

Build Back Smarter Info Sheet

Wall insulation

The opportunity to build back smarter

Disaster repairs: Replacement of exterior cladding or interior wall linings

Opportunity to upgrade: Install wall insulation in exterior walls. It is easiest and most cost effective to add wall insulation when linings or cladding are removed. Most houses will have no wall insulation. Full insulation (including walls) is important for keeping warmth in the home and reducing dampness. Wall insulation can be added from either the inside or out.

Installing wall insulation while your house is being repaired, represents one of the best opportunities, as normally it can be quite a disruptive process.



If you are having cladding replaced, wall insulation can be added from the outside.



If your linings are being removed and replaced, wall insulation can be added from the inside.

Why wall insulation is important

Insulation acts in two ways – in winter, it's like a blanket keeping your home warm, and in summer, it's like the walls of a chilly bin, keeping your home cool. Having a well-insulated home means that when you heat (or cool), it's your house that gets the benefit. Heating or cooling an un-insulated house is like trying to fill a bath with water, but not putting in the plug.

As insulated surfaces are warmer, condensation is less likely to form on them. As a result, an insulated house will have less mould and mildew, and be a less appealing environment for allergy-aggravating dust mites.

18-25% of heat escapes through the walls in an uninsulated house. Once your ceilings and underfloor have been insulated, most heat escapes through walls and windows. Because walls are the surfaces we are often close to during day to day living, improving wall insulation can make a big difference to comfort levels in your home.



Houses built before 1979 are unlikely to have any wall insulation. Even if your house has some existing wall insulation, insulation was installed before 2007 to a lower level than the current minimum standards. Some products installed before 2000 have a high failure rate due to slumping or general ineffectiveness (eg gib-backed foil, early batts, blown in products).

Adding wall insulation to existing homes is most easily done when wall claddings or linings are being removed and/or replaced. This is something that you might normally only do during major renovations, about every 30 years or so. However, earthquake damage to walls has meant that many repairs are having to replace cladding or lining. It's an opportunity to install wall insulation (and improve your home's warmth and dryness) that might not come around again for a long time.

Build Back Smarter recommendations

If your house is pre-1979, consider adding wall insulation as a top priority. Bulky insulation with an R value of at least 2.6 is recommended for walls. As many older houses don't have building paper, install building paper at the same time as insulation. This helps stop moisture coming in contact with your insulation.

If your house is post-1979, then replacing slumped or poorly performing insulation is recommended if work is going to be done on the internal linings or exterior cladding.

If your house has older vulcanised rubber wiring, then your insurer's electrician should advise you of that. It's recommended that any unsafe wiring be replaced before wall insulation is installed.

Solid concrete walls are difficult to add extra insulation to. If you have solid concrete walls, concentrate on other parts of the house first (ceiling, floors, windows) to improve your home's warmth.






Types of wall insulation

If the house has no building paper in the walls, building paper also needs to be installed behind the wall insulation. If the house is being re-clad, then generally your insurer's builder will be responsible for installing building paper. If the insulation is being installed from the inside, then inserts of building paper are added between the framing.



Your insulation installer will recommend which products to use. These are typical choices.

<p>Polyester (e.g. Autex Greenstuf, Mammoth, Eco Insulation)</p> 	<ul style="list-style-type: none"> ▪ A range of R-value products suitable for ceilings, walls and under-floor. Slightly lower R-values than fibreglass for same thickness of material. ▪ Some products are Environmental Choice certified and have high recycled content. ▪ Available as segments for wall insulation installs. ▪ Stable, long life product although prone to compression damage if stored inappropriately before installation.
<p>Glass wool/Fibreglass (e.g. Pink Batts, Bradford Gold, Earthwool)</p> 	<ul style="list-style-type: none"> ▪ A range of R-value products suitable for ceilings, walls and under-floor, including high R-values ("Ultra" type products). ▪ Some products are Environmental Choice certified and have high rates of recycled glass content. ▪ Available as segments for wall insulation installs. ▪ Early installations (e.g. those done in the 70s and 80s) may well have slumped and are of a very thin product – these need topping up or replacing. ▪ Long lasting product - current products have an expected 50 year life.
<p>Wool (e.g. Eco Insulation, Terra Lana, Latitude, Woolcote)</p> 	<ul style="list-style-type: none"> ▪ A range of R-value products suitable for ceilings, walls and under-floor. Slightly lower R-values than fibreglass for same thickness of material. Often available mixed with polyester. ▪ Some products have a high proportion of recycled fibre. ▪ Chemical treatment protects from fire and pests. ▪ Available as segments for wall insulation installs.



What is an R-value?

Insulation generally works by trapping air which is the most effective method and/or reflecting heat. Materials that provide good heat insulation are lightweight because they contain large amounts of tiny pockets of still air.

The 'R-value' measures how good the insulation material is at containing heat. The higher the R-value on an insulation product, the more it slows down the transfer of heat and the more effective it will be. Generally, the R-value of insulation gets higher as the product gets thicker. For example, an R3.0 product has greater thickness than a R1.0 product of the same type. However, using R-values helps you to compare the effectiveness of different types of insulation.

You should also note that insulation needs to be properly installed to reach its R-value and work effectively.

Installation

While it might at first seem simple, wall insulation installation is best done by someone who is well trained and experienced, not just your builder.

Having a good quality install is key to getting high performance out of your ceiling insulation. The insulation needs to be gap free – even small gaps or folds and tucks can have a big negative impact.

Choose a retrofit installer who is:

- Trained through the Insulation Association of New Zealand (IOANZ) training programme
- From organisations accredited by EECA as Warm Up New Zealand installers

