

# Insulation options



Sustainable design and build

No matter how well a home in Tasmania collects and stores heat, if that heat is allowed to escape then the whole exercise is pointless. Insulating a house is like giving it an overcoat and, in general, the thicker the overcoat the better.

There are a number of different materials and concepts that can be employed to provide this important element and in some cases the materials used in construction can contribute to the levels of insulation needed, straw bales are a good example.

The most common group of materials used to insulate homes in Tasmania work in just the same way as straw bales, providing pockets of air between the fibres of batts or in the bubbles of plastic foam.

It's the pockets of still air that slow the passage of heat. The fibre or foam just provides a framework that stops the air from moving around. It's important not to compress this insulation, as that will simply squeeze out the air and reduce its effectiveness.

Shiny reflective foil is the most common example of the second major class of insulating materials.

Shiny metallic surfaces have some useful characteristics, the first being that they can reflect radiant energy back to where it came from, so, sandwiched in a wall or roof, they can help to prevent the passage of heat. These shiny surfaces also re-radiate heat at a lesser rate than many other materials, again potentially reducing the rate of heat loss.

Foil must be clean and dry to work effectively and it must face into an air space. Once foil is dirty or touches another surface it stops working.

In general these two classes of material are used in



combination to capitalise on their different qualities.

But no matter which materials are used, and in what combination, the important thing is that they form a complete 'envelope' around, over and often under the house.

Un-insulated windows are an obvious weak point in this envelope and here the use of double glazed or 'insulated glass units' will reduce the passage of heat between the inside and the outside of the house.

Double glazing is available at a variety of levels and standards, using different gaps between panes, different air or gas mixtures between the panes and different glass finishes to further reduce heat gain or loss.

As double glazed units become more efficient at slowing the passage of heat, then the type of window frame becomes more significant.

Types of timber or PVC frames are usually considered the most efficient, with 'thermally broken' aluminium frames or aluminium/timber hybrids now becoming more popular.

Curtains and some types of blinds can further add to the performance of any window, provided they are fitted and used properly.

**For free advice about these important issues, call us today on (03) 6227 9633.**