

# Repairs and maintenance

Repairs and maintenance extend the life of your home, improve its livability and reduce health risks. With advice from a builder or designer, develop a repair and maintenance schedule that prioritises urgent problems. Focus on the parts of the home you plan to retain.

For guidance about larger home improvements, see *Planning home improvements and Renovations and additions*.

## Hazardous materials identification and risk management

Be cautious before disturbing existing materials.

- Many pre-1982 buildings have some asbestos including linings of eaves, roofing, wall linings and cladding.
- Most pre-1970 buildings have lead paint.
- Other harmful substances can include PCBs (polychlorinated biphenyls) from old fluorescent light fittings, loose glass fibres or old asbestos pipe and duct insulation.

*Seek expert advice on hazardous material removal or sealing.*

Removal is not necessarily the best option – sometimes it is better to seal and enclose. Seek expert advice. Use specialists who can remove hazardous materials in accordance with approved methods and regulations (e.g. National Codes of Practice, Safe Work Australia, WorkCover NSW and Tasmania, WorkSafe Victoria, WA, SA, NT and Queensland)

## Termites

### Termite risk factors

- Inadequate subfloor clearances and slab-on-ground
- Insufficient subfloor ventilation and light
- Abutment with susceptible construction or soil (e.g. slabs, verandas, patios, steps)
- Inadequate site drainage, leaking water services
- Presence of subfloor attractants (e.g. tree roots, buried timber, damp areas)
- Cracks and fissures in slabs
- Service connections



Photo: Kathie Stove

Termite damaged timber.

### Termite protection

Remove and repair or replace any termite-damaged timber and ensure that the pests are no longer active or able to access the building. Identify the access point for any previous damage and repair or install barriers.

*Physical barriers, adequate clearance and yearly inspections are the best protection against termites.*

Implement all the preventive steps recommended in your termite report including:

- checking all ant caps and barriers
- restoring at least 400mm clearance under subfloor timber structures and making sure there is good ventilation and drainage
- clearing garden beds and mulch build-up from walls and exposing at least 100mm of slab edges where possible.

Check for and fit adequate termite protection (if you're repairing or renovating, do it while the existing structure is exposed) with:

- continuous termite shield to cavities
- ant-capping to piers and bearers
- shields to service penetrations.

# Before you begin

## Repairs and maintenance

Retrofitting using physical barriers is the preferred method. They are simplest for homes with raised timber floors and isolated piers, and more complex for perimeter masonry foundations or slab-on-ground. Retrofit barriers to protect wall cavities, such as mesh or graded stone, and termite-proof service penetrations using physical barriers.

Environmentally benign chemical barriers are the least preferred but may be necessary in some situations. Use chemicals with minimum toxicity. Chemicals that require regular reapplication are usually the safest option. Ensure that they are reapplied according to the recommended schedule. Retrofit a reticulated system in cavities for chemical protection.

Schedule and pre-book an annual termite inspection by a reputable, licensed inspector.

## Leaks

Leaks can quickly lead to significant damage.

**Floor leaks** can commonly be traced to leaking pipes or to moisture under concrete slabs being forced up through cracks and fissures by hydrostatic pressure. They can be rectified by repairing or replacing drainage (plumber required) or installing adequate, up-slope groundwater drainage or diversion (professional advice recommended).

**Cavity wall leaks** often result from failed cavity capping or flashings and blocked weepholes along the base of the wall or over windows and door openings. Replace flashings (plumber and bricklayer), clear weepholes, and remove/replace bricks where necessary to get rid of debris and mortar droppings (DIY or bricklayer).

**Roof leaks** are often best detected when it's raining because water can travel a long way from the source to the wet spot. Replace loose roof fixings and seal holes with silicone or bitumen backed tape and a heat gun.

**Shower recesses** may be a source of leaking if waterproofing is inadequate or has been damaged. Check and repair if necessary.

**Check water supply and drainage pipes** for signs of rust and/or leakage. Repair or replace as necessary and, while you are there, insulate exposed hot water pipes.

## Cracks and settlement

Cracks and settlement can be cosmetic or an indication of more serious structural problems. Common causes are: 'heave' of reactive (clayey) soils, slip by unstable or disturbed soils, settlement under poorly prepared footings, variable soil moisture content causing uneven foundation swelling or heave due to drying by tree roots, or poor drainage.

Seek professional advice from an engineer before repairing. Sometimes repairs can act as wedges and increase structural damage when foundations swell in the next wet or dry season.



Photo: Kathie Steve

Reactive clay soils cause cracking in some areas.

Rectification can involve underpinning of footings to provide better support or piercing to ensure that each section of the building is supported by material with similar bearing value (i.e. it all moves by the same amount). Sometimes, underfloor drainage is required to ensure that internal walls bear on material with similar moisture content to the sun and wind-exposed external walls, to create even heave. Control joints that accommodate movement while remaining sealed may be required if even heave is not achievable.

## Dampness problems

**Rot and mould** are health risks to both the home and its occupants. If left unattended they can cause rapid structural failure and serious health problems. They are generally caused by poor subfloor ventilation or ground clearance, excess moisture (leaking flashings, pipes or plumbing) or condensation build-up. Check subfloor and cavity wall vents to make sure they are not obstructed by previous additions, garden beds, mulch build-up or insect nests. Install additional vents as required. Repair leaking pipes and divert stormwater.

**Condensation** causes mould, mildew and rot, and can damage windows, walls and ceilings. It is both a symptom and cause of poor indoor air quality and is commonly due to poor ventilation of bathroom and kitchen areas or use of inappropriate unflued heaters. Correct by improving ventilation levels and installing externally vented exhaust fans and appropriate heating.

**Rising damp** is an unsightly cause of poor indoor air quality through rot and mould. It arises in the absence or breakdown of damp-proof courses in masonry and if left untreated will rot timbers that are in contact with the masonry and cause structural failures. Leaking shower recesses are a common problem in homes built from the mid-1970s on, commonly because of movement in timber structures and failure of waterproofing membranes. Rising damp can be permanently removed by a specialist company, and DIY kits are also available, preferably for use at the outset of renovations.

## Salt attack

**Salt** in brickwork is caused by high soil salinity levels and/or rising watertables. It usually occurs below the damp-proof course and can completely destroy brickwork, causing collapse if left untreated. In extreme cases, it can also rust poorly placed or protected reinforcing steel in footings and slabs. Seek professional advice on its cause and solutions.

## General maintenance tips

*Develop and follow a maintenance schedule.*

- Check external painting and touch up as required.
- Check subfloor areas for dampness. Divert groundwater and provide mechanical subfloor ventilation where existing ventilation is inadequate.
- Check and replace corroded sacrificial anodes in hot water tanks, and check the pressure release valve for operation and leaks.
- Insulate any exposed hot water pipes to prevent heat loss. (see *Hot water service*)
- Check for air leaks. Fit dampers to chimney flues (or insulate if unused), seal around windows and doors, and fill cracks and gaps to reduce draughts. (see *Sealing your home*)
- Protect and restore old windows and joinery.
- Repair or seal broken glass or windows with air leaks to reduce draughts and heat loss. Repair windows that are jammed or 'painted closed' and make them operable to improve cross ventilation. A variety of sealing strips, tapes and seals are available from hardware outlets. (see *Sealing your home*)
- Install, repair or replace insect screens to encourage natural cooling and 'night purging' in hot weather.

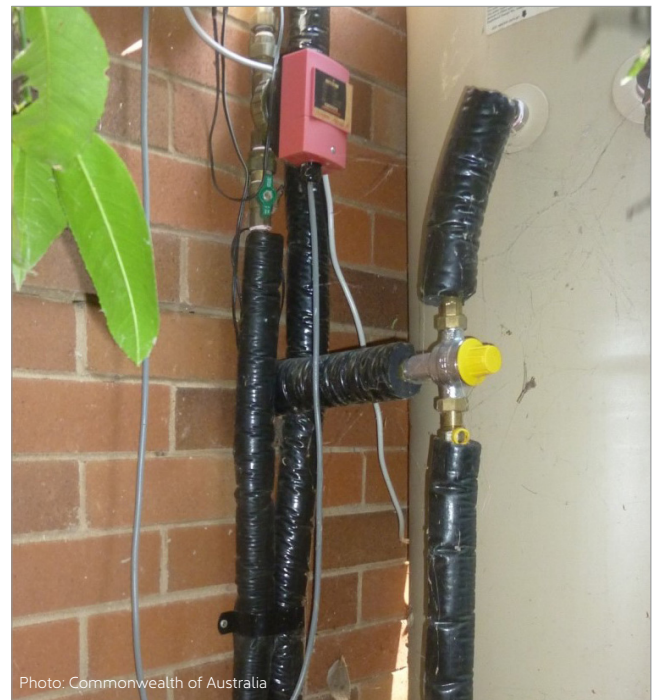


Photo: Commonwealth of Australia

Insulate all exposed pipes.



# Before you begin

## Repairs and maintenance

- Replace doors that have been removed so that you can zone areas to control heat flow. (see *Heating and cooling*)
- Replace insulation that has been moved or damaged in ceilings and fill insulation gaps. Older insulation often settles or slumps and loses its insulating properties. Check the depth and 'loft' and replace as necessary. (see *Insulation*)
- Replace halogen downlights with low energy options (e.g. LED) that emit less heat so they can be covered safely with insulation or fit commercially available heat-proof enclosures to seal light openings and allow continuous insulation. (see *Lighting*)
- Check refrigerator door seals and replace if necessary. If your fridge is not energy efficient, now might be the time to upgrade to one with a high star rating. (see *Appliances*)
- Install smoke detectors and/or check the batteries in them.
- Have your heating/cooling systems checked/maintained. (see *Heating and cooling*)
- Remove worn carpets. They are a source of dust mites and allergens and may be concealing a timber floor or a concrete slab that can be polished to expose thermal mass. (see the appendix *The healthy home*)
- Paint and repair walls and ceilings with low VOC (volatile organic compound) paints to improve amenity and air quality.
- Replace cracked roof tiles and if necessary repair roof ridding.
- Clean gutters regularly and check for leaks. Ensure adequate fall to outlet.
- Trim trees and shrubs away from the house.

### References and additional reading

Australian Building Codes Board (ABCB). 2011. Condensation in buildings: handbook. [www.abcb.gov.au](http://www.abcb.gov.au)

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### Author

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