

 ENVIRONMENT
AGENCY
Floodline
0845 988 1188



After a Flood

How to restore
your home



Introduction

A flood in your home is a worrying and often frightening experience. When the floodwater has gone there is the additional distress of cleaning your property and repairing the damage it caused.

This guide will help you through this difficult time. It provides basic advice on what actions you need to take. Once prepared with information, you can start to take control of your immediate situation. Having a plan will help you deal more effectively with the recovery period and get your life back to normal.

The recovery phase is likely to be a very stressful time. Take care of yourself and your family. Accept support from relatives, friends and neighbours. Talk openly about your feelings to release tension. Get proper food and rest. Pace yourself, take one step at a time and don't be afraid to ask for help.



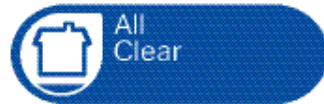
Flooding possible. Be aware! Be prepared! Watch Out!



Flooding expected affecting homes, businesses and main roads. Act now!



Severe flooding expected. Imminent danger to life and property. Act now!



An all clear will be issued when flood watches or warnings are no longer in force. Flood water levels receding. Check all is safe to return. Seek advice.

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This guide has been produced by the Environment Agency in partnership with the Construction Industry Research and Information Association (CIRIA). It is also available with diagrams and photographs on CIRIA's website www.ciria.org.uk/flooding

While the authors believe the information contained in this guide is correct, it offers basic advice only and is not a substitute for expert or professional opinion which should be sought for any DIY, repair or restoration work carried out after a flood.

Do not re-occupy your home until these three steps have been taken:

1. Remove mud
2. Clean and disinfect
3. Dry out

Useful Equipment

- camera and film to record flood damage
- basic tool kit including a hammer, nails, screwdriver and spanners
- brooms, scrubbing brushes, mops and buckets
- domestic detergent and disinfectant
- rubber boots, gloves and protective clothing
- shovels
- heaters and fans
- heavy duty refuse bags

Basic Advice

Following a flood, water levels may rise and fall for several weeks. This will depend on drainage and rainfall. Do not attempt any repairs until you are confident the flooding period has ceased. Keep an eye on weather reports and call **Floodline 0845 988 1188** for the latest flood warnings.

Most people will need to appoint builders and other specialists to get repairs done. **Do not attempt work which is beyond your capabilities.**

Important!

Do not attempt the clean if any of the following apply:

- your home has suffered serious structural damage as a result of the flood.
- the building has large amounts of sediment piled against the outside walls or inside it – the forces placed on the building by this may have made your property unsafe.
- you are pregnant or not in good health.

Children should never be involved in the clean up operation

If you are Insured:

- Check the policy. Find out exactly what your insurance company will pay for. You may be entitled to assistance with temporary accommodation, drying apparatus and electricity and gas inspections.
- Take photographs or video footage of all damage, both to your property and your possessions.
- Mark the water levels on the walls for reference.
- Your insurance company may appoint a builder or you may be asked to obtain competitive quotes from several companies.
- Always ensure the insurance company has given approval before going ahead with repair work.

Safety Precautions

- Wear protective clothes, sturdy boots, waterproof gloves and face masks when handling debris.
- Floodwater may be contaminated by sewage, chemicals, or rat's urine (leading to Weil's disease). Keep your hands away from your face while cleaning and always wash your hands if you make direct contact with floodwater or silt.
- Wash all cuts and grazes and cover with a waterproof plaster. Get a tetanus jab if you are not already inoculated.
- Do not attempt to move heavy objects that may be unstable and could suddenly shift and trap or crush you. This includes fallen trees.

- Do not enter any deep standing water or water that is still fast flowing.
- Always move slowly and carefully. Standing water and mud can obscure holes (including uncovered manholes outside your property), undermined foundations and sharp objects such as broken glass. Sediment can also be slippery.
- Vermin, stray cats and dogs and other animals may take shelter in your home if they have been disturbed by the flood. Be cautious in approaching any animal. Contact you local council Pest Control Officer, Dog Warden or RSPCA as appropriate.

Mains Services

- If you have not already done so, turn off the electricity supply. Do not reconnect it until the system has been thoroughly examined by a qualified electrician. Check sockets, switches and appliances before use. Even if it is then considered safe to use electrical equipment in the cleaning process, make sure you use a circuit breaker for additional protection.
- Temporary electricity can be supplied by generators, available from hire shops. Ensure there is adequate ventilation as generators produce carbon monoxide. Let the engine cool before re-fuelling.
- Turn off the gas supply to appliances that have been flooded and get the system checked by a CORGI registered engineer before use.

Removing Mud

- Shovel out as much mud as possible and use a garden sprayer or hose to wash down.
- If there is mud on the inside and outside of your walls, remove in stages to ensure the loading remains even.

Cleaning and Disinfection

- Scrub surfaces with hot soapy water and a heavy duty detergent. Do not forget difficult to reach areas such as the gap underneath kitchen units. Rinse thoroughly.
- 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.
- All food preparation surfaces, equipment, containers, utensils, crockery and cutlery must be thoroughly cleaned and disinfected before use.
- Most germs need water to survive, so allow all cleansed and disinfected areas to thoroughly dry out.

Hazard!

If the property cannot be cleaned and dried within two to three days of the floodwater receding, moulds may form. Exposure to moulds may cause cold-like symptoms, watery eyes, sore throat, wheezing and dizziness.

If mould is present, people involved in the cleaning process should be protected with well-fitting respirators with toxic particle cartridges, available from DIY stores. Do not reoccupy your home if it has high levels of mould. Seek expert guidance.

Step One: Remove Standing Water

- The fire service can provide a pumping out service, for which a charge may be made. Alternatively, you can rent a pump from a hire shop or buy one from a DIY store. Get advice on how the pump operates.
- Drain water away in stages to avoid problems with water pressure on the structure of your property.
- Removing about a third of the volume of water daily is the recommended rate.
- Do not heat your home to more than 4°C until all standing water is removed.

Step Two: Dry the Property

- The best way to do this is using the central heating system - after gas, water and electricity supplies and appliances and their vents have been thoroughly checked and, if necessary, repaired by a qualified engineer.
- Set the thermostat to 22°C or above. If possible use industrial heaters, fans to help air circulation and dehumidifiers to aid the process.
- Good ventilation is essential as moisture must escape for the building to dry properly. Keep doors and windows open on dry days, and ajar during wet weather.
- It is difficult to estimate how long a property will take to dry out. Many factors affect the drying time including the duration of the flood and the fabric of the building. Lack of condensation may indicate that the drying process is complete or you may like to hire or buy a humidity meter which will indicate the moisture level in your home. In the case of acute flooding be prepared for the process to take months rather than weeks.

Security

- While it is important to ventilate your property, it must be locked and secured when unoccupied.
- Do not leave windows and exterior doors open when no one is present.
- If necessary cover open or broken windows with security mesh. Security advice is available from most DIY stores.

Waste Disposal

- Your normal refuse collection service will be able to take away a certain amount of waste, but many items will be too large to dispose of in this way.
- You will need a skip. Local authorities may sometimes provide these or give advice on where they can be obtained – contact the municipal waste section of your local authority or any helpline they have set up. Specialist waste management firms are an alternative.
- If you are making an insurance claim, do not dispose of any item until you are told to do so. If in doubt take photos of the effects of flooding on your property.

Electricity

- The electricity supply must remain switched off until your system has been checked by a qualified electrician.
- Junction boxes, socket outlets, light switches and ceiling roses may all need to be examined for trapped water or moisture, especially those beneath suspended ground floors.
- Modern wiring can withstand floods of short duration, but longer periods may affect the insulation of cables. In this case wiring will need to be replaced. Consider re-routing cables to drop down from above the socket outlets on the ground floor, or to raise socket outlets to at least 900mm above floor level.
- If your electricity supply is unavailable following a flood you may wish to consider hiring a generator. As these could be in short supply, consider sharing with neighbours and use only for essential needs.
- Any electrical appliances exposed to floodwater should be checked by a qualified person before use.

Gas

- Water and mud may enter gas systems during a flood. Even if appliances appear to be working normally, the flue or ventilation systems may be affected. For safety reasons it is most important to have appliances inspected by a CORGI registered engineer.
- If you live in rented property, Local Authority Housing or Housing Association property, contact your landlord as soon as possible.
- If you smell gas in your home call TRANSCO immediately on 0800 111 999.

Water

- Mains supply water services should not be affected by flooding. However, run taps for a short time (a bowl-full) to ensure that silt has not entered the system. If you suspect that the mains supply water is contaminated, contact your local water company and boil tap water for at least 20 minutes before use.
- Within the home, check pipework to ensure it has not been damaged and allowed contaminated water to enter the system. You should also check any insulation on the pipes and replace as necessary.
- Water supplies not on the mains system, such as wells and cisterns, 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 become blocked and 'back-up'. Check this by flushing toilets and running taps. Report any blockages to your local water company wastewater provider. If sewer repairs need to be carried out, consider fitting anti-backflow devices to reduce the likelihood of blockages in the future.
- If you have a private sewage system, take particular care to ensure there is no damage that can create a health hazard. Saturated soils may interfere with its proper function. Do not use until water in the disposal field is lower than the water level around the property. Service damaged septic tanks, cesspools, pits and small package sewage systems and have them inspected as soon as possible by a professional. Signs of damage include 'settling' or inability to accept water. Tanks, pump chambers and the disposal field may also become filled with silt and debris following a flood.
- If flooding is likely to recur, ensure that septic tanks are kept full. Should they be empty during a severe flood, they may lift out of the ground and float away.

Choosing a Builder

- Get several quotes from firms recommended by neighbours, friends, your local authority, insurance company or loss adjuster.
- Ask for references or confirmation of membership of trade bodies (such as the Federation of Master Builders).
- Beware of builders touting door-to-door. They may not be appropriately trained or qualified and only keen to exploit your vulnerability.
- NEVER pay cash in advance.
- Get signed receipts for all work done.

Brickwork

- Having dried out the interior of the property (see Drying Out), the brickwork will still contain moisture from the flood. The best way to dry it out is through natural evaporation. This is a slow process that can take months. To help this process make sure that all air bricks and other vents are open to allow air to circulate properly.
- There may be damage to the brickwork. Bricks can shrink or crack as they dry, particularly if there is a hard frost during the drying process.
- Keep a note of any damage to the bricks during the drying period. After this time cracks can be filled and brickwork re-pointed. Similarly, do not re-paint brickwork until it is completely dry.
- During the drying stage you may observe a white salt growth on the bricks. This will stop when the wall is fully dried and should then be removed with a bristle broom.

- If brickwork fails to dry, samples of the masonry should be tested to see if there is a problem with rising damp. If so, specialist help will be required.

Air Bricks

- Covers on air bricks should be removed once the flood water has receded to increase ventilation to the wall cavity and allow any trapped water to dissipate effectively.

Brick Fireplaces

- Do not light fires for at least two weeks after the flooding. Initially only make very small fires, steadily increasing their size until you are sure that the firebricks have dried out completely. Steam will be generated by the moisture in the bricks – too much steam can cause additional damage to the chimney.

Flooring

- Remove floor covering such as carpet, vinyl or tiles. Insulation materials that have become wet should also be removed, disposed of and replaced.

Chipboard Floors

- Chipboard floors will be seriously damaged by floodwater and should be removed and replaced. Where this is not possible, for example where the boards pass under partitions, struts (usually wooden) should be used to strengthen them.
- The spaces beneath concrete floors should naturally drain and dry out through existing air bricks and drain holes (the floor itself is not likely to be affected). Occasionally additional ventilation may be needed – if you think this is the case seek advice from a professional builder or surveyor.

- 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 this last method without professional advice.

Floor Joists

- If they show signs of rot, replace floor joists and treat the surrounding area to prevent spread. Prevent distortion or twisting joists by reinforcing with struts or battens.
- Floors that do not return to their original level or that crack are called 'heaved'. In this case the floor may have to be removed and a new one constructed. If a floor has badly cracked but has returned to its original level, a new floor may be placed over the old one. If this is the case a 'vapour barrier' should be added between the two floors. The new floor should be at least two inches thick.
- The best way to tell when flooring is dry is by using a meter giving a percentage humidity reading. Between October and May the reading should be under 24%, and under 22% during the summer period.

Glass and Windows

- After a flood clean all windows, oil locks and hinges to prevent corrosion.
- Single glazing is likely to be unaffected by flooding unless the window pane is broken. However, check the condition of putty, window locks etc, to ensure the windows are secure.

- Double-glazed units should be inspected to ensure that floodwater has not eroded the edge seal. Check for mud and water stored in hollow window and door frames. If contamination is present, drill drain holes at the top and bottom of the frame. If there is condensation between the panes, the double-glazed unit will need to be replaced.

- Sash windows may distort and swell following a flood. Do not force them open as this may cause further damage. The swelling will reduce during the drying process and they may return to full function. If not, when the wood is totally dry, the fit may be tested and the sash planed as necessary to make it fit.

- If the window must be opened to assist in drying the property, remove the beading and the opening sash. To provide security when the building is unoccupied, temporary beading can be screwed into position.

Insulation

- Insulation that has become wet must be removed and replaced as it loses its effectiveness and inhibits the drying process.
- Fibreglass insulation is an irritant. If removing, wear protective clothing (eg gloves, goggles and face-mask).
- Seek expert advice if you believe that wall cavity insulation has been damaged by flooding. It may need to be replaced by specialist contractors.

Interior Decoration

- Low permeability wall coverings like vinyl wallpapers, gloss paint and tiling will hamper the drying process. Timber stud partitions may also rot. Remove these wall coverings from at least one side of all affected internal walls to help speed up the drying process.
- Do not redecorate for at least three months after the walls have dried and any repairs (eg re-plastering) have been done. Painting or wall-papering too soon can result in mould, blistering 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.

Kitchens

- Remove plinths from floor-mounted cupboards and kitchen units and dry out. Remember to clean and disinfect the area behind and underneath the cupboards.
- Kitchen units are frequently made of laminated chipboard and will be severely damaged by flooding. It may expand or distort and lose its strength, can be impossible to disinfect properly and will need to be disposed of. Consider replacing with units made from solid wood or plastic, both of which are more flood resistant. Your insurance company is most likely to replace damaged kitchen furniture with equivalent new articles. If there is a risk that flooding may recur, it is advisable to speak to your insurer about investing in solid wood or plastic kitchens as they are far more resilient to flooding.

Plaster and Dry Linings

- Unless the flood lasted only a few minutes, gypsum-based plasters will absorb large quantities of water and will distort. Damaged plasterwork will need to be replaced, but wait until you are sure that crack movement and salt deposition (formation of salt crystals on the surface) have ceased.
- Consider re-plastering with a material more resilient to flood damage – tanking may be better than plastering.
- Where there are plasterboard dry linings or insulated plasterboard fixed to the wall with plaster adhesive, first remove the skirting boards. Then cut or drill holes through the plaster-board or dry linings to drain trapped water and aid ventilation. Replacement of plasterboards or dry linings will be necessary up to at least the high water mark as it is likely to have de-bonded (partially separated out into layers). Consider replacing with wooden dry lining which can be dried and re-used. Timber studs will also need to be dried out and replaced.
- Any plaster that is entirely dry (generally light pink in colour) can be redecorated if it is in good condition and has been thoroughly cleaned.

Structural Damage

- Make regular checks on your property following a flood, as sometimes it takes a while for structural damage to become apparent.

Tell-tale signs:

- changes in the line or appearance of the 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 may indicate that walls or footings have 'settled'.
- bulging or dislodged sections of the property.
- deep scouring which has led to exposed foundations.
- any new cracks bigger than 5mm above doors or windows.

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

Walls

Traditional brick or concrete block walls will generally dry out well. Ensure air bricks are clear for ventilation and hose down and scrub external walls. Wash and disinfect all contaminated internal walls and remove all loose coverings such as wallpaper and tiles.

As the walls dry, you may notice a growth of salt crystals (efflorescence) forming. This can easily be removed with a bristle brush. It should only be necessary to get expert advice if you believe the salt content of the walls are causing a problem (for example from lengthy sea water flooding).

To speed the drying process, consult a professional builder about locating vents at about one metre intervals all round 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 will hamper the drying process.

If walls have substantial sediment or debris piled against them (more than 30cm) this will exert a force upon the wall (a loading). This should be removed in careful stages. If loading has occurred on the inside and outside of a wall, seek to maintain levels evenly as you remove them.

It is important to remove or drain residual floodwater, mud or debris remaining in external or internal wall cavities. Either have the cavities inspected by a specialist with an optical probe, or carefully remove bricks so that you can assess the internal conditions. If wall ties are corroded it is advisable to get an expert to replace them.

Wood

- If wood can be dried within a few weeks decay is unlikely.
- Wood framed walls need to be fully exposed unless the flooding only lasted a few hours, reached a depth of 150mm or less, and the moisture content of the wood (checked by a specialist) is less than 20%. To expose wood framed walls, any plasterboard, vapour control membranes and insulation should be removed up to the highest level of the floodwater.
- Wooden window frames may swell and jam when wet and this distortion may cause paint to flake. Get an expert to check the moisture content of the wood and advise if 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 under the floor. 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 types of doors so they should always be replaced.

Further Information

For more information obtain a copy of the booklet 'Damage Limitation – How to Make Your Home Flood Resistant', available from **Floodline 0845 988 1188**. The section 'DIY? Then Do It Now!' has suggestions for improving the flood resistance of your home which are best undertaken when substantial repairs are in progress.

The Environment Agency

Keep up to date on weather forecasts and any new flood warnings issued by the Environment Agency through television, radio and by calling **Floodline 0845 988 1188**. Flooding may return a few days or even weeks after an initial flood.

Fire & Rescue Service

The primary duty of the fire service is to save life. They may assist in pumping out properties after a flood, but often a charge is made for this service. Only dial 999 in an emergency.

Insurance Company

It is usual for companies to operate a 24 hour telephone helpline which you should call as soon as possible following a flood. In most cases they will appoint a loss adjuster to act as their agent in handling a claim. As well as assessing and paying for repair work to your home, they can help with emergency accommodation if necessary.

Remember:

- Do not undertake any repair work without consulting your insurance company first.
- Taking photographs of all parts of your home damaged by flood will be help in settling claims.
- Make sure you give the insurance company details of any temporary address and contact numbers.

If you have a complaint about the way your claim is being handled by your insurance company and/or loss adjuster you should, in the first instance, telephone or write to your insurer keeping a note of what you have said. If the problem is not resolved to your satisfaction you can contact the Insurance Ombudsman who will investigate the complaint within their terms of reference.

English Heritage

If you own a listed property, your local English Heritage office may be able to advise on the repair and restoration methods appropriate to your building.

Landlords

If your home is rented you should contact the landlord or their agent as soon as possible. Your contract should specify who is responsible for repairs or re-accommodation. If unsure, your local Citizens Advice Bureau may be able to help.

Local Authority

Your local authority will have emergency telephone helplines and can provide advice on matters such as emergency accommodation.

Police

They will provide advice on securing your property following flood damage. If you have to leave your home following a flood it is a good idea to notify your local police station.

The Environment Agency and CIRIA

The Environment Agency is responsible for warning the public about flooding from rivers and the sea in England and Wales. We also build and maintain flood defences in low-lying areas to reduce the risk to homes and businesses. Other responsibilities include pollution prevention, water resource management and waste regulation.

Our National Flood Warning Centre provides a focus for best practice in flood forecasting, warning and public advice and operates the 24-hour flood information service.

Floodline 0845 988 1188

More copies of this guide and a companion booklet 'Damage Limitation - How to Make Your Home Flood Resistant' are available free from Floodline.

National Flood Warning Centre,
Environment Agency, Swift House,
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Floodline 0845 988 1188

Email: nfwc@environment-agency.gov.uk
Website: www.environment-agency.gov.uk/flood



Notes

For 40 years CIRIA - the Construction Industry Research and Information Association - has managed collaborative research and produced information aimed at providing best practice solutions to industry problems.

CIRIA stimulates the exchange of experience across industry and its clients. It has a reputation for practical, high quality information. Through networking and the dissemination of publications and newsletters, CIRIA seeks to improve the performance of all concerned with construction and the environment.

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<http://www.ciria.org.uk/flooding>

The ABI (Association of British Insurers) and BRE (Building Research Establishment) also supported research into flood resistant techniques contained in this guide.



