



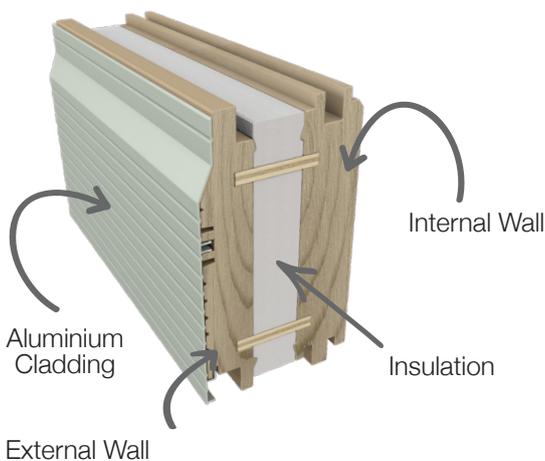
Lockwood Exterior Wall **Insulation**

Lockwood homes are warm in winter and cool in summer. The Lockwood exterior wall is a key component in the thermal performance of our homes.

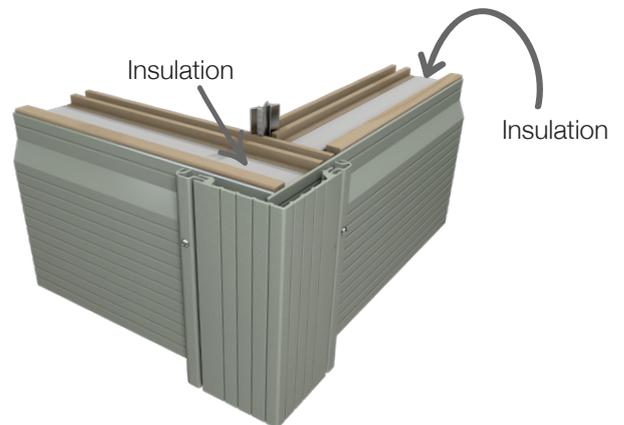
To ensure New Zealand homes are fit for purpose, they must have adequate insulation for their location. Insulation levels are typically measured in R-Values, determining a material's ability to resist the transfer of heat.

The R-Value required for exterior walls under the NZ Building code is currently R2.0. Lockwood manufactures exterior wall boards exceeding building code requirements with consistent thermal performance.

Lockwood Exterior Board



Lockwood External Corner



Consistent insulation and the natural high-performance of solid timber ensures a Lockwood home is warm, dry and comfortable all year round.

Talk to your local Lockwood Contractor about the benefits of building with Lockwood today Ph 0508 562 596 | www.lockwood.co.nz

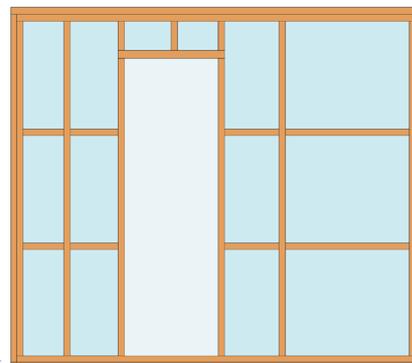
Comparing the Lockwood system with timber framed homes

Heat always takes the path of least resistance. In conventionally framed homes, this means the heat flows preferentially through the timber framing, rather than the insulation installed in the cavities between. This is called thermal bridging. A recent study by BRANZ¹ investigated thermal bridging in timber framed homes and whether it had an effect on the R-values of the walls once they were built.

The building code allows some thermal bridging elements such as lintels, stud supporting lintels and studs at corners and junctions to be excluded from insulation calculations. Excluding these elements means most timber framed houses are deemed to comply with insulation requirements.

Framed wall with allowed exclusions: Thermal Bridging Elements 23%

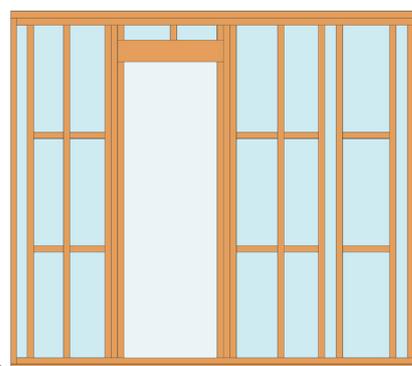
Installed Insulation	R-Value Achieved
R2.0	R1.79
R2.8	R2.0



However, if these thermal bridging elements are accounted for in 'as built' insulation calculations, most houses built in New Zealand would not meet thermal performance requirements.

A realistic framed wall as built on site: Thermal Bridging Elements 43%

Installed Insulation	R-Value Achieved
R2.0	R1.44
R2.8	R1.57

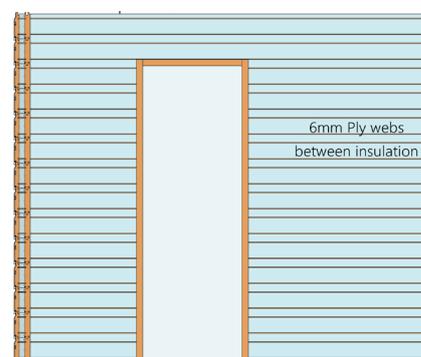


It can be difficult to properly insulate all areas of a framed house. Often there are areas that have little or no insulation installed, such as external corners or around plumbing and electrical services, leaving a clear path for heat to escape. This means most houses 'as-built' have inconsistent thermal performance.

BRANZ¹ concluded the 'as-built' R-Values of timber framed homes are between R1.4 and R1.7.

Lockwood manufactures exterior wall boards with rigid PIR foam insulation sandwiched between solid timber. There is minimal thermal bridging and there are no gaps due to plumbing, poorly installed insulation, or inaccessible areas such as corners.

Every part of the wall in a Lockwood home, including the corners, boasts a consistent 'as built' R-Value of 2.1.⁺⁺



Thermal Bridging Elements 6.2%
R-Value Achieved R2.1

¹ BRANZ External Research Report ER53 Measuring the extent of thermal bridging in external timber-framed walls in New Zealand (2020)
Read more about the BRANZ research at www.branz.co.nz/pubs/research-now/warmer-drier-healthier/warmer-drier-healthier-2/

⁺⁺Further investigation of R-Value for Lockwood 107 wall, Jeff Parker, May 2023

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