

Repairing Flood Damaged Buildings

Introduction

Red Cross has a long history in helping people before, during and after an emergency. The Red Cross Emergency REDiPlan Project aims to provide people with quality advisory information to help them recover from an emergency.

This information sheet is one of a range of products provided in good faith to assist people recover from floods. If you **do not feel confident** in undertaking these tasks you should always seek the advice of professional services.

Before undertaking these tasks you should always contact your insurer.

Warning

The hints given assume there is no structural building damage such as leaning walls or foundation damage. If there are any signs that the house has moved on its foundations—buckled floors, new cracks in walls, out of shape door frames—consult a qualified structural engineer or building consultant.

Clearing Out

Because floodwater is often polluted with sewage and other contaminants;

- throw out any food that has come in contact with floodwater,
- keep children away during the cleaning up,
- use disinfectant when cleaning and always wash your hands before eating, drinking or smoking,
- disinfect cuts quickly and cover with a waterproof dressing,
- bury all accumulations of faecal matter quickly.

Everything that is wet and that can be moved, floor coverings, furnishings, bedding, clothing etc, should be taken outside for cleaning and drying whenever the weather permits. Leave nothing that can trap moisture and prevent the structure from drying.

The easiest way to lift vinyl tiles is to gently lever them up with a garden spade. If there is particleboard underneath take extra care. A spade can damage this flooring material. To remove a sheet of vinyl, lift a corner, and slowly and carefully pull up the rest.

Remember not all damage can be seen. Take the utmost care. Hidden damage can endanger health and safety. If the house is badly damaged



and looks unsafe, occupants should stay out until a building inspector or engineer has checked it.

The Floor

Particleboard is likely to lose some strength when saturated and redried. Any parts carrying load should be carefully checked, particularly if they show any sign of swelling, before they are reused. Drying out can be helped by:

- sanding off any varnish or sealer,
- making sure there is good ventilation.

Once the board is sanded, clean it with a fungicide and allow to dry. The sanding should be done as soon as possible. If the floor is made of tongue and groove timber, scrub and allow to dry. Again, sanding off any varnish and having good ventilation will help drying.

Concrete floors are easily washed and swept clean and the surface soon dries. However the interior of concrete dries very slowly so it may be some time before floor coverings can be replaced. The following simple test will give a general indication of how dry a concrete floor is. Tape all four edges of a square metre of clear polythene sheeting (ie plastic sheeting or gladwrap) to the floor in an area away from direct sunlight. Cover with a blanket and leave for 24 hours. If condensation forms on the underside of the polythene, the floor is too damp for laying vinyl or carpet with rubber underlay or backing. Lift the polythene and lay another piece in a few days. (Don't leave the same piece of polythene taped to the floor). Wait until the polythene stays dry for two or three consecutive days.

Floor Coverings

Carpets are of complex construction. They are not designed to survive floods and advice applicable to every situation is not possible. There are two major problems:

(a) relaxation shrinkage occurs when the carpet is wet and then dried without constraint and,

(b) degradation of the jute and cotton of carpet backing occurs when the carpet is left damp and exposed to the atmosphere. In the absence of specific manufacturer's instructions, the following procedures are recommended and should be done as soon as possible:

- take up the carpet and hose it down if it is muddy
- dry it as quickly as possible to minimise degradation of the jute and cotton backing. If the house has warm air heating it may be beneficial to hang the carpet inside
- while the carpet is drying try to retain its original dimensions by careful stretching and tensioning,
- after it has dried an assessment should be made of its condition, noting such points as:
 - shrinkage and distortion



- degradation of backing materials and adhesives
- degradation of the pile fibre (synthetic piles should be unaffected but wool may show some degradation if left damp for some weeks) and
- colour, pattern and texture retention.

Extractives from the jute backing may stain the pile fibre but this is readily removable for all fibres except wool. In certain carpets the yarn used for the wool may have been set for special effects and this set may have been lost.

- if the carpet is considered suitable for reuse it should be professionally cleaned, original carpet sizes should be supplied to the cleaners and fungicide treatment specified,
- on re-laying, the carpet should stretch to its original area but if it is of an intricate shape it may not fit perfectly.

In the case of carpet underlays the procedures depend on the type of underlay:

- Hairfelts—if saturated with water these will generally be ruined. On lifting they will often break up and, after drying, will have become compressed and useless as underlay.
- Synthetic foams and rubbers—these may be salvageable. They should be hung up, hosed to remove trapped and solid matter and dried. An assessment can then be made of their condition and, if suitable for reuse, a fungicide treatment would be desirable.

If you need to remove vinyl tiles or sheets they will probably need replacing with new material. Ceramic tiles can be left in place provided they do not crack as the floor or substrate dries out. Do not attempt to re-enter the house if there is any chance of walls or roof collapse and only after gas, electricity, water and sewerage services have been checked by the relevant authorities.

Draining, Cleaning, Drying and Repairs

Once all the wet contents of the house are outside, cleaning up and drying out can begin. To assist drying, linings may have to be cut out. What is taken out can be put back later on. It will take several weeks, longer in winter, to completely dry out the house. On dry days, keep all doors and windows open. On wet days, leave windows ajar—the inside of the house will only dry if moisture can get out. Turn on heaters in as many rooms as possible, leaving the windows open. Don't use more heaters than necessary. Some heat will help drive off the moisture, but too much may warp and crack wood.

Look for trapped mud in less obvious places— under shower trays, benches, baths and bottom shelves. Remove the skirting or plinth covering these spaces and hose or pump out the mud. Wetting for a short period does not cause permanent damage to many building materials but they



should be dried out as soon as possible. Check for hidden pockets of water and think of ways to facilitate the drying. In most cases, especially with masonry materials e.g. bricks and concrete blocks, drying can take a very long time, possibly months.

Any mould that grows on wet linings and timber should be ignored until drying is complete. It can then be removed with household bleach, using several applications if necessary. Remember, however, that bleach can affect the colour of some materials.

Do not light fires in brick fireplaces for at least two weeks and then use only small fires until the firebricks have dried out.

Under the Floor

Drain away any water lying under the house. It may be necessary to dig a pit and pump out the water that collects. Where there is no access, cut a trapdoor in the floor. Getting rid of excess water under wood or particleboard floors is especially important in avoiding decay.

To increase the airflow under the house and assist drying:

- knock out the ventilators in the foundations,
- cut back or dig out plants which are obstructing any vents,
- leave any access doors open,
- remove part of the foundation enclosure, such as baseboards or sheet materials, where fixed to the outside of the stumps.

The Walls

Clean mud and dirt off brickwork and concrete blocks with water, detergent and a stiff nylon or bristle brush. Using acid instead of detergent may cause staining. A white salt growth (efflorescence) is likely to appear on bricks or concrete blocks during drying out. This is not serious and should stop

when the wall is fully dried. It can often be removed with a bristle broom.

Repainting and other repairs to cracked **brickwork or concrete masonry** are best left until the foundation soil has dried out and foundation movements have ceased. Some cracks may actually close up as the foundation soil dries out. Minor cracks are not serious in brick veneer structures as there is usually a large margin of structural safety.

Timber weatherboards should be cleaned with water, detergent and a cloth or soft bristle brush. Make sure all the detergent is rinsed off. If the flood level was higher than the floor, water can be trapped in the external wall cavity. Drain the cavity by wedging out the bottom two or three weatherboards, or by removing a bottom row brick or veneer block every metre. In both cases this should be done around the entire house. Hose out any mud or silt in the cavity and let it dry out. (Householders should



note that this method of cleaning and repairing veneer cavity is usually best tackled by a tradesperson). It may, in fact, be easier to clean the cavity from inside the house. Take out the skirting board and wall linings and remove the insulation material. If that sounds a lot of work remember that everything is probably wet and needs replacing anyway.

Plaster sheet is very weak when wet but may recover its strength when dry. If it is not obviously damaged, get any load off it and let it dry—it will probably be all right, particularly if it is reinforced with glass fibre.

Bulk insulation can act like a sponge, soaking up water to the full height of the walls. The inside wall linings on the outside walls may therefore have to be completely removed. Apart from losing most of its insulation value, wet insulating material may hold moisture for months, causing dampness and mould to appear after redecorating has finished. If water entered the roof take out the wet ceiling insulating material as soon as possible. The extra weight of wet insulation may damage the ceiling. **Cellulose fibre insulation** (a loose fill material made from newspaper pulp) should be discarded and replaced with new insulation as water reduces its resistance to fire spread.

Water can also be trapped in the internal wall cavities, behind the wall lining. Remove the skirting boards and cut out all damaged or wet linings up to the first horizontal piece of timber above the water mark. Hose out any mud or silt and leave the cavity open so it can dry. Remember that with timber frames there may be noggings in the frame half-way up which could hold the mud.

The local building inspector may wish to have a look at the wall timber and may ask for a few sheets of lining (the full height of the studs) to be removed.

Don't repaint walls too soon and drying will be quicker if furniture and pictures are kept away from them. It may be necessary to remove vinyl wall coverings to help the drying process.

Doors

Hollow doors will probably be ruined and so could be removed to help drying. **Solid wooden doors** need to be dried slowly and evenly. Don't be tempted to hurry the drying by placing a heater close to or facing a door. Don't rush into repairing things until the timber has had a chance to dry. A door may have swollen and jammed while it is still wet. Don't trim it off while wet. Wait until it is dry—it will probably fit again then. It may help to take off the architraves to help drying. Oil all locks and hinges immediately to prevent rust.



Redecorating

Redecorating should be left for at least another three months after repairs have been finished. Painting or papering too soon may result in mould, blistering and peeling. Laying vinyl too soon may trap moisture. The one exception to this is carpet. Provided there is no rubber underlay or backing, carpet allows moisture from the floor to evaporate so it can be laid earlier.

The main message is **don't rush**. Drying out will always take a long time but when complete most troubles remaining will be decorative and easily repairable.

Summary

It may take **months rather than weeks** to get a house back into the condition it was in before the flood. But it is important to start work as soon as the rain has stopped and the water receded. The tasks, which need to be done as soon as possible, are:

- clear up, drain and start drying out the house as soon as the flood waters recede,
- take out everything this is wet and that can be moved—floor coverings, bedding, furniture and clothing,
 - on dry days, keep all doors and windows open. On wet days leave windows ajar,
 - drain away water under the house and try to increase the airflow there to assist drying,
 - check for trapped water and mud in wall cavities, as well as under such things as shower trays, baths, benches and bottom shelves.

Most of the cleaning up and drying out can be done by any able bodied person, while a competent home handyman could easily cope with most of the repairs and redecorating. Some jobs, however, must be done by a tradesman or other qualified person and should never be attempted by the home owner. The final two tasks must only be done after the structure of the house has dried completely:

- replace wall linings, floor coverings etc only after the structural timber is dry. Drying could take months.
- leave redecorating for at least three months after finishing the repairs. Paint and paper too soon and you risk mould, blistering and peeling.

A final reminder

Remember, recovery is a long and sometimes tiring process.

So you should make sure that you look after yourself. For further advice on looking after yourself, see our booklet ***Coping with a major personal crisis***



Further Information
www.redcross.org.au

Information Sheet

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