



INSULATING YOUR HOME

FAST FACTS FOR HOUSEHOLDS

Insulation will keep your home warmer during winter and cooler when the weather gets hot. A well insulated home can be around 10°C warmer in winter and 7°C cooler in summer! It can also mean big savings as insulation can reduce power bills by up to \$125* per year. Insulating your home is a great way to help our environment without compromising on comfort.

WHAT DOES INSULATION DO?

Insulation creates a buffer in roofs, walls and floors that reduces heat flow into and out of your home. In summer, insulation provides a barrier to the hot sun by preventing heat from entering and keeping your home cool. In winter, insulation helps to keep the heat inside your home.

TYPES OF INSULATION

There are two types of insulation and they work in different ways:

- bulk insulation traps pockets of still air within its structure, which creates a barrier that prevents heat from entering or escaping the home
- reflective insulation reflects heat away from its surface – it works best in an area where there's at least 25mm of air space for the heat to be reflected efficiently.

INSULATION PERFORMANCE RATINGS

When choosing insulation, the most important factor to consider is the **R-value**, which measures a material's capability to resist heat flow. The greater the value, the better resistance to heat transfer and the lower your power bill! Australian Standards recommend different insulation levels for different areas of NSW based on climatic differences. Use these standards as your guide – over insulating your home can be counter-productive as it may make your home too hot in summer. Different R values are appropriate for different climate zones. To find out more about the best R value for your home, go to the Your Home website www.yourhome.gov.au

DID YOU KNOW? To maximise the effectiveness of your insulation make sure there are no gaps between materials. If just five per cent of an area is left uninsulated up to 50 per cent of the potential benefits can be lost!

WHERE TO INSULATE

To cut down on your electricity costs the best places to insulate your home are:

- ceilings – save about 20 to 40 per cent on heating and cooling costs
- external walls – a saving of between 10 to 60 per cent on heating and cooling costs
- floors – an additional saving of another 5 to 10 per cent on heating and cooling costs.

Existing homes can have insulation installed in the ceiling and under timber floors if there's space and access. It's easiest to insulate walls during recladding or replastering or when you're building or renovating.

Heat leaks

If your home is not adequately insulated, heat can be lost across the home. Here's where the most common heat leaks occur in winter:

- ceiling 25 to 35 per cent
- walls 10 to 20 per cent
- floor 10 to 20 per cent
- windows 11 to 20 per cent
- air leakage 15 to 25 per cent.

DID YOU KNOW? Fire safety in the home is important. Always ensure that insulation is not installed within 90 mm of chimneys or flues or exhaust fans.



There are simple things we can all do that will lower power bills and reduce our impact on the environment.

INSULATION TYPES

There are a wide variety of insulation options on the market. Match the type and weight of your insulation with your house design, climate and lifestyle.

Here are some fast facts to help you make the best choice for your home and environment:

- ensure corners of ceilings, walls and floors are properly insulated – this is often where heat leaks are found. If just five per cent of an area is left uninsulated, up to 50 per cent of the potential benefits can be lost.
- keep your insulation dry at all times, insulation doesn't work well when wet – polystyrene is an exception as it is water resistant.

Insulation type	Materials	Where to use it
Batts	Glassfibre, rockwool, sheep wool and polyester	Ceilings, framed walls and under timber floors
Blankets	Foil backed glassfibre, polyester and rockwool	Under metal roofs and in metal walls
Boards	Expanded polystyrene (option with foil attached)	Cathedral or raked ceilings, under timber floors and suspended concrete floors, concrete slab edges and within framed and full masonry walls
Loose fills	Cellulose fibre, sheep wool and granulated rockwool	Ceilings (Note: must be professionally installed)
Reflective	Reflective foil, concertina foil batts, sarking and multi-cell reflective foils	Ceilings, framed walls and under timber floors
Composite	Double layers of materials with insulation sandwiched between concrete reinforced polystyrene wall systems and lightweight concrete. Made from a combination of materials, often combining bulk and reflective materials.	Ceilings, framed walls and under timber floors

OTHER WAYS INSULATION HELPS

Soundproofing

Some insulation has excellent soundproofing benefits. Use for buffering noise in homes that have metal materials, like roofing, that can be affected by external noise from wind, rain and hail.

Condensation

If your home is prone to condensation or rising damp, insulation can reduce moist air in your home in two ways:

- It keeps surfaces in your home warm, so that water vapour cannot condense on them. This can help avoid problems such as mildew.
- A layer of material to seal the insulation (e.g. aluminium foil or

polythene sheeting) can be installed into the inside of bulk insulation to prevent water vapour on cold surfaces. This insulation suits homes with cathedral ceilings and flat roofs where there isn't enough air flow to remove water vapour that builds up in the roof space.

Summer considerations

Insulation works best when coupled with good shading of windows and appropriate ventilation in summer. This can prevent heat being collected and trapped inside your home. Reflective foil installed under the roof (sarking) is highly effective in summer as it reflects direct sunlight away from the home.

For more ideas on how you can save power around the home see our full fact sheet series at savepower.nsw.gov.au

INSULATION – GET A PROFESSIONAL

An experienced and reputable insulation installer will install your ceiling insulation safely and effectively according to Australian Standard AS3999 or manufacturer's instructions. The Federal Government has published a list of [deregistered installers](#).

The installer should:

- follow the manufacturers' installation instructions carefully – if bulk insulation is flattened it won't work as well, and reflective insulation needs an air gap next to the shiny surface.
- observe [fire safety](#) and not install insulation within 90 mm of chimneys, flues or exhaust fans.

Join the NSW homes that have pledged to save power by using the [Power Pledge tool](#) at savepower.nsw.gov.au

Choose from a list of energy efficient actions you can do to save power, money and our environment. Use the Power Pledge tool to track your progress and see how much you can save.

savepower.nsw.gov.au

* Savings based on household electricity price July 2011.