kg Steel pipe

Steel is a ferrous metal and is an alloy of iron and carbon, as well as potential other elements. It has a very high tensile strength. Steel has been used in the construction industry for over a century.

The core material for making steel is iron, which is found in iron ore. Iron is extracted from iron ore in blast furnaces through the smelting process, while controlling for the content of carbon. The molten steel is usually further processed before being extruded into circular pipes.

Steel pipes are often used in pile foundations, plumbing and as columns (usually filled with concrete).

Category *Metals*

Type *Steel*

Functional unit *kg*

Specific heat *490 J/(kg·K)*

Density *7 850 kg/m³*

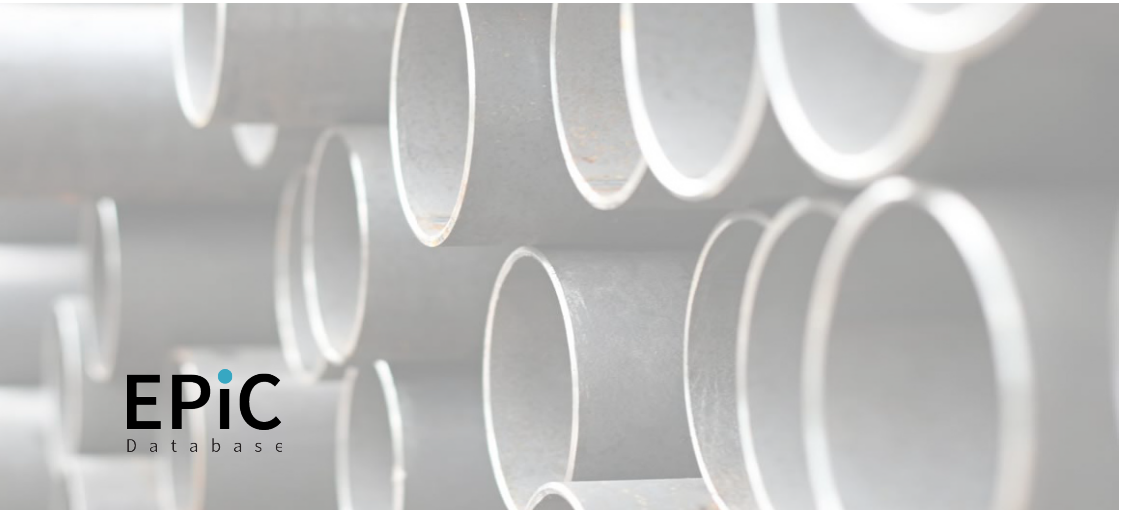
Common uses
Piles, pipes, structural profiles

Process name
Steel pipe (custom)

Input-output sector
Iron and Steel Manufacturing

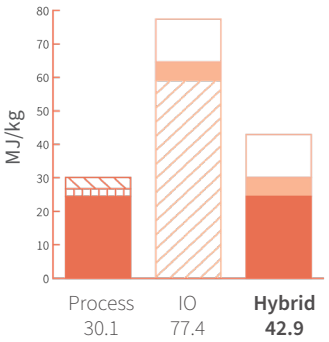
Further information
doi.org/10.26188/5da5583906307

Material variations	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions ($kgCO_2e$/unit)
Steel pipe	*kg*	*42.9*	*78.1*	*3.5*
Steel pipe - 21.3 mm outer dia., 2.6 mm thick	m	51.4	93.7	4.2
Steel pipe - 42.4 mm outer dia., 2.6 mm thick	m	109	199	9.0
Steel pipe - 88.9 mm outer dia., 4 mm thick	m	359	654	29.6
Steel pipe - 165.1 mm outer dia., 4.9 mm thick	m	831	1 512	68.5



TOP THREE INPUTS

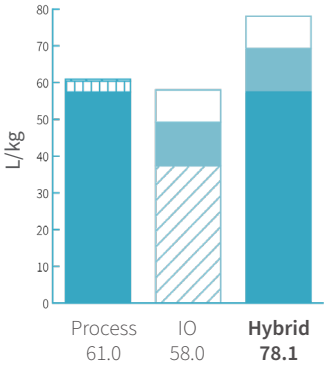
- 49.5% Steel, converter, low-alloyed, at plant/RER U/ AusSD U
- 4.6% Road Transport
- 2.0% Non Ferrous Metal Ore Mining



ENERGY
42.9 MJ/kg

TOP THREE INPUTS

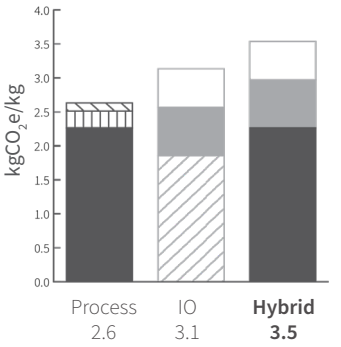
- 20.2% Steel, converter, low-alloyed, at plant/RER U/ AusSD U
- 3.0% Non Ferrous Metal Ore Mining
- 1.7% Coal mining



WATER
78.1 L/kg

TOP THREE INPUTS

- 50.8% Steel, converter, low-alloyed, at plant/RER U/ AusSD U
- 5.3% Coal mining
- 2.8% Non Ferrous Metal Ore Mining



GREENHOUSE GAS EMISSIONS
3.5 $kgCO_2e$/kg