# Cavity Wall Insulation

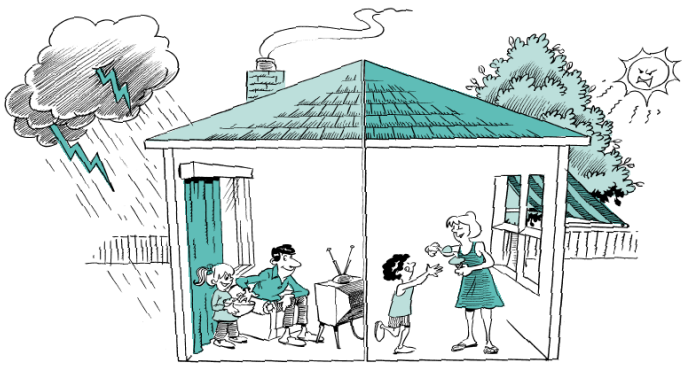
## Up to 50% of your heat loss can be through your walls.

If your home has insulation in the ceiling but not in the walls, over 50% of your heat loss can be through your walls. Therefore insulating your walls will make a huge difference to the temperature of your home, and to your heating and/or cooling bills.

## Where can cavity wall insulation be installed?

If your existing home is double brick or brick veneer, there is an air gap or cavity between the external brickwork and the internal brickwork or plasterboard wall. This fact sheet describes how insulation can be inserted in this cavity.

Monocrete and most other forms of walling have either negligible internal cavities or are very difficult or impossible to access. In these types of constructions, extra cladding can be added to the outside of the house with insulation placed between it and the existing wall. A weatherboard wall can also be insulated either by prising off several boards to give access to the gap between the timber studs and then replacing them afterwards or by drilling holes internally in the plaster.



## Benefits

*Comfort Level:* By installing cavity wall insulation into a brick veneer wall, up to 85% of heat transfer through the walls can be prevented. In a double brick wall (often called cavity brick), this figure is up to 63%, making your home warmer in winter and cooler in summer. It will also make the inside of your walls warmer in Winter, virtually eliminating any condensation and mould problems. In a weatherboard home wall insulation can reduce heat losses by 75%

*Money Saved:* By reducing the heat loss or gain through the walls, your energy bills for heating or cooling will be lower. Energy savings in Winter ranging from 19% to 35% are possible when cavity wall insulation has been added to a home with existing ceiling insulation, assuming that the home is heated to the same level as before. If you choose a lower inside air temperature you can reap even bigger savings.

*Environmentally Friendly:* Stopping heat loss will reduce your energy consumption, thus cutting down on greenhouse gas emissions. Insulating the cavity walls of an average Canberra home will save up to 1 tonne of greenhouse gas per year.

*Improved EER:* The Energy Efficiency Rating (EER) of a Canberra home can be increased by 1 or 2 stars by installing cavity wall insulation, depending on the size of the home and the type of wall/floor construction. Research shows that the higher the star rating of a house the higher the advertised sale price.

*Acoustics:* Cavity wall insulation is also an acoustic insulator, protecting your home from unwanted exterior noise and reducing the impact of noise from within your home on the neighbours. This is most significant for windowless walls.

## Types of Insulation

There are a few different forms of wall insulation available. The main forms are polystyrene foamboard, or batts of polyester fibre, wool, fibreglass or Rockwool or recently polystyrene beads with PVA glue. Only granulated, water repellent Rockwool is recommended for existing homes because of the relative ease of installation and because it can be installed in existing walls without risking moisture from rain soaked brickwork reaching the inner surface.

## Characteristics of Rockwool

Rockwool is manufactured in Australia from a mixture of molten rock with a small percentage of recycled glass furnace slag, which is extruded into fine fibres and felted into a mat. It is then granulated to enable it to be pumped into the cavities of existing walls. It is rot proof, odourless and will not sustain vermin or fungal growth. Once installed, it does not release dust or fibres and is not known to have any ill effects on health. It settles very little over time, with a 100 year guarantee. Rockwool will not burn on exposure to flame.

To prevent the transmission of moisture the granulated insulation is factory-treated with a silicon-based water repellent. The product has undergone independent laboratory performance testing by CSIRO, and has been widely used for many years.

## How it is installed?

Cavity wall insulation can be installed into most brick veneer or double brick homes. Access is usually obtained to the cavity by removing the roof tiles above the external walls. A special hose is inserted into the cavity through which the insulation is pumped. If a home has a metal roof, access to the cavity can only be obtained by either injecting it through holes drilled in the external skin of brickwork or lifting the roof sheets over the wall cavity.

For houses of two storeys, cavity wall insulation in the lower levels is normally injected through holes drilled in the external skin of brickwork. Holes are also drilled under windows to access this part of the wall. The holes are filled with mortar at the completion of the job.

Before the insulation is installed, an electrician will need to check that the wiring will still comply with Australian standards when covered with insulation. In most cases the installer's electrician will do the initial inspection as part of the price, but any electrical modifications recommended will be at the homeowner's expense.

## R Values achieved

The R-value is a measure of resistance to heat flow through a material. For insulation, the bigger the R-value the better. Rockwool insulation will achieve the approximate total R values in the following table when properly installed in walls. Figures can vary depending on the thickness of the cavity and the depth of the studs.

| House Type | No insulation | After insulation |
|---|---|---|
| Double brick: | R 0.5 | R 1.5 |
| Brick veneer: | R 0.4 | R 3.4 |
| Weatherboard | R 0.5 | R2.5 |

## More information

This fact sheet is produced by the Home Energy Advice Team (HEAT) to provide you with some quick tips on cavity wall insulation. If after reading it you'd like more free information about this or any other topic to do with saving energy in your home, don't hesitate to contact us:

HOME ENERGY ADVICE TEAM