

HIGH PERFORMANCE INSULATION SOLUTIONS FOR H1 COMPLIANCE

RESIDENTIAL

SEPTEMBER 2022

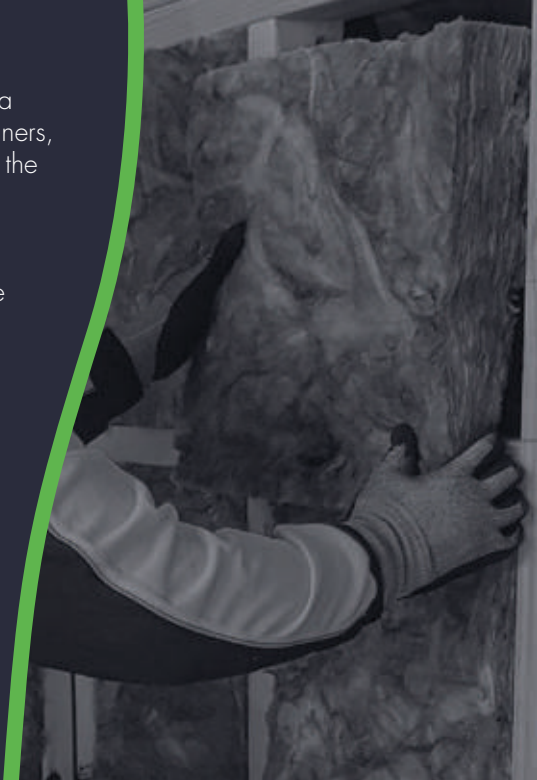


The **eco**insulation® glasswool range includes a selection of R-values to provide builders, designers, installers and DIYers the opportunity to choose the best thermal performance for their project.

ecoinsulation® glasswool insulation with DriTherm® technology is made using a silicone treatment that is added during manufacture to upgrade the moisture resistance of the glasswool insulation, and provide guaranteed water resistance for 50 years.

ecoinsulation® glasswool is made using:

- Up to 80% recycled glass
- ECOSE® Technology - binder with no added formaldehyde
- TwinTech® - dual forming technique for a smooth finish on both sides.



ENERGY EFFICIENCY (H1) REQUIREMENTS

The Ministry of Business, Innovation and Employment (MBIE) has updated the Energy Efficiency (H1) requirements for insulating new homes and commercial buildings in the New Zealand Building code.

The purpose is to reduce energy needed to heat new buildings by up to 40% and help make them warmer, drier & healthier, with less impact on the environment.

ENERGY EFFICIENCY FOR ALL HOUSING AND SMALL BUILDINGS (UNDER 300m²)

The changes will impact the design and specification of roof, wall and floor insulation. Glazing including windows, doors and skylights are also impacted.

The Building Code provides 3 methods for compliance:

- 1) **The Schedule Method** – Meet or exceed the minimum R-values provided in Table 1.
- 2) **The Calculation Method** – Design a building which has an equivalent or lower total heat loss parameter than that of a reference building where the heat loss for the reference building is calculated using the elemental R-values shown in Table 1.
- 3) **The Verification Method** – Design a building which has an equivalent or lower total energy demand than that of a reference building where the energy demand for the reference building is calculated using the elemental R-values shown in Table 1.

NEW CLIMATE ZONES

With a focus on energy efficiency, these changes are explained first by introducing new climate zones.

This will allow the insulation requirements to better reflect the different temperatures experienced in each zone. MBIE has expanded the number of climate zones used in the insulation requirements to further divide into six.

- Climate zone 1** 
- Climate zone 2** 
- Climate zone 3** 
- Climate zone 4** 
- Climate zone 5** 
- Climate zone 6** 

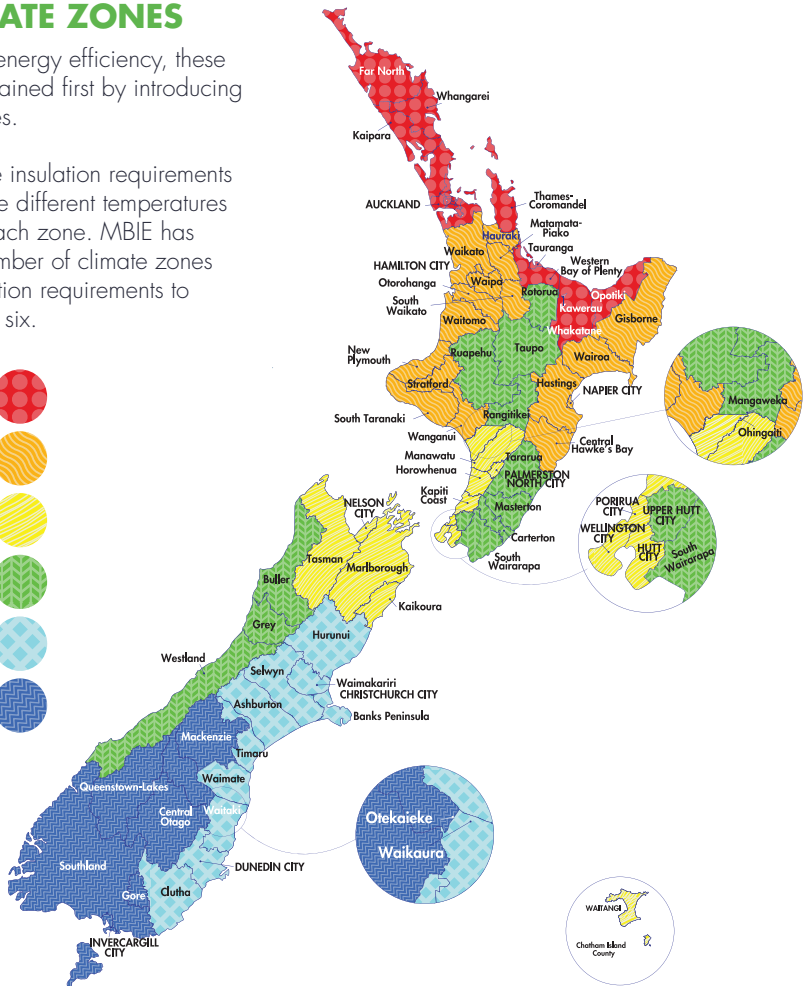








TABLE 1: The minimum thermal resistance values provided in the new 5th edition of H1/AS1.

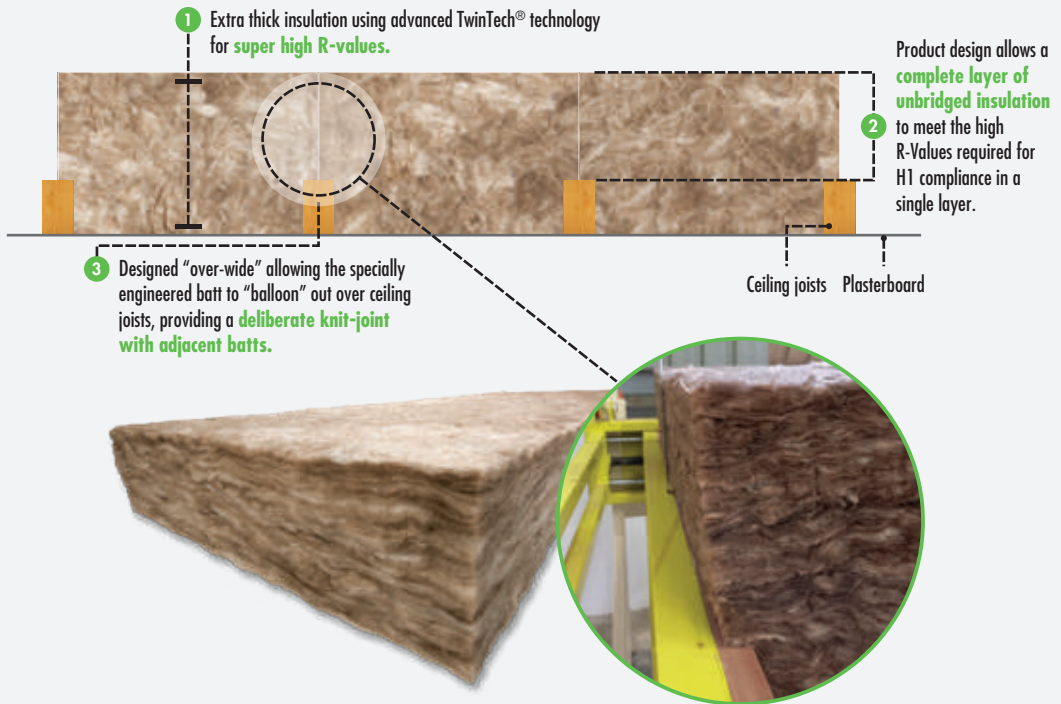
Building element	Climate zone					
						
Roof	R6.6					
Wall	R2.0					
Slab-on-ground floors	R1.5				R1.6	R1.7
Other floors	R2.5			R2.8	R3.0	
Windows and doors	R0.46*				R0.50	
Skylights	R0.46	R0.54			R0.62	

*For building consent applications submitted before 2 November 2023, the minimum construction R-values for windows and doors in climate zones 1 and 2 are permitted to be reduced to R0.37m²/K/W.

New ecoinsulation® R7.0 Ceiling batt

An easy single layer ceiling insulation solution for H1 Compliance 2022

H1 compliance doesn't need to be difficult. Installing a double layer ceiling system can be time consuming, costly and complex. That's why we are developing an advanced single layer solution to meet new H1 compliance standards.



R-Value (m ² K/W)	Thickness (mm)	Width (mm)	Length (mm)	Pieces per pack	Area per pack (m ²)
R7.0	330	460	1200	8	4.4



H1 R6.6 compliant



Lower cost than double layer



Faster and easier to install

CEILING



ecoinsulation® Thermal Ceiling insulation is designed for use in cold roof applications where pitched roofs are insulated at ceiling level. **ecoinsulation® Thermal Ceiling insulation** is non-combustible and manufactured using Knauf Insulation's unique bio-based binder, ECOSE® Technology.

ecoinsulation® Thermal Ceiling insulation with DriTherm® technology is made using a silicone treatment that is added during manufacture to upgrade the moisture resistance of the glasswool insulation, and provide guaranteed water resistance for 50 years.



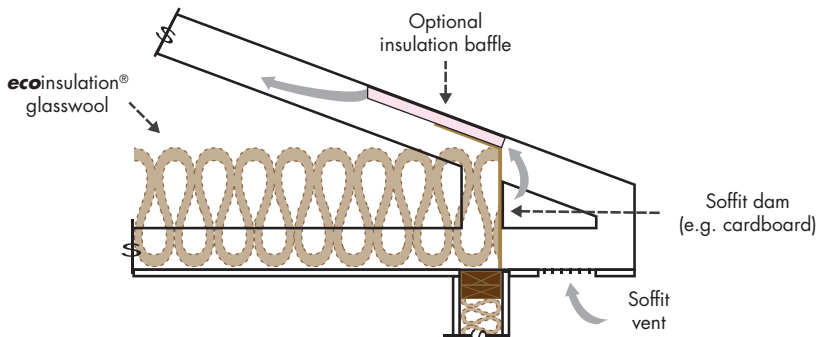
ecoinsulation® Thermal Ceiling insulation is made using:

- Up to 80% recycled glass
- ECOSE® Technology - binder with no added formaldehyde
- TwinTech® - dual forming technique for a smooth finish on both sides.



R-Value (m²K/W)	Thickness (mm)	Width (mm)	Length (mm)	Pieces per pack	Area per pack (m²)
R3.3	155	430	1160	21	10.5
R3.6	160	430	1160	20	10.0
R4.2	180	430	1160	17	8.5
R5.2	210	430 <td 1160	11	5.5	
R6.3	275	430	1160	11	5.5
NEW R7.0	330	460	1200	8	4.4

IN DETAIL: 330mm R7.0 used in a raised heel / energy truss



ROOFS (SKILLION)



ecoinsulation® Skillion batts are designed for use in warm skillion roofs where the roof is insulated at rafter level, offering a combination of excellent thermal and acoustic performance.

ecoinsulation® Skillion batts are non-combustible and manufactured using Knauf Insulation's unique bio-based binder, ECOSE® Technology.

ecoinsulation® Skillion batts with DriTherm® technology are made using a silicone treatment that is added during manufacture to upgrade the moisture resistance of the glasswool insulation, and provide guaranteed water resistance for 50 years.



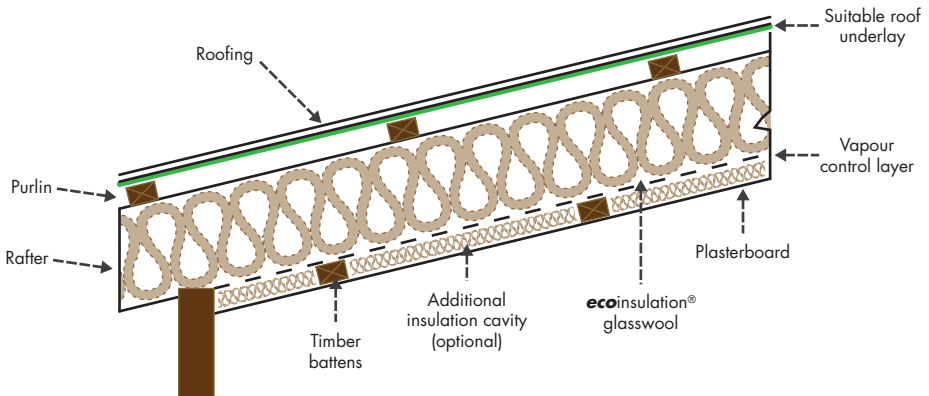
ecoinsulation® Skillion batts are made using:

- Up to 80% recycled glass
- ECOSE® Technology - binder with no added formaldehyde
- TwinTech® - dual forming technique for a smooth finish on both sides.



	R-Value (m²K/W)	Thickness (mm)	Width (mm)	Length (mm)	Pieces per pack	Area per pack (m²)
	R3.2	105	430	1160	11	5.5
NEW	R5.0	165	430	1160	6	3.0
NEW	R6.0	215	430	1160	7	3.5
NEW	R7.4	265	430	1160	6	3.0

IN DETAIL: Skillion roof detail with optional additional insulation layer beneath rafters



WALLS



ecoinsulation® Thermal and Acoustic Wall batts are designed for use in timber frame applications between studwork, offering a range of thermal performance to meet evolving construction requirements.

ecoinsulation® Thermal and Acoustic Wall batts features include:

- Up to 80% recycled glass
- Non-combustible
- DriTherm® technology - silicone treatment providing moisture resistance
- ECOSE® Technology - bio-based binder with no added formaldehyde
- TwinTech® - dual forming technique for a smooth finish on both sides.



	R-Value (m²K/W)	Thickness (mm)	Width (mm)	Length (mm)	Pieces per pack	Area per pack (m²)
NEW	R1.3	45	580	1160	24	16.1
	R2.2	90	580	1160	29	19.5
	R2.3	90	600	1160	25	17.4
	R2.4	90	570	1160	20	13.2
	R2.6	90	430	1160	15	7.5
	R2.6	90	580	1160	14	9.4
	R2.6	90	600	1160	14	9.7
	R2.8	90	430	1160	10	5.0
	R2.8	90	580	1160	10	6.7
	R3.2	140	580	1160	22	14.8
	R3.6	140	570	1160	15	9.9
	R4.1	140	580	1160	9	6.1
NEW	R4.4	140	580	1160	6	4.0

FLOORS



ecoinsulation® Floorshield underfloor batt is manufactured from durable silicone coated glasswool and is faced with an ECOSE® glass veil, providing a wind-wash barrier. The wind-wash barrier provides protection from air movement under the floor to ensure the insulation will perform as per the stated R-value.

ecoinsulation® Floorshield underfloor batt will improve the thermal comfort and energy efficiency of the building in which it has been installed thus keeping it cool in summer and warm in winter.



	R-Value (m²K/W)	Thickness (mm)	Width (mm)	Length (mm)	Pieces per pack	Area per pack (m²)
NEW	R3.0	105	420	1160	11	5.4



ecoinsulation glasswool



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