

# INSULATION FOR EXISTING HOMES



 GreenStuf®

# GREENSTUF® INSULATION QUICK FACTS



## HIGH PERFORMANCE

GreenStuf insulation is not affected by moisture, is naturally resistant to insect and vermin attack, and meets relevant requirements of the NZBC.



## FIRE SAFETY

GreenStuf polyester insulation has been independently tested and assessed to the relevant fire standards for New Zealand Building Code (NZBC) compliance, including downlights.



## DURABLE

GreenStuf will not settle or reduce its performance over time, and is backed by a 50 year product durability warranty.



## SAFE TO TOUCH

GreenStuf is 100% polyester (like a duvet) so there's no nasty itching or scratching. It's completely safe and does not require protective clothing when handling or installing.



## SAFER INDOOR AIR QUALITY

GreenStuf does not contain any added chemicals such as formaldehyde-based binders or fibres that can be breathed into your lungs.



## RECYCLED CONTENT AND RECYCLABLE

GreenStuf's products are reusable, recyclable, and made of 100% polyester fibre, with up to 85% recycled fibre sourced from PET plastic. For specific percentages, see product datasheets.



## LOCAL AND PROUD

GreenStuf is proudly made in New Zealand for Kiwi homes.



## QUALITY

GreenStuf is made under tightly-controlled manufacturing processes. To ensure GreenStuf is consistently of the highest quality, Autex Industries employs a team of experts to run a full-scale product testing laboratory on site.



## BREATHE EASIER

GreenStuf has been independently endorsed by Asthma New Zealand and accepted into their Breathe Easy programme as a product considered safe for New Zealanders living with asthma.

# WHAT IS GREENSTUF®?

GreenStuf® is a thermal and acoustic insulation made from 100% polyester fibre. Proudly made for Kiwis by Kiwis, GreenStuf is made on a zero waste manufacturing line; every element—from packaging to product—is recyclable at the end of its life. GreenStuf insulation is safe to touch, with no formaldehyde, Red List chemicals, or potential airborne fibres.

Backed by a 50 year warranty, GreenStuf will never slump or settle over time—unlike traditional insulation—ensuring your project is insulated for the future.

## CARING FOR THE ENVIRONMENT

GreenStuf's entire range is crafted from 100% polyester fibre, incorporating as much as 85% recycled fibre sourced from PET plastic. Our products are designed to be recycled at the end of their life too.

We use Life Cycle Analysis (LCA) to understand the environmental impacts of our products and set targets to reduce these. All our products have been verified as low VOC and are free from chemical binders making them great for indoor environmental quality (IEQ).

We have continual improvement programmes in which we implement a range of initiatives to mitigate the environmental 'hotspots' that we have identified. Our products are GreenRate Level A, Health Product Declaration (HPD). GreenStuf is Declare certified to be Red List free, and can be used in Living Building Challenge projects.

Autex has a high functioning Environmental Management System (ISO 14001) to enhance our environmental performance and contribute to sustainable development.



# INSULATING NEW ZEALAND HOMES

A well insulated home provides year-round comfort; it is cooler in the summer and warmer in the winter. Around 35% of the energy used in the average New Zealand household goes towards heating. Without adequate insulation your energy spend is wasted, as heat escapes through the walls, ceilings, and floors.

## HOW INSULATION WORKS

Heat always flows from the source to surrounding cooler areas; insulation is designed to slow this heat transfer. The relative efficiency with which it does this is called the R-Value, with 'R' representing the insulation's resistance to heat flow at a given thickness. The higher the R-Value, the more effective the insulation.

A fully-insulated house needs about half the heating of an uninsulated house. So, paying a bit more for insulation when building your new home will save you money well into the future. By investing in insulation you are also reducing your carbon footprint as your home will require less energy to heat and cool.

## AN INSULATED HOME IS A HEALTHY HOME

Research studies in New Zealand have found a definite link between insulation and health. The Wellington School of Medicine and Health Sciences study (Published 1 March 2007) showed:

- A substantial drop in energy use when the houses were properly insulated.
- People in insulated houses reported their homes were 'significantly warmer' and drier.
- There was a considerable improvement in the self-reported health of those living in the insulated houses compared to those whose houses were not insulated.
- Adults and children in insulated houses reported visiting their GP less often, less hospital admissions for respiratory conditions, and significantly less reported sick days.
- People living in insulated houses reported less visible mould inside their homes.

**INSULATION CONSERVES ENERGY, INCREASES COMFORT, AND SAVES MONEY BY KEEPING HARD EARNED HEAT INSIDE YOUR HOME.**



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# IS YOUR HOME SUFFICIENTLY INSULATED?

**A properly insulated house is the first step towards a warmer, healthier, more comfortable home for you and your family. Here is a quick guide for checking whether your insulation is satisfactory.**

## CEILING INSULATION

Grab a step-ladder and have a look around your roof/attic space. Is there insulation? If not, you need to get some! If yes, let's check to make sure it is up to standard. Getting the best out of your ceiling insulation can be quite the science—especially if you have downlights—so please contact us if you are unsure.

### You will need an extra layer of insulation if:

- Insulation is 120mm thick or less
- Insulation doesn't cover the whole ceiling
- Insulation has gaps in it, or places where it is squashed or tucked in
- Insulation is old

### You will need to remove the old insulation and replace it if:

- Insulation is wet or damp in areas
- Insulation is damaged by rodents or birds

## UNDERFLOOR INSULATION

If it's possible to access your underfloor, check for insulation. Insulation will either be in-between, or stapled to, the underside of the joists. If not, you need to get some! If yes, let's check to make sure it's up to standard.

### You will need to repair or replace your insulation if:

- Insulation is loose or doesn't sit hard against the underside of the floorboards
- Insulation doesn't extend under the entire floor space
- Insulation has gaps in it or has bits missing
- Insulation is foil
- Insulation has been damaged



# WHAT INSULATION OPTIONS ARE AVAILABLE FOR EXISTING HOMES?

## CEILING INSULATION

If you have no insulation your ceiling should be your first priority, as this is where the most heat is lost. Installing ceiling insulation can save you up to \$400 a year on home heating costs, particularly in the colder regions of New Zealand. Blanket insulation (roll form) or segment (pre-cut pads) are both designed to insulate ceilings, however GreenStuf installed as a blanket covering the ceiling joists is the best option for existing homes. This will reduce heat loss through timber.

PRODUCT NAME	PRODUCT CODE	THICKNESS	ROLL WIDTH	R-VALUE	M <sup>2</sup> /PACK	ROLL/PADS
R2.9 Roll Form 4 x 580mm x 7.33l/m	PTL2958*	185mm	580mm	R2.9	17	4
R2.9 Roll Form 2 x 870mm x 9.77l/m	PTL2987	185mm	870mm	R2.9	17	2
R3.2 Roll Form 4 x 580mm x 7.33l/m	PTL3258*	190mm	580mm	R3.2	17	4
R3.2 Roll Form 2 x 870mm x 9.77l/m	PTL3287	190mm	870mm	R3.2	17	2
R3.4 Roll Form 4 x 580mm x 7.33l/m	PTL3458*	200mm	580mm	R3.4	17	4
R3.4 Roll Form 2 x 870mm x 7.47l/m	PTL3487	200mm	870mm	R3.4	13	2

\*BRANZ appraised product.

## UNDERFLOOR INSULATION

Your second priority should be underfloor. GreenStuf Underfloor is perfect for use in-between variable joist spacings. This is a common occurrence in many older New Zealand homes, and can cause alternative forms of underfloor insulation to fall out of position over time. GreenStuf Underfloor is a blanket-type insulation that is safe to touch and easy to install.

PRODUCT NAME	PRODUCT CODE	THICKNESS	ROLL WIDTH	R-VALUE	M <sup>2</sup> /PACK
R1.5 Thermal Underfloor 5 x 450mm x 8.90l/m	PUFA1545	100mm	450mm	R1.5	20
R1.5 Thermal Underfloor 4 x 500mm x 10l/m	PUFA1550	100mm	500mm	R1.5	20
R1.5 Thermal Underfloor 4 x 600mm x 8.34l/m	PUFA1560	100mm	600mm	R1.5	20
R1.5 Thermal Underfloor 3 x 650mm x 10.3l/m	PUFA1565	100mm	650mm	R1.5	20
R1.8 Thermal Underfloor 5 x 450mm 7.78l/m	PUFA1845	100mm	450mm	R1.8	17.5
R1.8 Thermal Underfloor 4 x 500mm x 8.75l/m	PUFA1850	100mm	500mm	R1.8	17.5
R1.8 Thermal Underfloor 4 x 600mm x 7.29l/m	PUFA1860	100mm	600mm	R1.8	17.5
R1.8 Thermal Underfloor 3 x 650mm x 9l/m	PUFA1865	100mm	650mm	R1.8	17.5
R2.0 Thermal Underfloor 5 x 450mm x 6.66l/m	PUFA2045P	115mm	450mm	R2.0	15
R2.0 Thermal Underfloor 4 x 500mm x 7.50l/m	PUFA2050P	115mm	500mm	R2.0	15
R2.0 Thermal Underfloor 4 x 550mm x 6.81l/m	PUFA2055P	115mm	550mm	R2.0	15
R2.0 Thermal Underfloor 4 x 600mm x 6.25l/m	PUFA2060P	115mm	600mm	R2.0	15
R2.0 Thermal Underfloor 3 x 650mm x 7.69l/m	PUFA2065P	115mm	650mm	R2.0	15
R2.6 Thermal Underfloor 4 x 500mm x 7.50m	PUFA2650	140mm	500mm	R2.6	15
R2.6 Thermal Underfloor 4 x 600mm x 6.25m	PUFA2660	140mm	600mm	R2.6	15
R2.9 Thermal Underfloor 6 x 380mm x 7.02m	PUFA2938	140mm	380mm	R2.9	16
R2.9 Thermal Underfloor 4 x 450mm x 8.89l/m	PUFA2945	140mm	450mm	R2.9	16
R2.9 Thermal Underfloor 4 x 580mm x 6.90m	PUFA2958	140mm	580mm	R2.9	16
R2.9 Thermal Underfloor 4 x 500mm x 8.50m	PUFA2950	140mm	500mm	R2.9	17
R2.9 Thermal Underfloor 3 x 600mm x 7.78m	PUFA2960	140mm	600mm	R2.9	14
R3.4 Thermal Underfloor 4 x 500mm x 5l/m	PUFA3450	140mm	500mm	R3.4	10

\*For more information on our full product range visit [greenstuf.co.nz](http://greenstuf.co.nz) or call 0800 428 839 to speak to a GreenStuf Account Manager.

# INSULATION BEST PRACTICE

## STANDARD PRACTICE



## BEST PRACTICE



# UNDERSTANDING INSULATION FAQ'S

## CAN I INSTALL WALL INSULATION IN MY EXISTING HOME?

Wall insulation is relatively difficult to install in an existing home as the wall lining or cladding needs to be removed first. Tackle this during renovations.

## HOW DO DOWNLIGHTS AFFECT INSULATION?

There are a number of different downlights available in New Zealand. There is significant fire risk associated with downlights, so careful selection of bulbs and fixtures, as well as correct installation of the light fitting and surrounding insulation, is crucial. Only IC type downlights allow the insulation to abut and cover the luminaire. CA type downlights must not be covered by insulation. Minimum insulation clearances around un-rated downlights are required for all types of insulation, including polyester and fibreglass (glass wool), to reduce over-heating and the risk of fire. Please contact the lighting manufacturer or Autex for more information on safe clearances.

## COULD MY HOT WATER CYLINDER BE COSTING ME MONEY?

GreenStuf ECO Wrap® is an insulation wrap designed for older electric hot water cylinders. Thermally efficient water heating saves energy costs, and the Energy Efficiency and Conservation Authority (EECA) estimate that wrapping an older cylinder can save you up to \$80 per year in water heating costs. If your hot water cylinder is warm to touch, it's losing energy. GreenStuf ECO Wrap® will reduce heat loss and help your hot water stay hotter for longer.

## WHAT ARE R-VALUES?

The R-Value is based on the product's ability to reduce The R-Value of insulation is the industry standard measurement of thermal resistance. The higher the R-Value the greater the performance.

## SHOULD I DOUBLE LAYER MY CEILING INSULATION?

There are several different types of ceiling insulation. Segments or Pads are the conventional format for insulation products. These are installed snug between joists. Because they don't cover the ceiling joists you lose heat through 'thermal bridging' due to your joists having a lower R-Value than insulation.

Insulation blankets can help avoid thermal bridging as they are installed over the top of the ceiling joists providing complete coverage. Blanket insulation is supplied as rolls for easy and fast installation.

The best option is a double-layer of insulation. The first layer is installed between joists and a blanket layer is installed over the top. If installed correctly, this will eliminate heat loss and ensure your home stays warm in winter and cool in summer.







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