

# Insulation

## Lockwood Ceiling Insulation in Older Homes

Insulation has a huge impact on the comfort of your home, in winter it helps keep your home warm, in summer it helps keep your home cool.

Ceiling insulation is the most important insulation in the house. Since hot air rises, improving ceiling insulation to stop the warm air escaping through the ceiling is the most effective way of reducing heating bills.

The measurement of efficiency is measured in “R”s, the higher (well-distributed Rs) the better.

Refer to the following data to determine the R value based on the age of your Lockwood Home

Year	Under purlin size	Dummy rafter size	Roof purlin size	R value achieved
-----1979	10mm	n.a.	45mm	nil
1980 - 2000	n.a.	70mm	45mm	<b>R1.5</b>
2001- 2008	n.a.	90mm	45mm	<b>R2.93</b>
2009 -----	n.a.	140mm	45mm	<b>R3.5</b>

Increasing the R rating can make dramatic difference to your comfort levels in the long run.

New buildings are required to meet R-values in floor, walls and ceilings.

Double- glazing also contributes to achieving the R-value requirements.

The achieved R-values vary from floor to wall to ceiling and evenly distribute the efficiency of the insulation throughout the building.

The same distribution should be considered when retro fitting insulation.

For an older Lockwood home with 62mm exterior walls (R-value of 0.62) it would be best to upgrade your ceiling to R2.93 maximum.

This would provide the most efficient balance.

If your home has 62mm exterior walls and R2.93 ceilings the efficiency gains by upgrading to R3.5 in the ceiling would be minimal unless the walls and glazing were also upgraded.

## **RETRO FITTING YOUR OLD LOCKWOOD**

As the most likely homes to be upgraded are pre 1980 and would require the removal of the roofing it may be most cost effective to coordinate the insulation upgrade with the Re-roof of your Lockwood home.

Existing roofing in good condition can be re used but will require screw fixing and as the roof will move slightly forward into the spouting, new top ridge, barge and wall flashings that comply with E2 acceptable solutions will be required.

We offer the following retro fit recommendation for your consideration;

### **Recommendation;**

To achieve R-value of 2.93 for pre 1980 homes;

- This would involve the removal of roofing, spouting, 45mm roofing battens and 10mm under purlins.
- Existing fascia and barge boards can be retained, new fascia and barge boards can be attached to the existing timbers.
- New 90x45 dummy rafters, 70x45 roof purlins, insulation, self support papers, roofing (or reuse existing) and flashings (refer to detail drawings)

Since the improvements involve changing the means of fastening the roof cladding to the building structure you should check with your builder to determine whether the local authority will require a building consent.

We recommend that a Lockwood Franchisee carries out the work and they follow the approved Lockwood details and fixings.

## **UNDERFLOOR INSULATION**

Research indicates that many New Zealand homes have no, or inadequate, underfloor insulation.

Reflective foil – draped over floor joists-was the most common material used.

The foil had no R value but would trap air and reflect back escaping radiant heat.

Bulk underfloor insulation products that are well fitted between the joists with a minimum thermal resistance of R1.4 are recommended.

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Websites to visit for more information;

Energy efficiency and Conservation Authority (EECA) [www.eeca.govt.nz](http://www.eeca.govt.nz)

Energy Wise News on Line; [www.energywise.co.nz](http://www.energywise.co.nz)