

Flooding

Plan, prepare, protect



www.flooding.ie

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Introduction

The impact of flooding can be devastating. It is important that those whose properties are at risk take appropriate action to resist flooding. The aim of this publication is to raise public awareness of the dangers of flooding and the measures that can be taken to minimise the damage that can be caused to persons and property by the hazards of flooding.

As this booklet shows, much can be done by people themselves to reduce the damage caused by flooding. The information is presented in a simple, straightforward way which will assist people to make adequate preparations and take all reasonable precautions to protect themselves in the event of flooding. Hopefully, it will be a practical help to all those whose homes, farms or businesses may be at risk.

Who can help	Contact Telephone Number
Local Authority	
Gárda Síochána	
Insurance Company	
Doctor	
Registered Electrical Contractor	
Registered Gas Installer	
Plumber	

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Fact:

As little as 300mm (one foot) of fast-flowing water can move most cars off the road.

01

Assessing flood risk



The easiest way to discover if your house is at risk from flooding is to find out the history of flooding in the surrounding area. For example, your house may be at risk from flooding if it has flooded in the past or if flooding has previously occurred in the locality. If you have not lived in the area long, your neighbours or a local historian might know if any floods have previously occurred.

Additionally, you could check a number of OPW websites that provide information about flood risk:

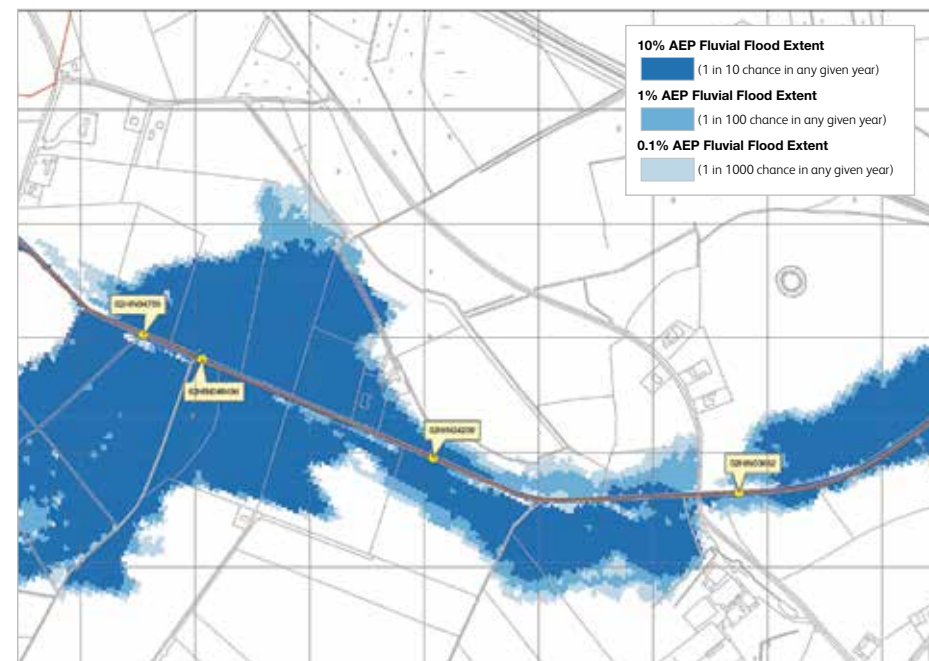
- Historical flooding information is shown at www.floodmaps.ie
- Predictive flood maps are published at www.cfram.ie and maps.opw.ie as they become available
- Coastal flood hazard maps are available at www.opw.ie/en/floodriskmanagement/floodanderosionmapping/icpss/

Another way to assess the risk of flooding in your area is to study the surrounding land and water courses. You could be at risk from flooding if:

- Your house is near an open water source, such as a river, the sea, a lake, a stream, ditches or drains.
- Your house is in a hollow or a low-lying area where floodwater could collect.
- Your house contains a basement.
- The Ordnance Survey maps indicate 'liable to floods' at the location of your property.

If your property fits into any of the criteria noted above then you could be at risk from flooding due to:

- Rainfall filling rivers, streams, ditches and urban drainage systems beyond their flow capacity.
- Floodwater overflowing river banks and flood defences onto floodplains.
- Coastal storms leading to the breaching of coastal flood defences due to storm surge and wave action.
- Blocked or overloaded drainage ditches, drains and sewers overflowing across roads, gardens and into property.
- Overloaded sewers back flowing into property.
- Rain that is so heavy that run-off flows overland down hills and slopes.
- Rain soaking into the ground causing ground water levels to rise and flood.



It is important to remember that while flood defences, such as walls or embankments, do provide some protection against flooding, they do not provide total protection. Flooding of areas behind such defences can occur from water behind the defences being unable to drain away (such as storm water from heavy rain) or from floodwaters spilling over the top of defences in particularly extreme events. If your property is behind a defence, it will flood less frequently than if the defences were not there, but it will still be at risk.

Fact:

Just 150mm (6 inches) of fast-flowing water can knock you off your feet.

02

Preparing for a flood



If you live in a flood risk area you should always have preparations in place in case a flood should happen. Long-term preparations are the best way to ensure that your property is protected against flood damage.

- To improve the flood proofing of your walls you can use products such as liquid membranes, polymer/cement coatings, mastic asphalt or pre-formed sheet membranes.
- To improve the flood resistance of your windows and doors ensure that the seal around the frames is intact and has no cracks. Also, treat any wooden frames with oil-based waterproof stains, paint or varnish.
- There are a range of temporary defences that can be used to protect your house in the event of a flood, such as sandbags, floodboards and wrapping. If purchasing these products please refer to Chapter 5.
- If you are carrying out any extension or building work on your house, it would be a good idea to consider having a waterproof membrane built into the foundations. Also consider closed-cell cavity insulation at ground-floor level and a raised damp-proof course. The electrical sockets should be placed above the height reached by floodwater in previous years and any air conditioning, heating or gas units should be situated on the first floor or in the attic.
- Ensure that any streams, rivers or lakes on your property are able to flow freely. Check for blockages in the stream and ensure that the banks have not eroded.
- Always ensure that you have a stock of materials which are useful during a flood, such as plywood, plastic sheeting, sandbags (unfilled), sand, nails, a hammer, shovel, bricks, blocks of wood and a saw.
- Stay vigilant and regularly inspect your property for cracks or gaps in the brickwork and floors or around windows, doors and pipes.
- If you live in a flood risk area it is always a good idea to store any sentimental personal items upstairs or above the highest possible flood level as these are impossible to replace. The same is true of bank and insurance details as well as essential contact numbers.
- Valuable items, such as computers, televisions, etc., should also be stored if possible above ground level. A computer, for example, should be kept on the table or desk rather than under it.



Fact:

66 % of flood deaths occur in vehicles.
Most happen when drivers make a single,
fatal mistake trying to navigate through
flood waters.

03



Creating a
flood plan
for family and the elderly

If you live in a flood risk area it is a good idea to have a family flood plan in place so that everyone knows what to do if a flood occurs. This is especially important if you have any very young or elderly family members living with you. Outlined below are some suggestions for your plan.

- Keep a list of emergency numbers close to the phone, or stored in the memory of your phone or mobile.
- Make up a flood kit and ensure everyone knows where to find it. Your flood kit should consist of a torch, some warm and waterproof clothes, a battery or wind-up radio, rubber gloves, Wellington boots, a first aid kit and blankets.
- Make a list of children's essentials that you will have to bring with you if you have to leave. For example, milk, baby food, sterilised bottles, nappies, a favourite teddy or toy.
- Think about which of your possessions are most valuable to you. List the items and make sure you know where these things are so that you can move them quickly to safety.
- Does anyone in your family need medication? Don't forget to take it with you.
- Gas and electricity: make sure you know where the shut off points are. Could you find them in the dark?
- If you have to leave do you have somewhere to go? Will you be able to get there, bearing in mind that some roads might be blocked by the flood?
- If you have elderly or disabled family

members in the house, how might you get them out safely?

- Don't forget your pets. Ensure you have somewhere safe for them to go. If you have to leave your home, can you keep them with you, or will they need to be kept elsewhere?

Special advice for the elderly

If you are an elderly person living alone, try to think about where you would go in the event of a flood. Do you have family or friends you could stay with? If not, accommodation could be arranged by your local health authority. Here are some precautions you should take in case a flood occurs:

- Plan an escape route, particularly if you are in a bungalow or basement.
- If you live in a house and have window locks, always keep a key upstairs so that you'll be able to let rescuers in if necessary.
- Make a list of useful numbers and keep it in a safe place. The list should include:
 - ✱ Family and neighbours who can help.
 - ✱ Your Local Authority and Garda station.
 - ✱ Your Local Health Services.
 - ✱ Your insurance company and emergency numbers.



Fact:

One third of flooded roads and bridges are so damaged by water that any vehicle trying to cross stands only a 50 % chance of making it to the other side.

04

Flooding & business owners



If your business is in a flood risk area you should have a flood plan in place. Make sure that all staff know what to do in case of a flood.

Be prepared

- Insurance policies – are you insured for flood damage, business interruption and lost revenue?
- Make a list of important telephone numbers, including contacts for gas, electricity, water and telephone providers.
- Make a list of employees' contact details in the event of an evacuation. This might include mobile telephone numbers, or numbers for their home or the home of a friend or relative.
- Think about staff who may need special assistance in the event of a flood (e.g. elderly or people with a disability).
- Incorporate a flood plan into your health and safety plan. Identify evacuation routes for staff. Organise emergency drill (as per fire drill).
- Know the location of cut-off points for gas, electricity and water. Ideally, these should be marked on a map that is stored with your flood plan.
- Be aware of the location of chemicals, oils or other materials that could be dangerous or contaminate flood water. These should be stored safe from floods and other hazards.

Protective actions

- Note key stock, equipment and possessions that may need special protection from flood waters. Consider backup for IT systems.
- Consider things you may need during or after a flood (e.g. sandbags, plastic sheeting, loudspeaker, etc.).
- See if it's possible to move key operations, such as shipping and receiving or customer services, to another building.

Suppliers and external links

- Identify products and services you will need in the event of a flood. Make back-up plans or arrangements for short-notice cancellation of deliveries.
- Consider contracting in advance with companies whose help you may need after a flood. This avoids the frustration of finding help in an emergency, and puts you in a better position to negotiate costs.
- Identify people who can help you before, during and after a flood.



Fact:

Flood water can move manhole and drain covers, creating invisible dangers.

05

Making a home flood resistant



If you live in a flood risk area you should always have preparations ready in case of a flood. Preparing a plan for what you should do in the event of a flood is well worth the time it may take – it could save you a lot of money, inconvenience and stress, and could even save your life!

Sandbags

It is a good idea to always have a supply of sandbags at hand if you live in a flood risk area. If you do not have sandbags you can use alternatives such as pillow cases or refuse sacks filled with garden soil. Remember not to fill them too early or far away from the site where you may need them as they can get very heavy, very quickly.

- When filling a sandbag wear protective gloves as sand is abrasive.
- Do not fill the bags more than half full. It is not necessary to tie the ends of the bags, simply tuck the open ends underneath when you are stacking them.
- Remove any debris from the area where the bags are to be placed.
- Place the half-filled bags lengthways and parallel to the direction of the 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.
- If you need sandbag protection which is more than three layers high, build them up in a pyramid style: begin with a base more than four sandbags thick and then build upwards, tapering towards the top.
- For extra waterproofing cover your sandbag wall with plastic sheeting, making sure to weigh it down with additional sandbags on the ground.

Although sandbags are a popular defence against floods they do have their 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 can disintegrate if left in place for long periods of time.



Floodboards

Floodboards (or flood barriers) are removable barriers that can be placed across openings, such as doors, in the event of a flood. There are a number of specifically designed, commercially available products that can be bought and fitted. If you buy floodboards, you should look for a product that has a quality assurance mark (such as the 'kite' mark).

It is also possible to make your own floodboards. However, care should be taken to make sure they are strong enough and that they fit properly into the opening for which they are intended to form a proper seal.

The easiest way to make floodboards is to construct a wooden or metal barrier that is secured flat against a wall, door or across gateways or paths by means of a frame. The pressure of the floodwater itself will help seal the barrier. The efficiency of the boards will be determined by the strength of the walls and the durability of the frame fittings. The most common type of floodboard is one which can slide down into the frame, as this can be removed easily when not needed. But you can also make a hinged variety which can swing closed across any gaps. It is important that floodboards fit precisely. If in doubt it may be best to buy specialist items.

Wrapping

Wrapping is an advanced method of reducing the effects of floodwater by enclosing the bottom 600 – 900 mm of a property in plastic sheeting.

The process involves digging a trench in front of the wall you wish to protect. The plastic sheeting is attached to the wall above the expected height of the floodwater. It is run down the wall and placed over a drainpipe at the base, before being run through the trench and secured on the other side with weights or sandbags. Wrapping a building takes some DIY ability and needs to be started well before any floodwater arrives as it does take some time. There are alternatively commercially available products that can be bought and fitted to your property.



Warning!

In cases of severe flooding (where floodwater rises above 1 metre) keeping water out of your property can be more harmful than letting it in. The stress on the building caused by that amount of water can damage the structure and foundations of the building. Therefore you should never block doors, windows or air-vents over 1 metre in height.

If you are worried about any work you are planning to do, please contact the Building Control Officer in your Local Authority. They can provide advice and guidance on ensuring that any works planned to be carried out will comply with the building regulations.

To find the phone number of your local authority log onto www.lgma.ie



There are ready-made flood protection products available to buy from a variety of companies.

Floodgates

These slide in front of entrances such as driveways and doors, to stop floodwater entering your property.

Floodbags

These bags can be used instead of sandbags. They soak up the floodwater and then form a barrier to prevent the water from going any further.

Barriers

These come in a variety of shapes and sizes, and can be used to prevent floodwater entering your property.

Fact:

Scientists predict that climate change may lead to more frequent flooding in the future.

06

In the event
of a flood



If a flood threatens your area there are a number of steps you can take to minimise damage to your property, but **remember safety should always be your first concern.**

- Don't try to walk or drive through floodwater.
- Avoid contact with floodwater if possible as it may be contaminated or polluted.
- Take care when walking through shallow water – manhole covers may have come off and there may be other underwater hazards that you cannot see.
- Never try to swim through fast-flowing water – you may get swept away or struck by an object in the water.
- Always wear suitable clothing when working in or near floodwater.
- Disconnect cookers, washing machines, dishwashers, etc. connected by ridged pipes to prevent damaging the machine and the pipes.
- Store any electrical items upstairs or above flood level.
- Have medication to hand (if needed).

Outside your house

- Move your car to high ground if possible.
- Move any items kept outside, such as garden furniture, to higher ground. Remember that floodwater could get into your garage so move any chemicals or fuel to ensure that they do not spill into the floodwater and cause damage.
- Unplug any exterior electrical connections such as outdoor lighting, pond pumps and filters.

Inside your house

- Move valuables and other items to safety. Place them above the flood level or upstairs.
- Empty the contents of furniture that cannot be moved and put them upstairs.
- Remove curtains if there is time – if not tie them over the curtain rail.
- Put sandbags at any openings where the water could gain access.
- Turn off gas and electricity.



Fact:

Electric currents can pass through flood water from downed power lines and cables.

07



Looking after
livestock
and pets



If you have a farm, you will need to think not only about your family and house, but also your livestock. Likewise if you have pets at home, you will need to consider their safety in the event of a flood.

Livestock

- Create a list of emergency telephone numbers, including those of your employees, neighbours, veterinarian, state veterinarian, poison control centre, local animal shelter, animal care and control, local Teagasc office.
- Make sure every animal has durable and visible identification.
- Ensure that poultry have access to high areas in which to perch, as well as to food and clean water.
- Remove barbed wire and consider re-routing permanent fencing so animals can move to high ground in a flood.
- Make sure you have containers large enough to water your animals for a week.
- Identify alternative water and power sources. A generator with a safely stored supply of fuel may be essential, especially if you have electrical equipment necessary to the well-being of your animals.
- Secure or remove anything that could float and move about.
- Identify routes by which livestock can escape to higher ground and away from floodwaters. In the event of a flood, open farm gates so that livestock can make their way to higher ground.

- If water is rising, try to drive stock through water free of obstructions. Grazing animals swim well, but the greatest problem for them are fences and other obstacles.

Pets

Do you have a plan for your family pet in case of a flood? Having supplies and a plan before a flood will give you peace of mind, save precious time and may even save your pet's life.

- Make sure that your pet has a durable name tag with your name and phone number on it.
- If floodwater enters your property place pets upstairs or in cages above water level.
- Is there someone who could look after your pet for the duration of the flood, if you have to evacuate?
- In the event that you need to evacuate your house you will need supplies for your pet, such as:
 - * a sturdy crate and/or carrier/cage.
 - * a pet first aid kit.
 - * a leash and harness or collar.
 - * non-spill bowls.
 - * for cats, a litter box and litter.
 - * food and water.

Fact:

Even if it is not raining you may still be affected by floods from storm surges, spring tides, and heavy rainfall upstream from your location.

08

Flooding facts



Floods are one of nature's most destructive forces. All counties in Ireland have experienced some kind of flooding, after spring rains, heavy thunderstorms, or winter thaws. They can be unpredictable and are potentially fatal. Here are some facts which show just how dangerous a flood can be.

- As little as 300mm of fast-flowing water can move most cars off the road.
- Just 150mm of fast-flowing water can knock you off your feet.
- Scientists predict that climate change may lead to more frequent flooding in the future.
- 66% of flood deaths occur in vehicles, and most happen when drivers make a single, fatal mistake trying to navigate through flood waters.
- Floods are the most common and widespread of all natural disasters.
- One-third of flooded roads and bridges are so damaged by water that any vehicle trying to cross stands only a 50% chance of making it to the other side.
- Flood waters move fast enough to roll boulders, tear out trees and destroy bridges – a process known as scouring.
- Flood water is often contaminated by overflowing drains, animal carcasses and refuse.
- Electric currents can pass through flood water from downed power lines and cables.
- Flood water can move manhole and drain covers, creating invisible dangers.
- Because water displaces bodyweight, the deeper a person becomes immersed in floodwater, the less the person weighs, so the more difficult it is for them to remain upright.



Fact:

Floods are the most common and widespread of all natural disasters.

09



After a flood

Always be careful when re-entering a property after a flood. Flooding can weaken foundations and move heavy items into unstable positions. Have any electric, gas or fuel-based service checked by a professional before turning them on and take the following precautions:

- Assume all power lines are live – check that the power in the property is off before you do anything.
- Check for the smell of gas and make sure the mains are turned off.
- When entering a room look at the ceiling for any signs of cracks or bulges. Wet plaster is very heavy and can pose a threat to the structure of the property.
- If your basement is flooded do not rush to pump it out. If the ground outside is saturated it could create uneven pressure on the basement walls, leading to potential structural problems.
- Be careful when moving any debris and seek help in moving heavy or unstable items that could trap or crush you.
- Do not enter any building that has large amounts of sediment either inside or lying against it, as the structure may be unstable.
- Be careful when moving around inside the property: standing water can hide a lot of hazards.
- Standing water can be a breeding place for micro-organisms which can be released into the air when the water is disturbed. These can be a health hazard if inhaled. Remove all items from the water as soon as possible and wear a protective mask if asthmatic or if you have chest problems.
- Remember that water can be contaminated – wash your hands with disinfectant if they come into contact with floodwater or silt debris.

Once you are satisfied that it is safe to enter your property there are a few things you must do before you start to clean:

- Record the damage caused by the flood with photographs and/or video.
- Mark the water levels on the walls for reference.
- Check with your insurance company. They will usually pay for any clearing up, cleaning and sanitising following a flood.
- Always make sure your insurance company has given approval before any work is carried out.



Fact:

Floods waters can move fast enough to roll boulders, tear out trees, and destroy bridges - a process known as scouring.

10

Insurance cover



When claiming for flood damage on your insurance remember the do's and don'ts below:

- ✓ **Do** make sure that you have home insurance and that you are covered for flood damage.
- ✓ **Do** telephone your insurance company's 24-hour emergency helpline to get the process started as soon as possible.
- ✓ **Do** commission immediate emergency pumping and repair work to protect your property from further damage.
- ✓ **Do** get advice from your insurance company on reputable contractors and builders.
- ✓ **Do** check your policy booklet to see if the loss or damage is covered under your policy (see also your insurance company's website). If so, check the limits of such cover.
- ✓ **Do** complete the claim form confirming the cause of damage and enclose repair/replacement estimates.*
- ✓ **Do** check with your insurer if you have to move into alternative accommodation, as this is often covered by your policy.
- ✓ **Do** make sure your insurance company knows where to contact you if you have to move out of your home.
- ✓ **Do** keep an inventory of all your written and telephone correspondence with your insurance company.
- ✓ **Do** record the damage caused by the flood with photographs and/or video.
- ✓ **Do** mark the water levels on the walls for reference.
- ✗ **Don't** begin any work without the approval of your insurance company.

If possible, don't throw anything out before it is seen by an assessor. Alternatively photograph items before disposal.

*Remember your insurance policy is not a maintenance contract. Normal wear and tear may not be included under your policy.



Fact:

Because water displaces bodyweight, the deeper a person becomes immersed in floodwater, the less the person weighs, so the more difficult it is for them to remain upright.

11



Restoring your home after a flood

Cleaning up your home after a flood is a big job, but if you follow the guidelines below you will be able to finish the job safely and efficiently.

- Make sure that the gas, electricity and any fuel taps are turned off.
- Temporary electricity can be hired, but adequate ventilation is vital, as generators can produce carbon monoxide. Let the engine cool before re-fuelling.
- Make sure any appliances that use gas are disconnected.
- Make temporary repairs to the roof if it has been damaged. Tarpaulin makes a good temporary covering.

Cleaning up

Before you begin to clean up your property make sure you have the equipment you will need. This includes:

- A camera to record the flood damage.
- A basic tool kit with a hammer, nails, screwdriver and spanners.
- Brooms, mops, scrubbing brushes and buckets.
- Domestic detergent and disinfectant.
- Rubber boots, gloves and protective clothing.
- Shovels.
- Heaters, fans and a dehumidifier if available.
- Heavy-duty refuse bags.

Remove standing water

- The fire service may supply a pump out service, for which there could be a fee, or you could hire a pump from a DIY store. Alternatively you can hire a specialist water

damage company to pump the water out for you.

- Drain water away in stages to avoid problems with the water pressure on the structure of your property.
- Do not heat your home to more than 4°C until all standing water is removed.

Removing mud

- Shovel out as much mud as possible and use a hose to clean out the rest.
- If there is mud on the inside and outside of your walls, remove in stages so that the loading remains even.
- A high-pressure hose should not be used to remove mud from your property.

Cleaning and disinfecting

- Scrub surfaces with hot soapy water and a heavy-duty detergent.
- Items such as soft furnishings, clothes and foodstuffs that have come into contact with floodwater should be placed in rubbish sacks (tied securely) and disposed of.
- You will probably need to hire a skip to deal with all the refuse from your house. If you are making an insurance claim, do not throw anything out until you are told to do so by the insurance company. Alternatively, photograph items before disposal.
- All food preparation surfaces need to be cleaned thoroughly and disinfected.
- Allow all cleaned surfaces to dry completely as there are germs that can thrive in wet conditions.



Air circulation is the best way to dry out a property and clear the air inside. Be patient and make sure the property is completely dry before you move back in.

Some do's and don'ts

- ✓ **Do** open your doors and windows to ventilate your home.
- ✓ **Do** ensure your house is secure.
- ✓ **Do** unblock airbricks and vents.
- ✓ **Do** wash your hands with disinfectant if you came into direct contact with water.
- ✓ **Do** check external walls and the roof for structural damage before entering a property.
- ✗ **Don't** attempt to turn on any services until they have been checked by an expert.
- ✗ **Don't** eat any food that has come into contact with floodwater.
- ✗ **Don't** attempt to move any heavy or unstable objects by yourself – get help.

Dry the property

- You can allow your property to dry naturally, but that can take months. Forcing the drying process can speed it up so that it only takes a number of weeks. Whatever way you choose to dry your property, make sure that the moisture trapped within the structure of the property is removed. Sometimes the walls may feel dry on the outside, but they are still damp internally. If in doubt get a professional in to ensure that your property is completely dry.
- In all cases, the earlier the drying process is started, the greater the chance of success will be – the first 48 hours after a flood are the most critical.

- If your heating has been tested by a professional and is certified safe to use, it can be turned on to help dry the house. Keep the temperature at around 20 to 22°C. Excessive temperatures should be avoided as rapid heating may lead to cracking of plasterwork, etc.
- Be aware that temperature alone will not dry your property. Air circulation and humidity are critical factors to consider.
- Good ventilation is essential so keep windows and doors open during good weather and ajar during wet weather.
- If you are using a dehumidifier leave external windows and doors closed, especially during wet weather.

Don't forget security

There have been instances of looting during the aftermath of a flood and while it is important to ventilate your house, it also pays to be security conscious. Remember that burglar alarms may have been affected by the water and might not work.

Do not leave external windows and doors open when the property is unoccupied, and make sure that it is properly locked when you leave. If necessary cover any open or broken windows with security mesh.



Brickwork

- Even after your property has dried out your brickwork may still contain moisture. The best way to dry this is through natural evaporation. Open all the air vents to speed the process up.
- Keep an eye out for cracks in the walls as bricks can shrink or crack as they dry.
- Do not repaint brickwork until it is completely dry.
- You may notice a white salty growth on the walls. This will stop when the wall is fully dry and can be removed with a brush.
- If brickwork fails to dry have an expert check your property for rising damp.
- Covers on airbricks should be removed once the floodwater has receded.
- Do not light fires for at least two weeks after flooding in a brick fireplace. Steam will be created if the bricks are not dry and this can damage the chimney.

Floors

- Remove floor coverings such as vinyl, carpet or tiles. Insulation materials that have become wet should also be removed, disposed of and replaced.
- Chipboard floors will be seriously damaged by floodwater and should be removed and replaced. If this is not possible, they must be strengthened with wooden struts from below.
- The spaces beneath concrete floors should dry out naturally and the floor will not be

affected. If you think additional ventilation is needed you should contact a builder.

- If your property has suspended wooden floors, some boards should be lifted so that any water present can be removed. This can be achieved by draining through air bricks, using a pump or, if necessary, cutting holes in the perimeter walls of your property. Do not attempt to cut holes without professional advice.
- If floor joists show signs of rot have them replaced and treat the surrounding area to prevent spread.
- Floors that are heaved or cracked should be replaced if they do not return to their original level. If they are at their original level, you can build another floor on top of them. If this is the case a vapour barrier should be installed between them.
- The best way to test a floor for moisture is to use a meter. The safe moisture level for softwoods is 18%.

Glass and windows

- Clean all windows and oil locks and hinges to prevent corrosion.
- Single glazing is unlikely to be affected by floodwater, but check the condition of the putty, window locks, etc. to ensure that the window is secure.
- Double-glazed units should be inspected to ensure that floodwater has not eroded the edge seal. Check for mud and water trapped in the hollow windows and door frames. If there is moisture inside the



glass, drill holes at the top and bottom of the frame to drain it out. If there is condensation between the frames the unit will have to be replaced.

- Sash windows may distort and swell following a flood. Do not force them open as this can cause further damage. The swelling should reduce during the drying period. If it does not return to its normal size when the wood is completely dry, then it can be planed to fit the frame.
- If sash windows have to be opened to assist with drying the property then remove the beading and the opening sash. Temporary beading can be screwed into position

for added security when the property is unoccupied.

Insulation

- Insulation that has become wet must be removed and replaced as it loses its insulating qualities and inhibits the drying process.
- Fibreglass insulation is an irritant. If removing it, wear protective clothing.
- If you think that wall-cavity insulation has been damaged by flooding, seek expert advice before trying to remove it.

Interior decoration

- Low-permeability wall coverings like vinyl wallpapers, gloss paint and tiling will hamper the drying process. Remove the wall coverings from at least one side of the internal walls to help speed up the drying process.
- Timber stud partitions may rot if not dried properly.
- Do not redecorate for at least 3 months after the walls have dried and any repairs have been done. Painting or wall papering too soon can result in blistering, mould or peeling.
- Staining may occur when re-painting with emulsion. This can be avoided by using an oil-based or stain-block paint before applying emulsion.
- If your kitchen units are made of chipboard they will be severely damaged by flooding. Chipboard may expand, distort and lose its strength. It's also impossible to disinfect properly and should therefore be discarded. Consider replacing it with solid wood or plastic, especially if there is a risk of future floods.

Plaster and dry linings

- Gypsum-based plaster absorbs large amounts of water and will distort in a flood. Damaged plasterwork needs to be replaced, but wait until you are sure that crack movement and salt deposition have ceased.
- When you are re-plastering consider using tanking instead, as this is more resilient to floodwater.

- Where there is plasterboard, remove skirting boards. Then cut or drill holes through the plasterboards or dry linings to drain trapped water and aid ventilation.
- It is vital to ensure that the walls are thoroughly dry internally before beginning any redecoration.

Structural damage

Structural damage may not necessarily be evident for some time after the flood. Make regular checks on your property and check for these tell-tale signs:

- Changes in the line or appearance of a roof ridge (best observed from a distance).
- Buckling of walls, identified by horizontal cracking or areas that appear to have moved out of vertical alignment.
- Vertical or diagonal cracks which indicate that walls or footings have settled.
- Bulging or dislodged sections of property.
- Deep scouring which has led to exposed foundations.
- Any new cracks bigger than 5mm above windows or doors.

If you notice any of these signs, contact your insurance company immediately and get the advice of a structural engineer or building surveyor.

Building Control Officers in each Local Authority can provide advice and guidance on ensuring that any works planned to be carried out will comply with the building regulations.



Walls

- Traditional brick or concrete walls will generally dry out well. Ensure bricks are clear for ventilation.
- Hose down and scrub external walls.
- You may notice a white salty growth on the walls. This will stop when the wall is fully dry and can be removed with a brush.
- If you wish to speed up the drying process, consult a professional builder about locating vents at about one metre intervals all around the property at damp-proof course level and also at the top of cavities behind masonry cladding.

- Seek professional advice if the walls of your property have had moisture sealants applied to them as this could hamper the drying process.
- Remove any substantial sediment or debris piled against the walls as this will exert a force upon the walls and should therefore be removed in careful stages. If the loading is both on the inside and outside of a wall, seek to maintain levels evenly as you remove them.
- Have wall cavities inspected by an expert to ensure that the walls are secure. If wall ties are corroded get an expert to replace them.

Wood

- If wood can be dried within a few weeks then decay is unlikely.
- Wood-framed walls need to be fully exposed unless the flooding only lasted a few hours. In order to do this, plasterboard, vapour-control membranes and insulation should be removed up to the highest level of the flood water.
- Wooden window frames may swell and jam when wet. Have an expert check whether rot is present. Wet timber can be treated with preservative plugs. Once dry, the frames can be redecorated.
- Wooden staircases may have become unstable and weak. Check the support of the staircase and, if required, strengthen it with extra struts. Stabilise loose treads once the staircase has dried out.
- Fire doors are often constructed with layers of fire resistant compound packed in their cores. Floodwater can permanently damage these, so they should always be replaced.
- Wooden trim and door framing attached to the wall may deteriorate during prolonged drying periods.
- If there is more than 18% moisture present in softwood, fungal growth can begin

Restoring services

You must have an expert check your property's services before you turn them back on. The damage caused by the flood may not be obvious and switching on a service could be very dangerous.

Electricity

An electrician will check the junction boxes, socket outlets, light switches and ceiling connections to ensure that there is no water trapped inside them. Modern wiring can withstand a short period of flooding, but if your property was flooded for more than a couple of hours then you might need to replace the wiring in your house. Consider re-routing cables to drop down from above.

Gas

Water and mud may enter gas systems during a flood. A registered contractor can check all your appliances, as these may be dangerous, even if they appear to be working normally.

Water

Mains supply water should not be affected by flooding, but wash the taps and then run them for a short time to ensure that silt has not entered the system.

If you suspect that your mains supply has been contaminated contact Irish Water and boil tap water for at least 20 minutes before use.

Check the pipe work in your house to ensure that it has not been damaged and check any insulation around the pipes and replace as necessary.

Water supplies that are not on the mains system, such as cisterns or wells, may be contaminated and should not be used until they have been tested over a period of time. Consult a specialist for advice.

Sewers

Drains and sewers are rarely damaged by floods, but they may block and back up. Check this by flushing toilets and running taps. Report any blockages to Irish Water as soon as possible.

If sewer repairs need to be made, consider installing anti-backflow devices.

If you have a private sewage system, make sure that there is no damage that could result in a health hazard. Saturated soils may interfere with its proper function. Do not use the system until the floodwater level has subsided.

Service damaged tanks, etc. and have them inspected as soon as possible by a professional.



Fact:

Floodwater is often contaminated by over flowing drains, animal carcasses and refuse.

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Restoring the garden



If a flood occurs your garden could be severely damaged. Here are some tips on how to protect and restore your garden:

Soil and Borders

- Sodden soil can lead to shallow rooting, making plants unstable and prone to drought in dry spells. Wait until the soil dries out and then do some deep digging (turn over the soil to the depth of your spade) to prevent this problem.
- In the case of seawater flooding, the only thing you can do is lift precious plants, wash off the soil and replant them in containers.

Please remember: Elderly neighbours may need assistance in restoring their gardens.

Vegetables

Throw away crops that have been covered by floodwater and let weeds germinate to help dry out the soil before replanting.

Plants

- Most garden plants will survive a few days' immersion in water, but the roots will need oxygen. Fork the plants out of the soil, wash off the silt and debris from the roots and foliage and replant them in a drier part of the garden or a pot.
- Trim back any browning or dead leaves, stems or branches.
- Add slow-release fertilizer to the soil to replace lost nutrients.
- Raise plants in containers onto bricks to help them drain.

Lawns

Do not walk on a waterlogged lawn. Wait until it is dry and gently aerate the top soil with a fork to about 13cm. Work some coarse lime-free sand into the holes and reseed any bald patches.

Ponds

Most aquatic life can normally cope with freshwater flooding, but seawater will probably cause fatalities. The best way to preserve your pond is to tie netting over it to prevent fish and aquatic plants from being swept away.

