

kg Glasswool insulation

Glasswool or fibreglass insulation contains micro fibres of glass that trap pockets of air within. This results in a low density and low thermal conductivity (0.04 W/(m·K)), which is ideal for insulation materials.

Glasswool is made by mixing sand and recycled glass and melting them at 1 450°C to obtain glass. This glass is turned into fibres using a process similar to making cotton candy, by forcing it through a mesh and cooling it by contact with air. A binder is added beforehand to ensure cohesion and mechanical strength. The resulting fibre is heated at 200°C to polymerise the resin. The resulting insulation is calendered, before being cut and packed in rolls or panels.

Glasswool insulation is widely used in the construction industry as an insulation material.

Category *Insulation*

Type *Glass*

Functional unit *kg*

Specific heat *840 J/(kg·K)*

Density *25 kg/m³*

Common uses
Insulation

Process name
*Glass wool mat, at plant/CH U/
AusSD U*

Input-output sector
*Other Non-Metallic Mineral
Product Manufacturing*

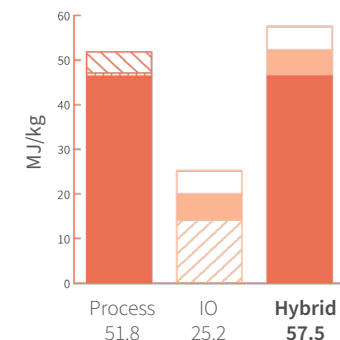
Further information
doi.org/10.26188/5da55494afb75

Material variations

	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions (kgCO ₂ e/unit)
Glasswool insulation	kg	57.5	40.7	4
Glasswool insulation - 80 mm (R2)	m ²	115	81.4	8
Glasswool insulation - 100 mm (R2.5)	m ²	144	102	10.1

TOP THREE INPUTS

- 13.0%** Natural gas, burned in industrial furnace low-NOx >100kW/RER U/AusSD U
- 5.9%** Formaldehyde, production mix, at plant/RER U/AusSD U
- 5.3%** Phenol, at plant/RER U/AusSD U

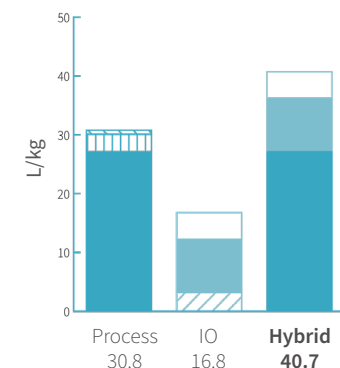


ENERGY

57.5
MJ/kg

TOP THREE INPUTS

- 18.4%** Silicone product, at plant/RER U/AusSD U
- 12.0%** Phenol, at plant/RER U/AusSD U
- 6.1%** Soda, powder, at plant/RER U/AusSD U

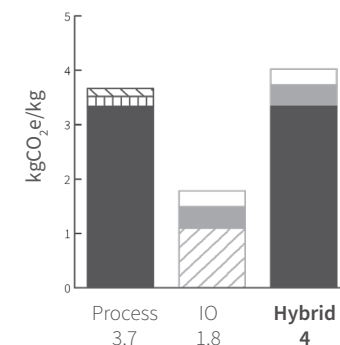


WATER

40.7
L/kg

TOP THREE INPUTS

- 12.0%** Natural gas, burned in industrial furnace low-NOx >100kW/RER U/AusSD U
- 3.0%** Phenol, at plant/RER U/AusSD U
- 2.7%** Urea, as N, at regional storehouse/RER U/AusSD U



GREENHOUSE GAS EMISSIONS

4.0
kgCO₂e/kg