

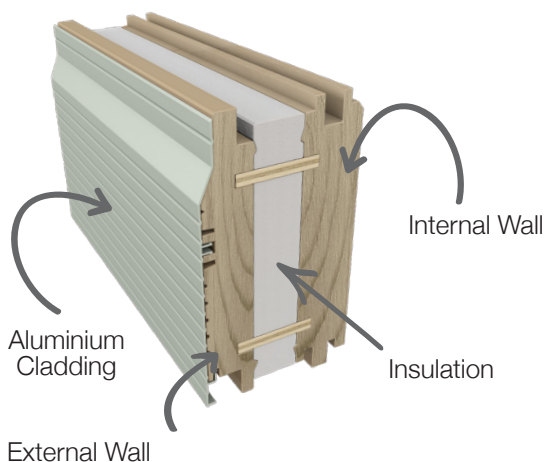


Lockwood Exterior Wall **Insulation**

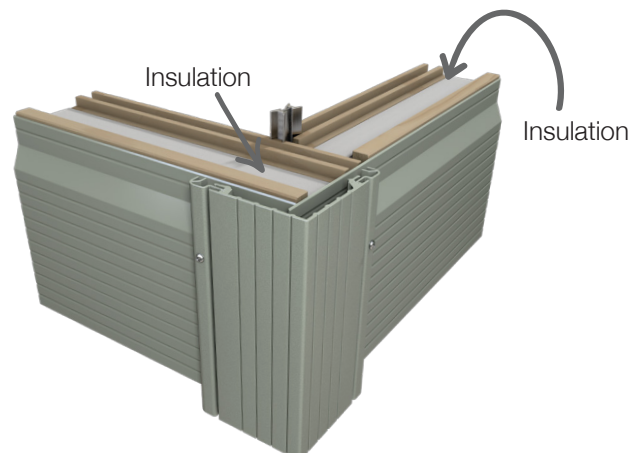
To ensure New Zealand homes are fit for purpose, they must have adequate insulation for their location. The requirements vary for different parts of the country, more insulation is needed for houses in colder climates. Insulation levels are typically measured in R-Values, determining a material's ability to resist the transfer of heat.

The Lockwood exterior board has rigid foam insulation sandwiched between solid timber. Because there is very little connection between the internal and external parts of the wall, thermal bridging is minimised. This means that every part of the wall in a Lockwood home, including the corners, boasts a consistent 'as built' R-Value of 2.1.

Lockwood Exterior Board



Lockwood External Corner



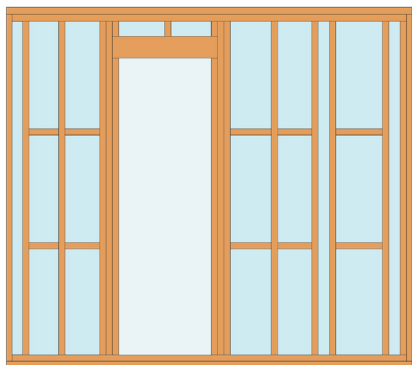
Consistent insulation and the natural high-performance of solid timber ensures a Lockwood home is warm, dry and comfortable all year round.

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.

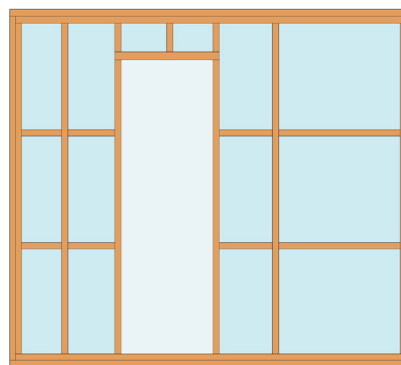
A realistic representation of a framed wall installed on site:



Timber Framing 43%

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

The building code allows some framing elements to be excluded from the calculation, shown below:



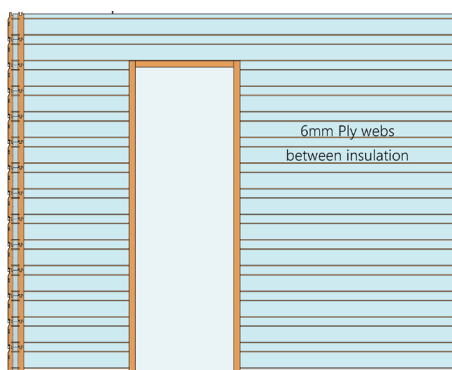
Timber Framing 23%

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

Additionally, it can be impossible to install insulation in some parts of a timber framed home as there is no access between the framing. This is often the case in external corners or where plumbing is installed, leaving a clear path for heat to escape. Thermal bridging and these poorly insulated areas have a major impact on the overall R-Value in timber framed homes. BRANZ concluded the 'as-built' R-Values of timber framed homes are between R1.4 and R1.7.

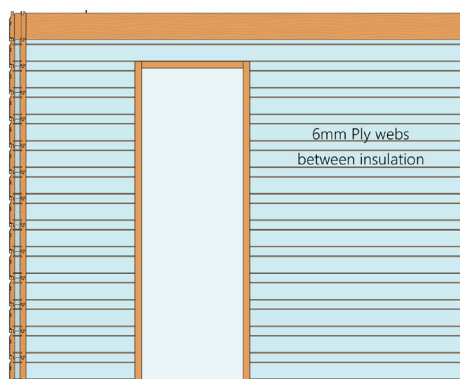
In the Lockwood system, rigid foam is sandwiched between solid timber and held in place with small ply webs. There is minimal thermal bridging, even when a solid timber lintel is used. The insulation is installed at the manufacturing stage and there are no gaps due to plumbing, poorly installed insulation, 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.**

Lockwood wall



Timber 6.2%
R-Value Achieved R2.1

Lockwood wall with solid timber lintel



Timber 12.88%
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)

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