

Insulating Your Home

Insulation is essential to keep your home warm in winter and cool in summer. A well insulated home is up to 10°C warmer in winter and up to 7°C cooler in summer and can save as much as \$300 per year in reduced energy costs. When you use less energy in your home, you reduce greenhouse gas emissions and help conserve our precious energy resources.



Types Of Insulation And How They Work

There are two types of insulation products that work in different ways:

- Bulk insulation works by trapping pockets of still air within its structure. This air provides a barrier or resistance to heat flow.
- Reflective insulation works by a combination of reflecting large amounts of heat away from its polished metallic surface and/or by reducing the radiant heat being emitted from the surface.

Where To Insulate

Insulation should be installed in the roof, ceiling, external walls and under suspended floors. Existing homes can easily have insulation installed in the ceiling and under timber floors if crawl space is available. Walls can be insulated during recladding or replastering.

Which insulation should I use?

- **Batts** - glass fibre, rock wool, sheep wool and polyester - suitable for use in ceilings, framed walls and under timber floors.
- **Blankets** - foil backed glass fibre, polyester and rock wool - suitable for use under metal roofs.
- **Boards** - expanded or extruded polystyrene (may have foil attached) - suitable for use in cathedral or raked ceilings, under timber floors and suspended concrete floors, around concrete slab edges, and within framed and full masonry walls.
- **Loose fills** - cellulose fibre, sheep wool and granulated rock wool - suitable for use in ceilings, must be professionally installed.
- **Reflective** - reflective foil, concertina foil batts, sarking and multi-cell reflective foils - suitable for use directly under roof, in ceilings, framed walls and under timber floors.

How Is The Performance Of Insulation Measured?

When choosing bulk insulation, the most important factor to consider is its R-value.

The R-value is a measure of a material's resistance to heat flow, and therefore its performance. The higher the R-value, the greater the resistance to heat transfer, and the greater the energy savings.

Products with reflective surfaces often use an expression of emissivity - the lower the better.

Emissivity is the amount of heat being emitted from a surface.



Insulation

Recommended Insulation Levels

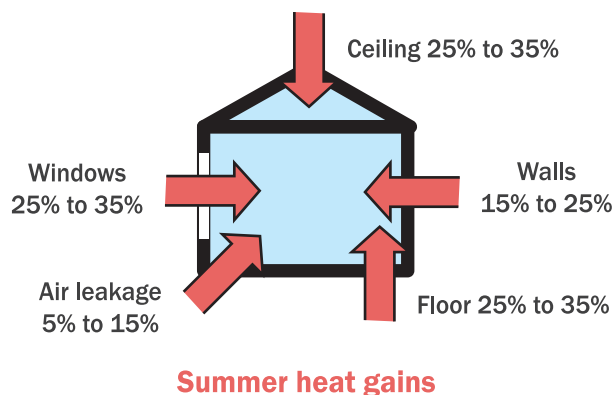
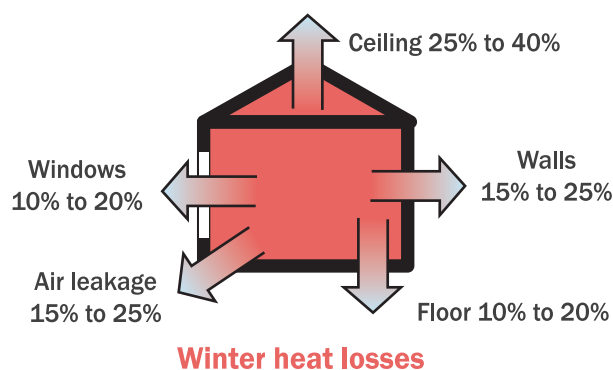
Increasing insulation levels above the minimum requirements will increase energy savings and comfort. In most areas of NSW Australian Standards recommend different insulation levels for different locations in NSW based on climatic differences as well as energy and insulation costs. The table below features recommended insulation levels for selected New South Wales locations, based on the Australian Standard AS 2627 1-1993.

Location	Ceiling		Walls		
	Heating Only	Heating and Cooling	Space or Room Heating	Central Heating only	Central Heating and Cooling
Sydney (coast)	1.5	3	1	1	1.5
Sydney (inner city + west)	2	3	1	1.5	1.5
Albury	2.5	4	1.5	2	2
Lismore	0	2.5	0	0	1
Tamworth	2.5	4	1	1.5	2
Bathurst	4	4	1.5	2	2

Insulation Tips

- Avoid gaps in the insulation. If only 5% of an area is left un-insulated, up to 50% of the potential benefits may be lost.
- Keep bulk insulation dry at all times.
- Have your wiring inspected by a licensed electrician to ensure it can be safely covered by insulation.
- Avoid loose-fill insulation if your roof space is excessively draughty, unless a sealant can be added to bond its top surface.
- Reflective foil should be installed with a still air gap of at least 25 mm width next to the reflective surface. Tape up any holes, tears or joins in the foil.

Caution! Do not install insulation within 90 mm of hot flues or exhaust fans. Do not put insulation over or within 25 mm of recessed light fittings.



Further Information

Port Macquarie-Hastings Council on 6581 8111 or visit www.pmhc.nsw.gov.au.

Federal Government Greenhouse Office on 1300 130 606 or visit www.greenhouse.gov.au



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