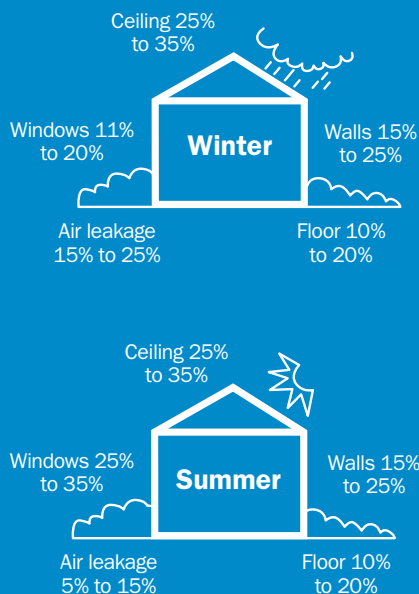


## Tech Talk

Insulation works by creating a barrier to heat transfer through the ceiling, walls and in some cases, floors. In summer it helps keep your home cooler by reducing the amount of heat entering your home. In winter it helps keep your home warmer by trapping the warm air inside. The diagram below shows typical heat gains and losses for an average house.



# Insulation

## Why install insulation?

Installing insulation in your home is one of the most cost effective measures you can take to help you stay warm in winter and cool in summer. It'll mean that you stay comfortable naturally for longer and can greatly reduce the amount of time you need to use your air conditioner or heater, meaning you'll save more on your power bill.

## Installing insulation in your home

Insulation can be added to existing buildings with varying effectiveness and costs depending on the construction type and where the insulation is being placed. Retrofitting ceiling insulation is common in Alice Springs as many houses were not insulated at the time of construction (though it is often difficult to retrofit insulation in walls). For best results, all ceilings, walls and raised floors should be insulated, and the best time to do this is at construction.

## How do I know what type of insulation to install?

There are two main types of ceiling insulation – bulk and reflective foil. The right type for your home will depend on the type of ceiling cavity, access available to the ceiling and personal choice. Bulk insulation includes materials such as fibreglass, wool, cellulose fibre (shredded newspaper treated with flame retardant), polyester and polystyrene. For houses that have minimal ceiling cavity, 'blow in' insulation (such as cellulose fibre) can be an appropriate solution. Reflective insulation materials include foil backed blankets, foil backed batts and foil faced boards.

A detailed list of the types of insulation available can be found on the Alice Solar City website.

## What is the insulation 'R-value'?

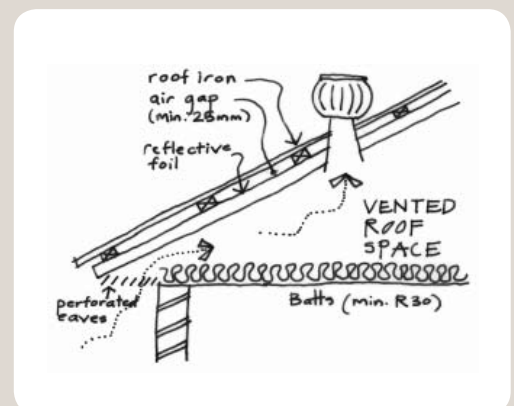
The effectiveness of insulation (or any other building material for that matter) is indicated by its 'R-value' – the higher the R-value, the higher the resistance to heat flow. One type of insulation may be thicker or thinner than another, but if they both have the same R-value, they will perform equally. This makes it easy to compare products. In Alice Springs, the recommended R-value for ceiling insulation is a minimum of R3.0; for walls, it is R1.5.

## Tips to maximise insulation performance

Follow these tips to maximise the performance of your insulation:

- Ensure that adequate gaps and/or heat guards are in place around any heat sources, such as recessed ceiling lights (such as downlights) as this is a fire risk.
- Heat loss will still occur in winter if there are large areas of unprotected glass in your home, or through fixed wall vents, and gaps and cracks around external doors and windows. Appropriate internal window coverings (e.g. lined drapes with pelmets) and draught proofing are vital to complement insulation.
- In the hotter months, insulation will be most effective when installed in houses that have light coloured roofs and walls and those that have windows and walls that are adequately protected from direct sunlight in summer. Without shading, unwanted heat entering the home through the windows will be trapped inside by the insulation.
- Ensure doors and windows are closed in summer to prevent heat entering from outside during the hottest part of the day.

The optimal configuration for typical cavity roofs and walls in Alice Springs is in the following diagram:



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