



## 5. Installing insulation

**I**nsulation keeps your building warmer in winter and cooler in summer by preventing heat transfer in and out of the building. It reduces your building's heating and cooling needs and is one of the most cost effective energy efficiency actions that you can take.

### Getting started

The most economic approach is to insulate your entire building. Your insulation priorities should be the:

- ceiling
- walls
- underfloor
- windows.

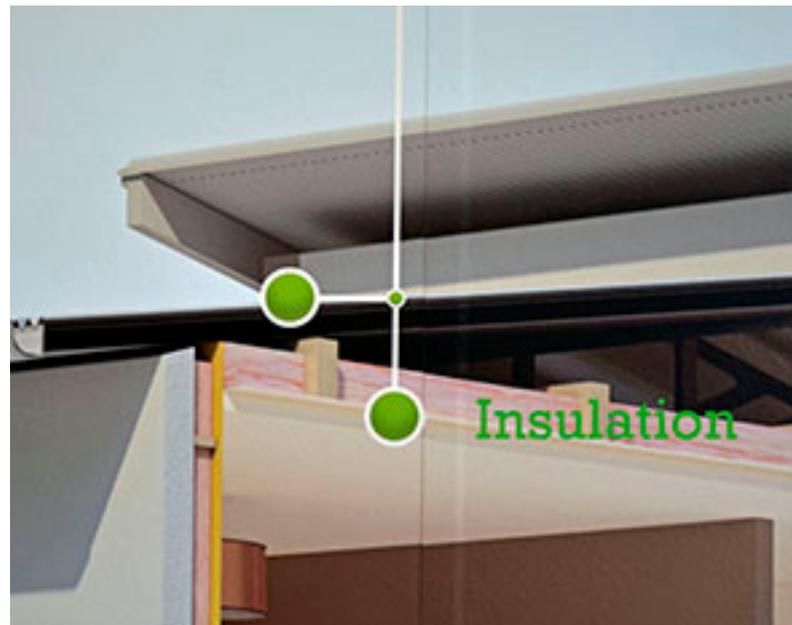
Start by insulating the roof and any walls you can get access to. Those in cooler climates should consider floor insulation; however, insulating floors in warmer climates is not a good idea as it decreases the cooling effect of raised floors.

Windows can be effectively insulated with double-glazing. DIY options include reflective material that is placed on a window pane.

Reflective window covers are not advisable in cooler climates as they reduce solar heat gains in winter. You can also prevent heat transfer with the savvy use of curtains, blinds, pelmets and external shading.

### Effective insulation

The effectiveness of insulation is measured by the 'R' value. The higher the R-value the higher the level of insulation.



Get advice on the right insulation material and appropriate R-value for your building type and climate.

There are two main types of insulation:

- **bulk** insulation; which creates a physical heat barrier (e.g. wool, polyester, polystyrene or fibreglass batts)
- **reflective** insulation; which reflects heat away (e.g. foil batts).

To **ensure safety**, have your insulation installed by a reputable professional. Check that the insulation you chose is accredited to the Australian Standard 4859.1.

If you are building or renovating, insist that the highest R rated insulation recommended for your climate is used, and that both the walls and the ceilings are insulated.

### Wall insulation

Wall insulation is always best done at the

time of building (or renovating). But with some structures insulation can be retrofitted either by removing one side (the outer cladding or inner lining) and inserting a suitable product in the gap.

Some products can be pumped in through a small opening to fill the gap. Sometimes building on an extra layer or replacing a layer of outer cladding is an appropriate option. Talk with a builder or well qualified insulation installer.



## CHECK POINTS

- ▶ Seek advice and support from a licensed professional.
- ▶ Provide access to the roof to assess if there is any insulation already.
- ▶ Check the effectiveness of existing insulation and investigate appropriate insulation ratings and products.
- ▶ Seek an informed opinion on the relative merits of replacing inadequate insulation.
- ▶ Collect a few quotes.
- ▶ Check if any rebates are available.

## Floor insulation

Retrofitting floor insulation is only possible if there is an underfloor gap that can be accessed easily. There are a range of insulating products, which generally come in continuous rolls, that can be attached to the underfloor. This has the advantage of sealing any gaps.

Great care must be taken to not interfere with electrical wiring. Once again consult a builder or insulation installer about options for your situation.

## Window insulation

Double glazing is a fairly expensive way to insulate windows, particularly when retrofitting. It is also most cost effective in colder areas.

Double-glazed windows use two layers of glass with an air or Argon-gas filled gap in between. You can buy ready-made double glazed and even triple glazed units.

## DIY window insulating

There are kits on the market that contain a plastic membrane that attaches to your window frame to enclose an insulating layer of air.

There are also DIY forms of insulation that involve the use of plastic wrap and a hair dryer, or bubble wrap attached with tape. These alternatives are useful for windows that are not used in winter.

Drawing heavy curtains will insulate windows. If the curtains are ceiling to floor or have pelmets, this will prevent warm air from escaping or entering.

Draw the curtains to prevent heat gain on hot days and to retain warm air on cool nights.

## Further resources

Check out A Greenhouse Around the Corner website:

[www.agreenhouse.net.au/helpful-resources](http://www.agreenhouse.net.au/helpful-resources)

## Related fact sheets

Fact sheet 12: Window treatments for energy efficiency

Fact sheet 16: Understanding passive solar design

For more fact sheets, go to A Greenhouse Around the Corner website:

[www.agreenhouse.net.au/fact-sheets](http://www.agreenhouse.net.au/fact-sheets)