



# Home insulation

***Insulation reduces the amount of hot or cold air lost through your home's walls, floor or ceiling. It reduces the need for heating and cooling appliances and is a safe way to improve energy efficiency by cutting your costs and greenhouse gas emissions. Fitted correctly, home insulation should pay for itself in around five or six years. If installed incorrectly, insulation can be dangerous – leading to house fires or risk of electric shock.***

## Getting the job done

### Choosing a contractor

When booking a contractor to do any work at your home, including installing insulation, we recommend doing the following research:

- Get several written quotes for the total cost to compare value.
- Make sure a reputable contractor will carry out the work (see below).\*
- Check any terms and conditions.
- Ensure what was offered verbally is included in the written quote.
- Ensure there is a clear start and completion date in the contract.
- If you need to pay a deposit, it should generally be no more than 10 per cent of the total price.
- Make sure you get a receipt for any deposit paid.

To minimise insulation fire risk, it is important that you use an installer that will:

- meet Australian Standards for installing insulation (see Australian Standards);
- comply with the specified R-value for climate zones and council regulations (see R-values); and
- inspect all downlights, transformers and electrical wiring to ensure they are clear of insulation and other materials.

\* For electrical work, always use a licensed electrical contractor. To find out if a contractor is licensed, contact Building and Energy on 1300 489 099 or search online at:

[www.dmirs.wa.gov.au/building-and-energy](http://www.dmirs.wa.gov.au/building-and-energy)

### DIY installation

If you choose to install insulation yourself, follow these important steps:

- Make sure all power is switched off using the main switch at the main switchboard prior to commencing work.
- Have electrical wiring inspected by a licensed electrical contractor to ensure it can be safely covered by insulation.
- In an older home, consider the total weight of the insulation to be installed. Existing plasterboard, plasterboard fixings or building framing may not be able to take the added load. Always check the product disclosure statement on the insulation and if in doubt, speak to the manufacturer.
- Allow the prescribed clearances around any hot flues, exhaust fans, downlights, appliances and fittings. Reflective foil insulation must be kept well clear of electrical wiring and fittings and must not be secured using metal staples. Refer to the Australian/New Zealand Wiring Rules (AS/NZS 3000:2018) for more detailed information on these clearances.
- When installing loose fibre insulation (glasswool, mineral wool or cellulose fibre), wear protective clothing, including gloves and a face mask. The loose fibre insulation materials can cause short-term irritation to the skin, eyes and upper respiratory tract. When installing reflective insulation, wear adequate eye protection, as reflective insulation can cause dangerous glare. Regardless of the insulation type, always wear protective equipment when working in roof spaces.

### Australian Standards

Australian Standards and national codes of practice cover the installation of insulation products and electrical equipment. Ensure that you discuss these with your contractor. See [www.standards.org.au](http://www.standards.org.au)

## Insulation types

### Bulk

This is a common insulation type that comes in the form of blankets, batts, loose fill or boards.

Blankets are long rolls of insulation cut to fill a space. They come with a moisture barrier, foil or plain paper backing. Batts are pre-cut lengths of insulation that come with or without a backing. Blankets or batts are usually made from:

- fibreglass mineral wool or rockwool;
- synthetic fibre; or
- sheep's wool.

Loose fill insulation does not contain a backing and is pumped into the roof space. This is one of the fastest and easiest forms of insulation to install and is able to fill areas that may be more difficult with blankets or batts. It is made from:

- glasswool;
- mineral wool; or
- cellulose fibre.

Rigid insulation is another form of bulk insulation used in new home construction. It comes in pre-cut boards and is used for raked or cathedral ceilings and under wooden flooring.

### Reflective

This type of insulation is used in warmer climates. Reflective insulation is a metallic foil material (aluminium) which creates a barrier to reflect radiant heat, reducing the amount that enters the home. To also keep the heat in during cooler weather, it is bonded with batts or plasterboard to insulate in both directions.

Reflective foil insulation is available in:

- single – layered form; or
- multi-layered form with an air pocket between layers for extra insulation.

### 'R-values'

Insulation R-value is a measure of how resistant it is to heat transfer. A high R-value means a high level of insulation. When buying insulation, always check the R-value on the packaging.

For recommended insulation R-values in your area, visit [www.yourhome.gov.au](http://www.yourhome.gov.au)

If being installed as part of a new building or new building work, insulation must comply with the Building Code of Australia (BCA). Talk to your builder or local shire to find out more.

## Reducing fire risk

All insulation products sold should be independently tested for flammability prior to being sold (Australian Safety Standard as1530.1). Flammability is rated on a scale of zero to 20 – the lower the number, the smaller the fire risk.

Research indicates that the material posing the highest risk of fire is cellulose loose fibre insulation. The existence of previous insulation also increases fire risk.

According to the Department of Fire and Emergency Services (DFES), incorrect fitting of insulation increases fire risk.

Convection roof currents can shift loose fibre insulation, causing it to come in contact with exposed hot light assemblies. Contractors in the roof space should be careful not to accidentally displace insulation during their work.

You may be at greater risk of fire and should inform your installer before they commence work if you have the following items in your roof:

- dichroic or halogen downlights;
- electrical wiring installed before 1999;
- gas or combustion heater with a flue going through the roof;
- high intensity heating lamps; or
- electrical items, such as exhaust fans, water heaters and transformers.

## Downlights

### Rethink downlights

Recessed lighting can cause building fires.

Halogen (dichroic) downlights operate at very high temperatures, some up to more than 300°C. If too close to combustible material such as loose insulation or timber members, ignition can occur.

The transformers associated with downlights generate excess heat and if trapped by insulation this can cause problems. Other combustible material including dust and leaf litter blow into roof spaces increasing the risk of fire with these types of downlights.

Make sure downlights and insulation are correctly installed so they do not pose a fire risk.

### Replacing existing downlights

Building and Energy recommends the replacement of any existing dichroic globes with a safer alternative, such as LEDs. These do not produce the extreme temperatures of halogen lights.

You will need to employ a licensed electrical contractor to replace dichroic downlight fittings with a new LED downlight kit.

Or replace existing halogen downlights with special LED-retrofit globes. The downside of this retrofit option is that the LED globes could be replaced with dangerous halogen globes in the future. In some cases, this may also involve the replacement of transformers.



Whatever choice of downlights, it is important to ensure the necessary clearances with any surrounding insulation are maintained.

Other replacement options are available and you should discuss these with your lighting supplier and licensed electrical contractor.

### Important information regarding downlights

If you are considering downlights you must contact a licensed electrical contractor to have them installed if they are to be hard wired.

[www.dfes.wa.gov.au/safetyinformation/fire/fireinthehome/pages/downlights.aspx](http://www.dfes.wa.gov.au/safetyinformation/fire/fireinthehome/pages/downlights.aspx)

For more information refer to AS/NZS 3000:2018 clause 4.5.2.

### RCDs (Residual Current Devices)

Legislation in Western Australia requires every home sold or leased to be fitted with a minimum of two RCDs, which must protect all power and lighting circuits.

RCDs are a vital safety measure to detect an imbalance in the electrical current and disconnect the power within 10 to 50 milliseconds, preventing electric shocks and fire.

Installing RCDs in your main switchboard, with regular testing, will provide long term protection for you and your household against electric shock.

When having RCDs installed:

- Always use a licensed electrical contractor. To find out if a contractor is licensed, contact Building and Energy on 1300 489 099 or check online at [www.dmirs.wa.gov.au/building-and-energy](http://www.dmirs.wa.gov.au/building-and-energy)
- Ensure your electrical contractor provides you with an Electrical Safety Certificate. This will state that your RCDs have been installed in compliance with the Wiring Rules Standard (AS/NZS 3000:2018).
- The electrical contractor must notify the electricity network supplier that two RCDs have been installed by submitting a Preliminary Notice and Notice of Completion.

### If you have a problem

If you have a concern or complaint about an insulation seller, installer or manufacturer, contact Consumer Protection. We offer free advice about warranties, terms and conditions, sales promises, levels of service, work quality and more.

Consumer Protection  
Contact Centre: 1300 304 054 (cost of a local call)

National Relay Service: 13 36 77  
(for the hearing impaired)

Email: [consumer@dmirs.wa.gov.au](mailto:consumer@dmirs.wa.gov.au)  
Website:

[www.consumerprotection.wa.gov.au](http://www.consumerprotection.wa.gov.au)

### Further Information

| Topic                            | Contact                                                                                                                                                                                        |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Home insulation R-values         | <a href="http://www.yourhome.gov.au">www.yourhome.gov.au</a>                                                                                                                                   |
| Australian Standards information | Standards Australia<br><a href="http://www.standards.org.au">www.standards.org.au</a>                                                                                                          |
| Electrical safety advice         | Your local licensed electrical contractor or:<br>Building and Energy<br><a href="http://www.dmirs.wa.gov.au/building-and-energy">www.dmirs.wa.gov.au/building-and-energy</a> Tel: 1300 489 099 |
| Fire safety advice               | Department of Fire and Emergency Services (dfes)<br><a href="http://www.dfes.wa.gov.au">www.dfes.wa.gov.au</a>                                                                                 |

**Disclaimer** – The information contained in this fact sheet is provided as general information and a guide only. It should not be relied upon as legal advice or as an accurate statement of the relevant legislation provisions. If you are uncertain as to your legal obligations, you should obtain independent legal advice.

**Consumer Protection** | Department of Mines, Industry Regulation and Safety

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