

**Gypsum Plasterboard (Interior Use)**

Plasterboard comes in sheets made up of:

- a core of cast gypsum plaster plus fillers, and
- paper lining.

The core can be formulated for specific parts of a home (such as dry, wet, or high impact areas) or specific uses (such as fire or bracing).

Joints between the sheets are filled with a gypsum-based stopping compound.

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**Extraction and manufacture**

**Impact of extraction**

Gypsum is a mined material. Extraction may create dust, noise and a significant visual impact. There is also potential for damage to local ecosystems during extraction.

**Embodied carbon and embodied energy**

<b>Material</b>	<b>Embodied carbon kg CO<sub>2</sub>eq/kg</b>	<b>Embodied energy (total) MJ (NCV)/kg</b>
Plasterboard (GIB® standard 10 mm)	0.18	7.48
Plasterboard (GIB® standard 13 mm)	0.20	6.68
Plasterboard (GIB wideline® 10 mm)	0.18	7.48
Plasterboard (GIB wideline® 13 mm)	0.21	6.74
Plasterboard (GIB aqualine® 10 mm)	0.20	7.01
Plasterboard (GIB aqualine® 13 mm)	0.23	6.67
Plasterboard (GIB braceline® GIB noiseline® 10 mm)	0.20	6.39
Plasterboard (GIB braceline® GIB noiseline® 13 mm)	0.23	6.02
Plasterboard (GIB ultraline® 10 mm)	0.19	7.14
Plasterboard (GIB ultraline® 13 mm)	0.20	6.47
Plasterboard (GIB fyreline® 10 mm)	0.19	7.04
Plasterboard (GIB fyreline® 13 mm)	0.23	6.57
Plasterboard (GIB fyreline® 16 mm)	0.25	6.14
Plasterboard (GIB fyreline® 19 mm)	0.23	5.78
Plasterboard (GIB toughline® 13 mm)	0.39	8.96
Plasterboard (GIB superline® 13 mm)	0.37	8.80

The figures are taken from BRANZ CO<sub>2</sub>NSTRUCT v1 June 2019. You can download the data and find explanatory details at: [www.branz.co.nz/environment-zero-carbon-research/framework/branz-co2nstruct/](http://www.branz.co.nz/environment-zero-carbon-research/framework/branz-co2nstruct/)

**Sourcing**

**Material sources**

Gypsum raw material is imported in bulk from Australia.  
 Plasterboard products are made in NZ using locally made or imported paper facings. Imported plasterboard (from Australia, Thailand, Britain, or the US ) is also be available.  
 Plasterboard may incorporate some recycled gypsum.

<b>Availability</b>	Plasterboard is widely available throughout NZ.
<b>Cost</b>	Material costs are low to medium depending on the specification. Maintenance costs are low.
<b>Transport to site</b>	Plasterboard is heavy to transport in bulk.
<b>Construction/installation</b>	
<b>Health and safety during construction/installation</b>	Direct, prolonged or repeated gypsum contact with the skin may cause irritation. Dust masks are recommended when sanding gypsum based compounds.
<b>Ease of construction/installation</b>	Plasterboard has to be attached to a frame. Once delivered, materials can be handled by site labour.
<b>Adaptability</b>	Plasterboard is relatively easy to replace.
<b>Performance</b>	
<b>Health and safety during life of building</b>	Plasterboard will support toxic mould growth when wet (see below).
<b>Structural capability</b>	Plasterboard can be used as a structural component (for bracing, diaphragms).
<b>Expected durability</b> (assuming correct installation and maintenance)	50+ years
<b>Maintenance rating</b>	Plasterboard is relatively low maintenance once installed (redecorating usually as a result of desire to change décor rather than loss of serviceability). It can be damaged by impact.
<b>Moisture resistance</b>	Plasterboard has good moisture resistance if the correct product is used in wet areas.
<b>Rot, mould and corrosion</b>	Plasterboard should be kept dry in service. Moulds such as the toxic stachybotrys will form on wet paper linings.
<b>Thermal performance</b>	Plasterboard has a low R-value and provided little thermal mass.
<b>Sound insulation</b>	Plasterboard is suitable for use as a component of sound rated construction. Specific construction requirements must follow the manufacturer's requirements to achieve the specified rating.
<b>Fire performance</b>	Plasterboard is suitable for use as a component of fire rated construction. Specific construction requirements must follow the manufacturer's requirements to achieve the specified rating.
<b>Waste disposal/recycling/re-use</b>	
<b>Re-use</b>	Plasterboard can be re-used if sheets can be removed without damage.
<b>Recycling</b>	Plasterboard can be recycled.
<b>Waste disposal</b>	Plasterboard is biodegradable in contact with soil. It releases leachate and gas during decomposition. However, it is not defined as hazardous waste. Disposal may be permitted in some clean fill sites.