

## kg Aluminium bar

Aluminium is a ductile non-ferrous metal. It is a lightweight metal with an average density of 2.7 t/m<sup>3</sup>. It is durable, corrosion resistant, a good reflector of both visible and infrared radiation, and highly recyclable. Aluminium alloys are used in the construction industry as raw aluminium typically lacks the strength required for most of its applications.

Aluminium is extracted from bauxite, its common ore, through an extensive process. Bauxite is converted to aluminium oxide through the Bayer process. Aluminium oxide (or Alumina) is then converted to aluminium billets by the electricity-intensive Hall-Héroult process, made of 99% aluminium, which can be further purified if needed. Aluminium billets are then thermoformed into the relevant shape. Powder coating provides additional durability, custom colour and improved performance.

Aluminium is commonly used as a construction material, notably as cladding, structural and window framing, and as a thermal reflector. Aluminium bars are typically extruded and can be used as a finishing product (flat bars) and as ventilation grilles.

<b>Category</b>	Metals
<b>Type</b>	Aluminium
<b>Functional unit</b>	kg
<b>Specific heat</b>	910 J/(kg·K)
<b>Density</b>	2 712 kg/m <sup>3</sup>

**Common uses**  
*Finishes, ventilation grilles*

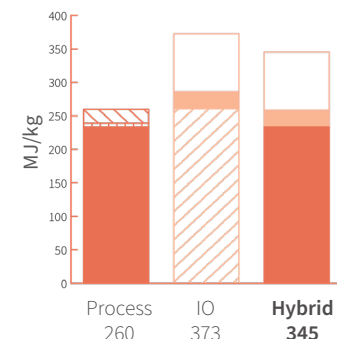
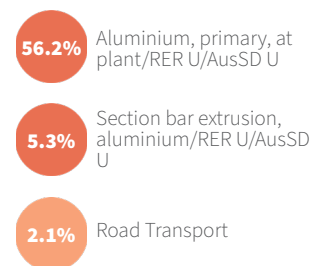
**Process name**  
*Aluminium section bar (custom)*

**Input-output sector**  
*Basic Non-Ferrous Metal Manufacturing*

**Further information**  
[doi.org/10.26188/5da5519635948](https://doi.org/10.26188/5da5519635948)

Material variations	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions (kgCO <sub>2</sub> e/unit)
Aluminium bar	kg	345	219	29.6
Aluminium bar flat - 12 mm × 3mm	m	33.7	21.3	2.9
Aluminium bar flat - 40 mm × 3mm	m	112	71.2	9.6
Aluminium bar flat - 100 mm × 6mm	m	562	356	48.2
Aluminium bar round - 16 mm dia.	m	188	119	16.2
Aluminium bar round - 50 mm dia.	m	1 838	1 164	158
Aluminium bar round - 150 mm dia.	m	16 542	10 479	1 420

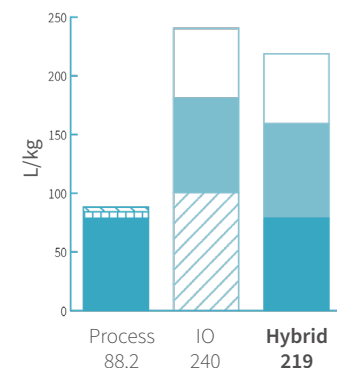
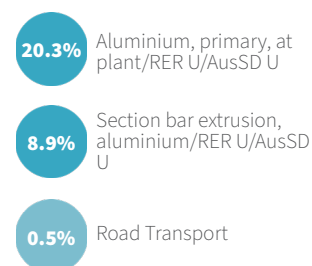
### TOP THREE INPUTS



### ENERGY

**345**  
MJ/kg

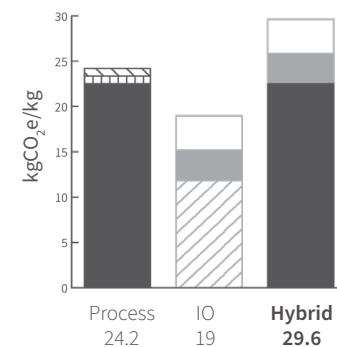
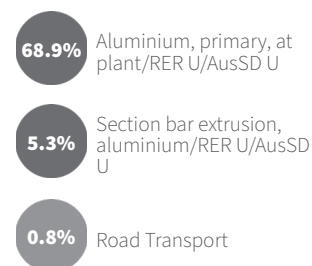
### TOP THREE INPUTS



### WATER

**219**  
L/kg

### TOP THREE INPUTS



### GREENHOUSE GAS EMISSIONS

**29.6**  
kgCO<sub>2</sub>e/kg