For this guidance, “inclement weather” is defined as:

Adverse weather conditions that have the potential to impede access to and/or damage the property.

Information as to how and when snow and ice clearance or flood prevention measures should be implemented, and by whom can be confusing and mixed. The recent changes in legislation having changed the levels of liability have not helped in clarifying the position. However, underlying it all should be the focus on reducing the potential for personal injury and damage to property. Therefore, the aim of this guidance note is to assist you in managing, so far as is reasonably practicable, the risks associated with inclement weather.

It also provides an overview of risk mitigation, considerations and, as such, combines both flooding and snow/ice exposure. Clearly, your risk assessment and protocols will be premises specific and therefore you may only be required to focus on snow/ice or flooding. If you have to consider both, it may be a more appropriate to split your risk assessments and protocols.

You should consider an effective approach to pre-planning and managing the impacts (risks) during and after the inclement weather event. Any mitigation and counter measures should be based on what is considered to be “so far as is reasonably practicable”. This simply means that you assess the degree of risk of injury and/or damage against the sacrifice (i.e. measurable cost, time and effort) involved in introducing control measures to eliminate or control the risk. The “sacrifice” does not have to be grossly disproportionate to the degree of risk (in accordance with the relevant sections of the Health & Safety at Work etc. Act 1974).
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How to prepare and consider the risks

There should be a site specific risk assessment, that is reviewed annually – or sooner if there is a material alteration to premises, the neighbourhood, (e.g. if traffic - both foot and vehicular - routes are changed) or local government strategic plan. The review should be considered before winter so that amongst other considerations:

**Risk mitigation for snow/ice:**

- for significant inherent risks, is it feasible to propose a replacement/installation to mitigate the risk, (e.g. replace extremely slippery flooring in a high foot traffic route, install grit-bins, upgrade inadequate drainage for a priority route, replace large leafed deciduous tree with a more appropriate species, thereby reducing the risk of slips on rotting leaves and/or avoiding blocked drains);
- identify priority routes and areas which require clearance and treatment, based on foot-traffic, slopes, steps, areas of common access for both pedestrians and vehicles, areas in continuous shade, etc.;
- clearance strategies can be identified (i.e. cleared snow from walkways or communal areas should be placed in areas which can absorb the melting snow, otherwise you could create a more significant and longer lasting “ice risk”);
- the potential for slip, trip and fall in internal areas as a result of foot traffic transfer of snow, water, leaves, mud etc. and whether anti slip mats, additional monitoring, sufficient signage and alternate routes/or temporary structures to act as transition areas could be considered;
- identify potential areas for temporary grit/salt storage, which need to be covered to reduce wastage;
- consider additional lighting to assist residents/visitors with hazard identification.

Arboreal surveys/review to identify a strategy to reduce the potential risk of leaf litter causing trips, slips and blocked drains. There is also the potential for damage to trees/by trees from snow-loading and/or wind damage causing up-rooting or partial collapse.

**Risk mitigation for flooding:**

- identify the potential source of the flooding and the direction of flow;
- if an external party has the primary responsibility for managing the risk, put them on notice that you expect them to monitor and manage their responsibilities, (e.g. blocked storm drains on public highway on premises boundary, stream/ brook abutting boundary dammed by rubbish);
- consider the locations that will be affected and the trigger level (i.e. at what level would it start having an impact on the premises, including external communal areas, e.g. car parks, access routes, bin stores);
- identify if there are any cost effective structural/alterations that may assist in mitigating flood damage, (the installation of non-return values, flood gates, raised thresholds, tanking, etc.).

Provide residents with:

- an understanding of what they can expect you to do in the event of inclement weather, based on the requirement to provide 'reasonably practicable' protection, always confirming that additional resource would impact on their service charges;
- guidance on self-help so that they have an understanding of how they can contribute to ensuring they have a safer environment, if they elect to assist in inclement weather mitigation activity.

Assess the equipment and material you may require to provide cost-effective and timely inclement weather intervention:

- snow shovels, grit spreader, grit bins;
- contract with snow clearance companies/or your gardeners/maintenance contractor;
- pre-arrange grit supplier agreement;
- adequate anti-slip mats, appropriate signage;
- 'sandbag' systems;
• duckboards/temporary pathways;
• pumps/post-flooding event cleaning equipment;
• appropriate personal protection equipment for anyone likely to be involved.

Prepare standing data with information and contact details:

• insurance broker and insurer details (and if pre-agreed, the loss adjuster);
• local emergency snow clearance services;
• arboreal contractors (i.e. fallen trees due to wind/snow damage);
• local authority highways and environmental agency;
• grit/salt – anti-slip mat (i.e. consumables) suppliers;
• sewer/waste pumping contractor;
• local or national weather websites to select the best website to suit your weather monitoring needs;
• relevant floodline/flood warning registration;
• emergency evacuation plan, safety route and haven(s);
• asset removal relocation protocol (i.e. list equipment and portal property that can be removed/relocated to a pre-selected less flood risk areas prior to damage, (e.g. IT/electrical systems, paper records, furniture, move and lock lifts away from basement/ground floors)).

Contact details could include:

• emergency (24 hour) numbers
• any contact reference numbers
• name of main contact(s)

For property managers, this preparation will enable you to assess and provide evidential support for any specific recommendations, changes and impacts in the service charge budgets.
How can they be managed?

The risk assessments should enable you to implement an inclement weather programme.

Establish an inclement weather monitoring protocol with delegated responsibility to personnel with authority for implementation. This should include pre-determined expenditure limits in order to reduce the delay in responding to an event.

This protocol should be clearly documented and contain, at the very least, the information suggested in the standing data so that in the event of inclement weather, it is a ‘go to document’.

It must be communicated to and understood by all relevant parties.

A notice of an inclement weather strategy should also be communicated to the residents. If it is considered appropriate, guidance on snow clearance/flood protection volunteering should also be communicated and made available prior an inclement weather event. However, the guidance must also be communicated to volunteers again prior to commencement of the volunteering activity. (Page 6 below includes a section “Volunteering – illustrative risk assessment – control measures”).

Further background reading:

https://www.gov.uk/government/organisations/environment-agency/services-information
Implementing premises specific risk assessments and inclement weather protocols should reduce the potential for trips, slips and falls, and property damage, thereby reducing incident levels. This should also directly mitigate the time and money spent on defending liability claims.
Additionally, the Ministry of Justice has stated that “the prospect of a person who volunteers to clear snow from a pavement being successfully sued for damages by a person who subsequently slips on the cleared area and is injured is very small”. However a snow clearer does have a duty to clear with reasonable care, so as not to create a new and worse ongoing risk.

The Government and ABI (Association of British Insurers) continue to try and resolve the issue of affordable insurance for properties designated in flood areas. Flood Re is one such initiative, but significantly leasehold properties and owners/residents of multi-occupancy buildings are currently excluded from Flood Re protection. As a result, their insurance policies will not benefit from any ‘subsidy’ and will be at full market premium rating. This is likely to have a direct impact on the insurance premium element of the service charges, so anything that could negate the potential for increases should be considered.

Therefore, you may consider advising residents that they could contribute to negate these increases by having a clear understanding of your inclement weather protocols, which may include volunteering.
As the activities associated with snow/ice clearance and flood prevention and after flooding clean-up differ, this guidance provides an overview of some of the issues to be considered and communicated to those who may wish to volunteer.

Please note that for risk assessments to be effective, they must not be generic.

The following is an illustration of the basis of a document that could be provided to a volunteer for him/her to consider prior to undertaking the task. It is for him/her to decide to undertake the task; not you. The volunteer must be made aware it is not your responsibility or decision. It would be appropriate to ask them to sign to acknowledge that they have read and understood the risk assessment, controls and safe methods of work.
Snow/ice clearance

**Activity:**

- The movement and storage of salt, (e.g. 25 kg bags or bulk ‘mega’ bags);
- The clearance of snow and ice from the footpath or designated areas;
- The spreading of a thin layer of salt over the cleared pavement;
- Managing internal walkways to reduce slip/trip hazards.

**Significant hazards/risks:**

- Unpredictable weather may trap/disorientate volunteers;
- Cold and wet weather with strenuous activity, impacting on a person’s physiology;
- Eye/skin irritation caused by salt/weather conditions;
- Inappropriate clothing – personal protection equipment, and equipment;
- Slipping on ice, compacted snow externally and wet internal walkways;
- Falling snow/icicles from roofs, trees etc.;
- Vehicles losing control in the vicinity;
- Working in close proximity to roads/fast moving vehicles;
- Working in poor visibility conditions;
- Manual handling of salt and physical clearing and managing of snow/ice and walkways;
- Loss of/inability to use/damage to property and equipment as a result of snow loading/icicles on structures and trees;
- Consequences of being unable to access accommodation (i.e. home and/or place of business);
- The piled snow causing a blockage i.e. blocking drainage channels preventing melt water to run off, blocking people’s access to property or obstructing emergency routes/exits.

**Risk impacts:**

- The volunteer;
- Members of the public;
- Property (i.e. buildings, personal belongings and equipment, vehicles, gardens/paths and drains).

**Level of Competence:**

The volunteer must:

- Be made aware and understand the inherent risks before commencing the activity;
- Have an understanding of the equipment and how to use it safely;
- Be made aware of the correct methodology for the use of salt/grit, (i.e. personal safety, damage to the environment, and how and when to spread effectively);
- Provide a clear acknowledgment that at any point he/she does not feel confident to undertake or complete the task then he/she should not participate or, once commenced, stop immediately.
Illustrative control measures which could be issued to the Volunteer prior to commencement:

• If possible, prior to the inclement weather, walk the route and identify where there is open space, grass verges, and front gardens into which snow can be deposited. However, if you are unable to pre-plan you should still consider and understand the full implications of the task for which you are volunteering;

• Clearing snow is hard physical work so make sure, as a volunteer, you are up to it. Ensure you take plenty of breaks and know when to stop. Suitable clothing goes without saying; boots or wellies and plenty of warm and waterproof clothing, (e.g. 25% of your body heat is lost through your head and hands, so wear gloves and a hat). When working, the body will build up a sweat so be prepared to shed layers as you work. But always remember to replace the clothing when you stop work, otherwise your body may cool down too quickly which can aggravate muscular strains or chills;

• Make sure you are close to a suitable refuge (building or vehicle) so you or others can take shelter in case the weather turns inclement or gets too cold. You can also use the refuge to take plenty of rests as the work is very physical;

• Minimise the effort required by going out as early as possible so you can move the snow before it becomes compacted by people walking over it;

• If you are working near a road it is advisable to be as visible as possible and wear reflective vest/jacket and have a torch with you. Work towards the oncoming traffic so that you have the opportunity to react if there is a situation;

• If you are working alone, ensure that you have informed someone of where you are and how long you intend to be, have a charged mobile phone with you and remain in contact every ½ hr and inform friends/family of any changes to your location or estimated return time;

• Do not use water to clear snow, as this can refreeze and create black ice;

• Be aware of pedestrians. Stop work if someone approaches;

• Consider how you are going to get salt to the area to be treated. Try and avoid carrying buckets of salt if at all possible (you are at a far greater risk of slipping over in snow conditions). Carrying buckets is a manual handling risk, so use a wheelbarrow or other suitable means, (even a sledge!), or if you have no alternative only carry amounts in the buckets which you can easily manage (i.e. do not overload buckets as it reduces your ability to drop/’shed the load’ if you start slipping);

• If you are touching the salt, wear appropriate gloves that will protect your hands;

• On completion of the works ensure that all equipment is cleared and no trip hazards/obstructions are left behind;

• IF YOU DO NOT FEEL CONFIDENT TO UNDERTAKE OR COMPLETE THE TASK, YOU SHOULD NOT PARTICIPATE. IF YOU HAVE ALREADY STARTED, STOP IMMEDIATELY, THEN CHECK THAT YOU HAVE LEFT WHAT YOU HAVE DONE IN A SAFE CONDITION. IF NOT, ADVISE SOMEONE, OR CAREFULLY MAKE THE AREAS SAFE.

For further information:

Appendix 1 – “Guidance on snow clearing and salt/grit spreading” has more information.
**Flooding event**

**Pre-event activities:**
- Identify and relocate vulnerable persons;
- Identify and relocate livestock and do not forget fish in ponds;
- Remove/relocate portable assets away from potential flood area;
- Identify, and if practical, protect vulnerable landscape;
- Create flood barriers (e.g. sandbags, boarding, bunding, etc.);
- Check pumps and other equipment to be used during and after the flooding event;
- Isolate services/utility.

**During/Post-event activities:**
- Monitor flood levels, vulnerable persons and personal belongings, and adequacy of flood defences;
- Monitor Environment Agency flood-line website, local TV/radio for up-to-date information;
- The manual removal/relocation of persons, additional personal belongings that may be exposed, flood defences and pumping equipment as required, to mitigate changes in/resulting from a flood event;
- Traverse water by foot, vehicle or vessel;
- Damage assessment and evidence collection;
- Arrange and maintain temporary utility supplies;
- Security of premises, personal belongings and equipment from theft;
- Liaise with emergency services and specialist damage management companies.

**Significant hazards/risks:**
- Drowning and/or contracting waterborne diseases/contamination;
- Unpredictable weather may trap/disorientate volunteers;
- Loss of/inability to use/damage to property and equipment;
- Consequences of being unable to access accommodation (i.e. home and/or place of business);
- Cold and wet weather impacting on a person’s physiology;
- Inappropriate clothing - personal protection equipment, and equipment;
- Slipping, falling into water and being swept away;
- Losing control of vehicles and/or vessels;
- Working in close proximity to water of indeterminate depth/fast flowing;
- Working in poor visibility conditions;
- Manual handling of contaminated liquid, inanimate property/animals of indeterminate weight/dimensions;
- Uncertainty of extent, severity, duration of flooding event.

**Risk impacts:**
- The volunteer;
- Members of the public;
- Livestock, pets (including fish in ponds);
- Property (i.e. buildings, vehicles, personal belongings; business equipment, landscape).

**Level of Competence:**
The volunteer must:
- Be made aware and understand the inherent risks before commencing any of the activities;
- Have an understanding of the importance of the personal protection equipment issued and how to use it correctly.
- Have an understanding of the equipment and how to use it safely;
- Acknowledge that at any point he/she does not feel confident to undertake or complete a task then he/she should not participate or, once commenced, stop immediately.
Illustrative control measures which could be issued to the Volunteer prior to commencement:

- There will always be a requirement for specialist knowledge and professional assistance to mitigate and recover from a flooding event. However, it is acknowledged that due to the personally intrusive nature of flooding affecting your property and belongings, you may wish to volunteer.

- If possible, prior to the inclement weather, consider the activities with which you may be involved (i.e. the ‘Pre-event activities’) and make sure you clearly understand the associated hazards and risks. However, if you are unable to pre-plan, you must still consider and understand the full implications of the activities for which you are volunteering, (i.e. the ‘During/Post-event activities’);

- Volunteering to undertake any of these activities should not be taken lightly. **BE AWARE OF HEALTH RISKS.** Flood water is often contaminated and, even if it appears ‘clean’, may include elements that can cause a range of illnesses. Therefore personal hygiene, including washing hands and covering cuts or scratches, is very important. **ALWAYS** wash hands before preparing food, eating, drinking or smoking.

- Even when the water subsides, due to the residual damp environment mould can form within a few days that can affect the throat, nasal passages and lungs. Young children, the elderly and those with immune system deficiency should be kept away from properties that have been flooded until they have been passed safe for habitation.

- Medical advice should be sought immediately if any health concerns are identified.

- There is the potential for a significant amount of manual handling and physical stress (e.g. lifting, dragging, pulling, wading etc.) Be realistic about:
  
  » what you want to achieve;
  » how you are going to achieve it; and
  » whether you are capable of achieving it.

Ensure you take plenty of breaks and know when to stop. Suitable clothing goes without saying; warm and waterproof. When working, the body will build up a sweat so be prepared to shed layers as you work. But always remember to replace the clothing when you stop work or if you get wet, otherwise your body may cool down too quickly which can aggravate muscular strains or chills;

- Make sure you are close to a suitable refuge (building or vehicle) so you or others can take shelter in case the weather turns inclement. You can also use the refuge to take plenty of rests as the work is very physical;

- Whilst it is not advisable, but if you have to work alone, ensure you have informed someone of where you are and how long you intend to be. In any event ensure you have a charged mobile phone with you and remain in contact every ½ hr. and inform friends/family of any changes to location or estimated return time;

- **IF YOU DO NOT FEEL CONFIDENT TO UNDERTAKE OR COMPLETE THE TASK, YOU SHOULD NOT PARTICIPATE. IF YOU HAVE ALREADY STARTED, STOP IMMEDIATELY, THEN CHECK THAT YOU HAVE LEFT WHAT YOU HAVE DONE IN A SAFE CONDITION. IF NOT, ADVISE SOMEONE, OR CAREFULLY MAKE THE AREAS SAFE.**

For further information:

Appendix 2 “Prepare your property for flooding”
Appendix 3 “Sandbags and how to use them properly for flood protection”
Appendix 4 “Self Help For Victims of Flooding”

You may find further helpful information on the British Damage Management Association (BDMA) website, including links to flood warnings, weather and travel information www.bdma.org.uk
Appendix 1

Guidance on snow clearing and salt/grit spreading
When to grit/salt

- Check the weather forecasts in accordance with your inclement weather protocol;
- Whenever there is a risk of air temperatures dropping sufficiently to create ice/freezing conditions;
- Remember even weak sun will melt ice and assist the process;
- Pay special attention to areas that are shaded as they may not thaw out during daylight hours;
- Once an area has been gritted/salted it should continue to be treated on a regular basis until the risk of ice has passed;
- To gain the most economical and environmental solution, the minimum amount of salt should be used. As a guide, a small handful is sufficient to treat 1 m² (20g/m²);
- There is no advantage in gritting/salting deep snow; this should be cleared from the path first.

Method of Clearance

A pathway of at least one metre wide should be cleared; this will allow suitable access for pedestrians and pushchairs/wheelchairs. Snow and ice should be completely removed using a suitable snow scraper or shovel. Snow and ice should NOT be brushed or dissolved using hot water as this will make surfaces more hazardous. Once the path has been cleared, rock salt should be used to assist with the prevention of ice. During exceptional periods, a mix of rock salt and sharp sand can also be used.

Spreading should be undertaken either by mobile hand spreader or by shovel. It must be noted that only a small amount of salt is required to prevent ice build up and every effort should be made to minimise salt usage.

Paths should be regularly checked throughout the day to ensure freezing or further snow coverage has not occurred. Additional care should be taken when clearing sloping pathways and steps and it may be necessary for safety reasons to consider the temporary closure of some non essential areas of the premises (e.g. steep pathways, car parks, etc.) to avoid risks.

All persons clearing snow should be provided with suitable snow scrapers, shovels, rock salt/sharp sand, protective gloves, footwear and clothing (i.e. high visibility vests), and staff should take regular breaks from the task.

This note is for guidance and to ensure current best practice is followed. Use in conjunction with appropriate organisations risk assessments.
The most important thing is to look after yourself. Snow clearance can be a physical task; if at any point you don't feel confident to complete the task then you should not participate.

Preparing yourself for snow clearing

Make sure you are wearing suitable waterproofs, footwear as well as layers of clothing, so that you can remove and replace layers as you warm up or take breaks. If you are working near a road consider wearing reflective vest/jacket.

Planning the work

Tasks to consider:
- Identify the area for which you will be responsible for clearing snow and where the snow will be deposited;
- Where and how to access the equipment and salt;
- Local weatherproof refuge where you can take breaks, shelter, and leave refreshments and clothing;
- If working alone, have a fully charged phone and informing someone of your phone number, whereabouts, (and any subsequent changes) and time of the expected next contact;

Suitable tools to use

- Plastic lightweight snow shovels or wide bladed shovels are the most appropriate tools;
- A regular metal shovel is the next best alternative but not as efficient as the snow will stick to it and need to be cleared regularly;
- Use appropriate gloves when handling salt as it can be an irritant;
- To spread the salt you could use a domestic grass spreader or lawn feeder (make sure you wash out any salt before using on grass);
- Failing that, a small scoop or garden trowel could be used to distribute the salt, as this is preferable than by gloved hand;
- A wheel barrow (or maybe a sledge!) to transport tools, salt or move snow.

Clearing the snow

Go out as early as possible so you can move the snow before it becomes compacted by people walking over it. Ideally, when clearing a path you should aim to clear sufficient width to allow two pedestrians to pass and follow the most likely route taken by users. The cleared space should be widened at bus stops and areas where pedestrians congregate.

The cleared snow should be deposited in verges; front gardens or areas that are non-trafficked i.e. to the side of the pavement. It should not be deposited in the carriageway or drainage gullies as this will prevent melt water draining away, risking it refreezing and turning to black ice. Extra care should be taken to avoid blocking access to properties, driveways and paths.

How to tackle compacted ice

If you are too late and the snow has compacted and bonded to the pavement surface, do not despair. It is only possible to remove it via mechanical means; that good old elbow grease again!

However, this will be hard work and not very productive. Your main option is to spread a product over the ice which can become embedded into it and provide traction when people are walking over it.

When tackling compacted ice, it is better to purchase a cheaper and more effective product such as course graded or sharp sand (not builders' sand) as this will have more effect than salt. Spread this uniformly over the ice to provide traction (alternatives include cinders or cat litter).

As people walk over the ice and sand, the pressure will embed the sand providing a long term solution. If you do use sand or an alternative, the only draw back is that the pavement will need sweeping once the thaw has taken place. Once swept up, this sand can be saved and used again next year.
**Pre-salting in preparation for snow**

Pre-treatment before the onset of snow is possible action and is advisable for areas likely to be trafficked before clearing operations can start or for key locations. The salt will not stop the snow settling but create a layer of moisture that will freeze at a lower temperature than the snow that is settling above it.

Effectively this layer of salt helps stop the snow sticking to the pavement, making life a lot easier when it comes to removing the snow.

Pre-salting before the snow will not remove snow but it will reduce the risk of compacted snow bonding with the pavement surface.

**How salt works**

The most popular de-icing material is salt or sodium chloride (rock salt). Water has a freezing point of 0°C. When salt is dissolved into the water/moisture on the highway it lowers the freezing point. As a rule of thumb, the water containing salt will freeze only when it reaches -7°C. Salt stops being effective below this temperature. In regards to snow, salt is ineffective as snow and ice are the equivalent to solid matter, so there is no direct moisture into which the salt can dissolve. Snow and ice clearance is a manual exercise; removed by hand.

**How to use salt**

Clearing the snow allows the sun to warm up the pavement surface temperature which aids the process of melting and evaporating any remaining snow and ice. Where salt is available it can be spread on to the cleared pavement. This will help prevent the melt water refreezing and turning to black ice.

The amount of salt required to treat an area is much less than you think.

As a guide 20g/m² (about a small hand full) should be sufficient to clear and protect a 1m² (1 yard) of cleared surface. Provided the surface is cleared and uniformly treated it is possible to treat 400m² of footway with a 25kg bag.

A method for spreading salt, if being done by hand, is to have the salt on a small trowel and gently shake it off as you walk along. A large shovel will be heavy to hold and one blade will contain sufficient salt to cover 80m. However, spreading salt from a shovel is very inefficient and wasteful. Another method is to use small plastic domestic garden fertiliser/seed spreaders. These give an even coverage, less labour intensive and quicker.

Remember, salt does not remove snow or compact ice and spreading salt in thick layers will only be wasteful, harmful to the environment and creates a mess which will lead to complaints from local residents and shop keepers who have the salt walked into their properties.
Appendix 2

Prepare your property for flooding
Prepare your property for flooding

A guide for householders and small businesses
We are the Environment Agency. We protect and improve the environment and make it a better place for people and wildlife.

We operate at the place where environmental change has its greatest impact on people’s lives. We reduce the risks to people and properties from flooding; make sure there is enough water for people and wildlife; protect and improve air, land and water quality and apply the environmental standards within which industry can operate.

Acting to reduce climate change and helping people and wildlife adapt to its consequences are at the heart of all that we do.

We cannot do this alone. We work closely with a wide range of partners including government, business, local authorities, other agencies, civil society groups and the communities we serve.
Over 5.5 million properties in England and Wales are at risk of flooding from rivers, the sea or surface water. That’s one in six, which means there’s a high chance one of these properties is your home or business.

**It pays to prepare for flooding.**
If your home or business is flooded it can be costly, not just in terms of money and time but also inconvenience and heartache.

While it’s impossible to completely flood-proof a property, there are lots of things you can do to reduce the damage flooding can cause.

The key is to act now so you’re prepared if there’s a flood in your area.

**Am I at risk of flooding?**
You need to find out. It could save you money, help you protect yourself and your property – maybe even save your life.

Even if your home or business is not directly at risk of flooding from rivers or the sea, you could still be affected by surface or groundwater flooding.

Visit our website www.gov.uk/environment-agency or call Floodline on 0345 988 1188 to see if your property or business is at risk and for other useful flood information.

Now you understand the risk, here’s what you can do.

**Protect your property and possessions**
Whether you rent or own your home or business premises, there are many things you can do to help yourself. Some are simple and temporary while others involve permanent structural work.

You can also make improvements so that even if flood water enters your property it causes less damage, so drying-out and cleaning up is faster and easier. This means you could move back home or open for business far more quickly.
The most important thing is to prepare now by buying and installing flood products in advance.

Don’t wait until flooding looks likely as you won’t have time to buy or put the measures in place.

**Try to keep flood water out:**

- **Doors:** buy specially made flood doors or purpose-built flood boards that can be installed when flooding is imminent. You can also raise door thresholds.

- **Walls and floors:** raise damp-proof brick courses. Sealing floors (‘tanking’) can prevent water rising through the ground.

- **Air bricks:** buy specially designed covers that are easy to place over ventilation bricks.

- **Drains and pipes:** fit non-return valves to drains and water inlet and outlet pipes.

...but accept that flood water might get in.

In the case of bigger floods this actually needs to happen otherwise the weight of the water outside might cause the building to collapse. Here are some things you can do to reduce the damage floodwater might cause inside:

- **Shelving:** put irreplaceable or valuable items on high-mounted shelves.

- **Home entertainment:** fix your audio-visual equipment, for example your TV and hi-fi, to the wall about 1.5 metres above floor level.

- **Skirting:** fit water-resistant skirting boards, or varnish them.

- **Pump:** fit a pump in a basement or under-floor void to extract flood water.

- **Walls:** dry-line. Use horizontal plasterboard, or lime-based plaster instead of gypsum. Get a special draining system for cavity walls.

- **Flooring:** lay tiles with rugs rather than fitted carpets, which often need to be replaced after a flood.

- **Doors and windows:** install synthetic or waxed windows and doors, or varnish.

- **Kitchen and bathroom:** use water-resistant materials such as stainless steel, plastic or solid wood rather than chipboard. Where possible raise fridges and appliances on plinths.

- **Electricals:** raise electrical sockets, fuse boxes, controls and wiring to at least 1.5 metres above floor level. If rewiring, bring cables down the wall to the raised socket so that cabling isn’t affected.
**How much will it cost?**
Making your property resilient to floodwater will limit the distress and damage caused by flooding, which means less costly repairs and less time out of your home or business premises.

The cost of purchasing and installing products to keep floodwater out of your property will depend on the size of your property and the type of flood you want to protect against.

For example, according to the ABI, to protect your property against shallow flash floods could cost between £2,000 - £6,000.

To keep water out during periods of prolonged flooding will take bigger changes and could cost between £20,000 - £40,000.

**Buying products**
There is a variety of products that you can purchase. A comprehensive list of these can be found in ‘The Blue Pages’ directory on the National Flood Forum’s website [www.floodforum.org.uk](http://www.floodforum.org.uk).

The Blue Pages is an independent directory of products, builders, suppliers and insurers. It’s designed to provide information on all aspects of flood protection and resilience products.

**Quality check**
When you buy a flood product check it’s been properly tested and is up to the job – it should display the BSI Kitemark or equivalent accreditation for the national quality standard PAS 1188.

The British Standards Institution (BSI) maintains a list of all manufacturers of flood protection products that have been tested and achieved Kitemark accreditation. See [www.kitemark.com](http://www.kitemark.com)

The Property Care Association represents some manufacturers and designers of flood defence products. See [www.property-care.org](http://www.property-care.org)

**Insurance**
Check your buildings and contents insurance policies to see what cover they provide for flood damage.

If you make changes to your property so it’s more resilient to flooding make sure you let your insurance company know as this this might result in a reduction in excess charges or premiums depending on your insurer.

For more information about resilient repair contact the Association of British Insurers [www.abi.org.uk](http://www.abi.org.uk).
Sign up for warnings
Knowing when to put temporary flood protection measures in place is crucial. Our free Floodline Warnings Direct service can tell you when to do this by sending you a warning by phone, text and email.

Sign up for Floodline Warnings Direct online at www.gov.uk/environment-agency or call Floodline on 0345 988 1188.

Professional advice
If you’re going to make permanent changes to protect your property against flooding, we strongly recommended that you seek professional advice from a building surveyor, architect or other professional. You could contact:

Royal Institution of Chartered Surveyors (RICS). See www.rics.org

Royal Institute of British Architects (RIBA). See www.architecture.com

Where can I get more information?
If you would like to get a better understanding of flooding, see our web site or call Floodline on 0345 988 1188.

Don’t forget to sign up to our free 24 hour Floodline Warnings Direct service.

We have information offering you practical advice on what to do before, during and after a flood. It’s available in PDF, print, CD and MP3 file. You can download them from our website or order them from Floodline.

Contact your local authority to find out if flood protection grants are available for your property.
Would you like to find out more about us, or about your environment?

Then call us on
03708 506 506 (Monday to Friday 8am to 6pm)

email
enquiries@environment-agency.gov.uk
or visit our website
www.gov.uk/environment-agency

incident hotline 0800 80 70 60 (24 hours)
floodline 0345 988 1188 (24 hours)

Find out about call charges: www.gov.uk/call-charges
Appendix 3

Sandbags - how to use them properly
Sandbags
and how to use them properly for flood protection
We are the Environment Agency. It’s our job to look after your environment and make it a better place – for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.
Do sandbags work?
Traditionally, sandbags 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.

However, sandbags are relatively ineffective when compared to purpose-designed flood protection products.

Some of the pitfalls are:
- It takes two people to fill them (unless you have a sandbag filling machine).
- They take time to fill (approximately one hour to fill 12 sandbags).
- They can be difficult to handle.
- Laying them can be very time-consuming.
- Sacking material is biodegradable and will perish if left in place for a long time.
- It is difficult to place sandbags in water and particularly in running water.
- Sandbags do seep water even when well-stacked and trodden into place.

As a result, we strongly encourage people to use purpose made flood protection products, such as flood boards, non-return valves for plumbing and air brick covers.

How to obtain sandbags
Don't assume that the authorities will provide you with sandbags in a flood emergency!

It is the responsibility of property owners to take appropriate action to protect their property from flooding.

Your local council may have some sandbags ready to deploy at times of flooding, but their priority is to protect the public at large. You should check with your own local authority in advance to find out what their policy is and how you can get access to sandbags before flooding starts. There may be a charge for this service.

Remember, during a flood crisis there may be limited stocks per person or supply routes may get blocked.

If your local authority doesn’t supply sandbags, you can buy unfilled sandbags and a supply of sand from most DIY stores and Builders Merchants, but remember that if there is a flood expected in your area demand may exceed supply as people rush to buy them.

In an emergency you can use alternatives such as pillow cases or refuse sacks and fill them with garden soil.

Important Health and Safety Considerations
Filling sandbags and building a wall is a physically demanding activity so it is important that all those involved are fit enough to carry out the work.

Remember that they can get heavy quickly, so do not overfill, or fill them too far away from where you want to position them.

A tall sandbag wall must be designed by engineers to withstand the water pressures, as failure or collapse of the structure could pose a danger to anyone nearby.

It is essential the everyone involved in building a sandbag wall is equipped with appropriate personal protective equipment, including gloves and steel toecap footwear. If the sand is dry, eye protection in the form of safety glasses is also required.

If emptied and dried the sacks can be filled again, otherwise they will rot after a period of time if damp. If sandbags are contaminated by flood water, advice should be sought from your local authority environmental health department regarding their safe disposal.

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. You should use sharp, not soft, 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.

More information on protecting yourself from flooding can be found on the Environment Agency website: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

In certain circumstances, local authority grants may also be made available to cover some of the costs of providing resistance and resilience products for individual private dwellings. Contact your local authority to find out whether you may be eligible.
Would you like to find out more about us, or about your environment?

Then call us on
08708 506 506 (Mon–Fri 8–6)

email
enquiries@environment-agency.gov.uk

or visit our website
www.environment-agency.gov.uk

incident hotline 0800 80 70 60 (24hrs)
floodline 0845 988 1188
Appendix 4

Self help for victims of flooding
Some of the things you can do

Gather tools and Equipment

To carry out essential work to keep further damage to a minimum you are likely to need brooms, scrubbing brushes, mops, buckets, detergent, disinfectant, rubber gloves, wellingtons, protective clothing, tools such as hammers, nails and screwdrivers, strong refuse bags and shovels. You may also need appropriate face masks if carrying out work on your property.

Assess Status of Mains Electricity and Gas Supplies

This can depend on the height and location of the flood water:

• Get professional advice if equipment or sockets have been affected by water;
• Do not attempt to switch on any device that has been affected;
• It may be necessary to arrange for an electrician to install a temporary supply board.

Take Pictures of Your Property and Any Damaged Possessions

If you do not have a camera, or your camera has been damaged in the flooding, you may be able to buy cheap disposable cameras at supermarkets, chemists, etc.

Keep a Record of the Damage and Any Action Taken

• Write down a description of the overall state of the property;
• When the water has subsided mark the high water point, including the date, on each wall;
• Make a list of damaged items and their condition;
• Note down actions you have taken in detail.

Remove Standing Water and Mud Where Possible

Consider, if mud or debris is piled up against an internal or external wall, this could be affecting the structure; only attempt to move this type of material if the amounts are minimal. Once water and mud have been removed floors can be rinsed down.

Remove Saturated Carpets, Rugs and Furnishings

To reduce health risks these should be taken outside the property and, if possible, disposed of. Carpets can be cut up to make removal easier. Take pictures and keep a small sample of carpets and other materials as evidence of the damage.

Protect Furniture and Possessions from Further Damage

• If you have access to a freezer – important documents, photographs and books that are water damaged should be wrapped in polythene or plastic bags and frozen for restoration at a later date;
• Undamaged furniture and possessions should be moved to a higher level where possible;
• Furniture that cannot be moved from water affected rooms should be raised off the floor;
• Plastic bags should be placed under the legs of wooden furniture to avoid further water being absorbed.

Dry with Care

• Open windows and doors;
• Do NOT attempt to dry out property with the use of central heating or other heating appliances;
• Be aware that a combination of heat and damp can cause further damage to the property and can encourage mould growth.

Don’t Take on Too Much

Provided you are able-bodied, keeping busy may help you to cope with the situation but you need to adopt a reasonable approach:

• You should only carry out work you can manage comfortably and safely;
• Don’t work for too long without a break;
• Recognise that the stress of your circumstances can make you more vulnerable to health problems;
• If in any doubt, wait for advice from an insurer, loss adjuster or professional contractor.
Appendix 5

Good technique for lifting
Think before lifting/handling. Plan the lift

- Can handling aids be used, e.g. sack barrows?
- Where is the load going to be placed?
- Will help be needed with the load?
- Are there likely to be any obstructions on the route?
- For a long lift, consider resting the load midway on a table or bench to change grip.

Keep the load close to the waist. Keep the load close to the body for as long as possible while lifting. Keep the heaviest side of the load next to the body. If a close approach to the load is not possible, try to slide it towards the body before attempting to lift it.

Adopt a stable position. The feet should be apart with one leg slightly forward to maintain balance (alongside the load, if it is on the ground). Be prepared to move your feet during the lift to maintain your stability. Tight clothing or unsuitable footwear may make this difficult.

Get a good hold. Where possible the load should be hugged as close as possible to the body. This may be better than gripping it tightly with hands only.

Start in a good posture. At the start of the lift, slight bending of the back, hips and knees is preferable to fully flexing the back (stooping) or fully flexing the hips and knees (squatting).

Don’t flex the back any further while lifting. This can happen if the legs begin to straighten before starting to raise the load.

Avoid twisting the back or leaning sideways, especially while the back is bent. Shoulders should be kept level and facing in the same direction as the hips. Turning by moving the feet is better than twisting and lifting at the same time.

Keep the head up when handling. Look ahead, not down at the load, once it is being held securely.

Move smoothly. The load should not be jerked or snatched as this can make it harder to keep control and can increase the risk of injury.

Don’t lift or handle more than can be easily managed. There is a difference between what people can lift and what they can safely lift. If in doubt, seek advice or get help.

Put down; then adjust. If precise positioning of the load is necessary, put it down first, and then slide it into the desired position.

Also beware:

- Snow shovelling is particularly strenuous because it uses arm work which is more taxing than leg work;
- Cold air can affect the cardiovascular system, impacting on muscle performance;
- Do not hold your breath when lifting or shovelling as this can put extra unnecessary strain on your body.
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To be the worldwide value and service leader in insurance brokerage, risk management, employee benefits, and retirement services

Our Goal
To be the best place to do business and to work

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