out of harms way!

Consider all entry points that water could get through, not just doorways, such as – airbricks, utility service points, cable entry points. Use other solutions for entry points where sandbags won't work (such as silicone sealant).

You'll need at least 6 sandbags to keep out 20cm depth of water for a standard door opening. Each sandbag will need approximately 15kg of sand.

Filling the bags

- This is a two-person job: one to hold the bag open and one to fill.
- Do not fill bags more than half full.
- You don't need to tie the end of the bag.

Placing the bags

- Clear any debris from the area where the bags are to be placed.
- If you can, put a large sheet of heavy-duty plastic between the sandbags and the wall of your house.
- Place the bags lengthways, tucking the open end under the filled half of the bag and position it pointing into the direction of water flow.

- Place bags in layers. Like a brick wall, make sure that in the next layer each bag overlaps the one below by half.
- Stamp bags firmly into place to eliminate gaps and create a tight seal.

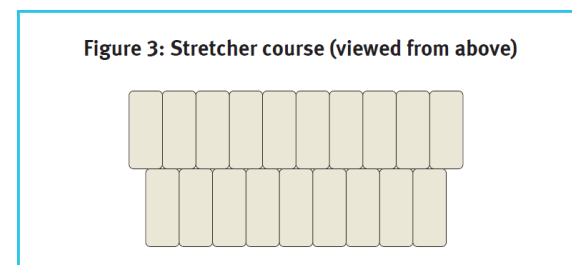
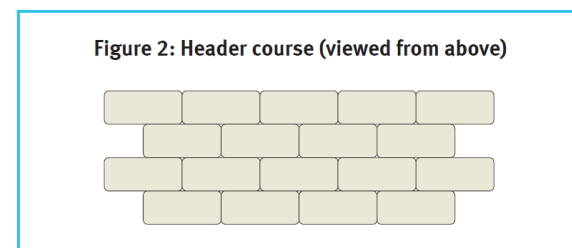
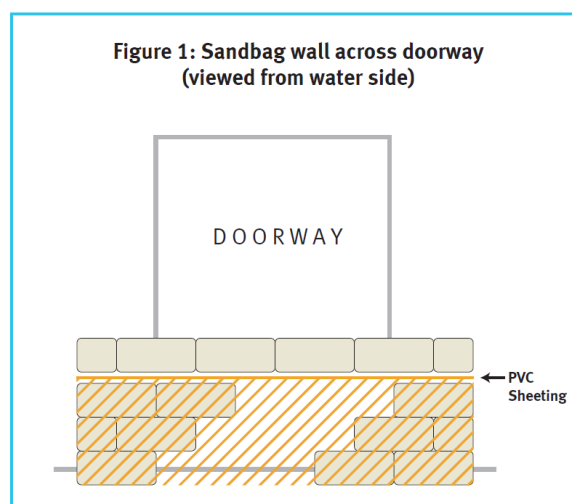
- To lay sandbags in a doorway (Figure 1), it may be necessary to empty some of the contents out or shape the sandbags to achieve a good fit without overlapping.

Building a more substantial sandbag wall

Building a sandbag wall up to 60cm high by 1 metre in length requires approximately 80 filled sandbags.

- Remove any debris from the area where the bags are to be placed and try to use firm and level ground if possible.
- There are two ways of laying sandbags – Headers (Figure 2) and Stretchers (Figure

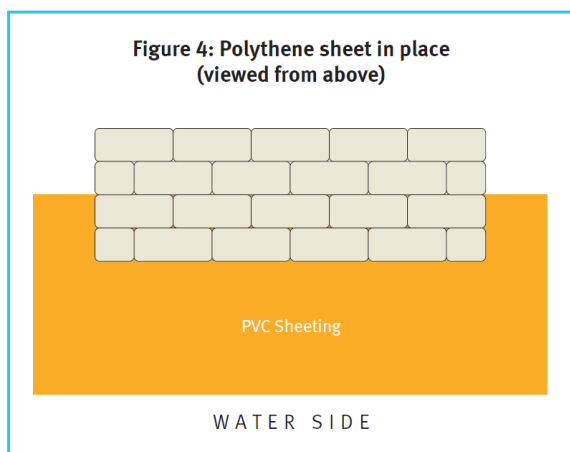
3).



- Headers should be used on first, third and fifth courses. Stretchers are used on second, fourth and sixth courses.
- Lay sandbags with seams and bag mouths facing inwards, as this is where moisture enters the bags.
- Shape the sandbags into rectangles before laying them.
- Use half-filled sandbags to enable you to stagger joints.
- Have the neck of the sandbags facing the same direction.
- If the wall or dam is going to be in place over a long period of time PVC sheeting should be used to form a barrier on the wet side of the wall. Position the PVC sheet so that the leading edge falls approximately on the centre line of where

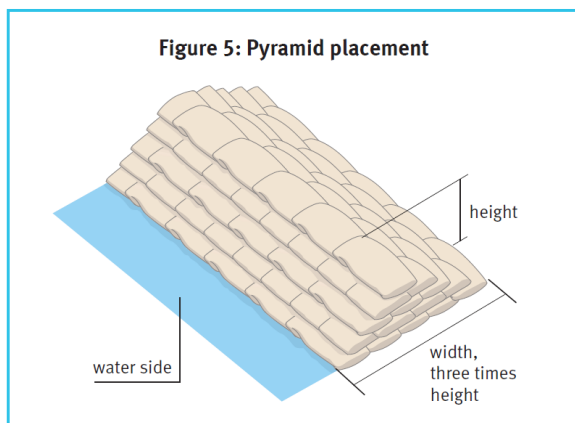
you intend to build the wall with the spare sheet showing at the front side (water side) – see Figure 4.

- If time and conditions permit, sandbags should be compacted after being laid, possibly using a vibrating plate.
- When desired height of sandbag wall is reached, pull up the PVC sheet over the top of the wall and fix in place with a final course of sandbags.



Pyramid placement method

If you need to create sandbag protection that is more than three layers high you will need to build in a pyramid style. For the



structure to be stable, you should build the 'sandbag wall' three times as wide as you need it to be high. Again use the alternative Header and Stretcher method for alternative layers. Compact each bag into place and tuck the loose end firmly under the filled portion of the bag (Figure 5).

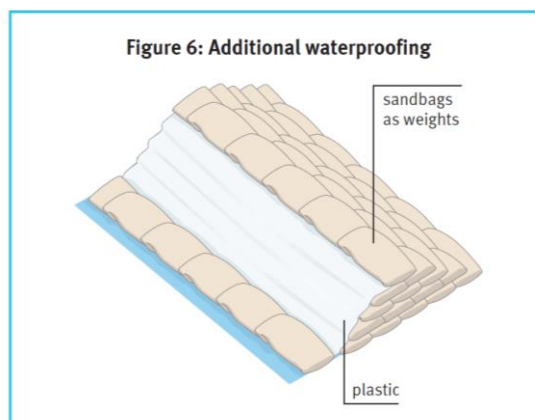
Additional waterproofing

Lay plastic sheeting across the side of the sandbag wall on the water side. Weigh down with additional sandbags (Figure 6).

Remember!

Sandbags are popular but they have disadvantages:

- During an emergency sufficient quantities may be difficult to obtain.
- They are time-consuming and require two people to fill.
- They can be difficult to handle, particularly for the elderly or infirm.
- When they come into contact with floodwater they tend to retain contaminants such as sewage.
- Sacking material is biodegradable, and will disintegrate if left in place for long periods of time.



Annex 2: Addresses of the depots where limited supplies of sandbags will be held on behalf of Angus Council

| Depot | Address | Proposed Stock holding |
|------------|---|------------------------|
| Forfar | Tayside Contracts Forfar Rd, Kirriemuir, Forfar DD8 3TG | 800 |
| Arbroath | Tayside Contracts Cairnie Loan, Arbroath DD11 4HY | 800 |
| Brechin | Tayside Contracts Commerce Street , Brechin DD9 7BD | 800 |
| Montrose | Tayside Contracts Broomfield Industrial Estate, Broomfield Road, Montrose DD10 8SY | 100 |
| Kirriemuir | Angus Council Unit 4 Angle Industrial Estate, Angle Road, Northmuir, Kirriemuir DD8 4PH | 100 |