

# m<sup>3</sup> Concrete 50 MPa

Concrete is a composite material combining sand or other fine aggregates, coarse aggregates, a binder and water. Portland cement is the most commonly used binder, however other binders, such as polymers, may also be used. Supplementary Cementitious Materials (SCM) such as Fly Ash and Ground, Granulated Blast Furnace Slag (GGBFS), are also commonly used as a part replacement for Portland cement. Additives, such as plasticisers can be added to the mix to control concrete properties, such as workability. Concrete is usually combined with steel reinforcement to improve tensile strength.

Concrete is one of the most commonly used construction materials. It is highly durable and is thus typically used for structural elements in buildings and infrastructure projects. Concrete can be manufactured to meet a variety of strength grades. Concrete 50 MPa is commonly used in commercial and civil construction where high strength and durability are required. The mix will generally have a lower water to cement ratio than standard concrete.

**Category** Concrete and Plaster Products  
**Type** Concrete  
**Functional unit** m<sup>3</sup>  
**Specific heat** 880 J/(kg·K)  
**Density** 2 332 kg/m<sup>3</sup>

**Common uses**  
*Structural beams, structural columns, in situ loadbearing walls, structural piling*

**Process name**  
*Concrete 50 MPa, at batching plant/AU U*

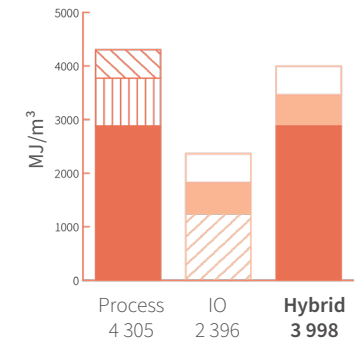
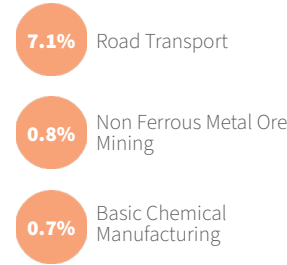
**Input-output sector**  
*Cement, Lime and Ready-Mixed Concrete Manufacturing*

**Further information**  
[doi.org/10.26188/5da5514c0eea5](https://doi.org/10.26188/5da5514c0eea5)

**Material variations**

Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions (kgCO <sub>2</sub> e/unit)
Concrete 50 MPa	m <sup>3</sup> 3 998	4 365	600
Concrete 50 MPa - 30% fly ash	m <sup>3</sup> 3 634	4 246	467
Concrete 50 MPa - 30% GGBFS	m <sup>3</sup> 3 958	4 325	492

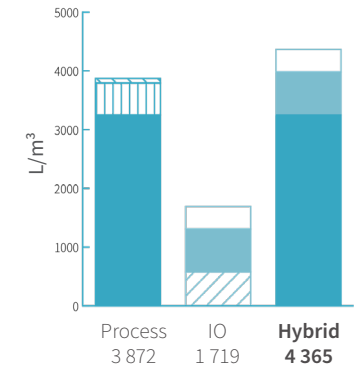
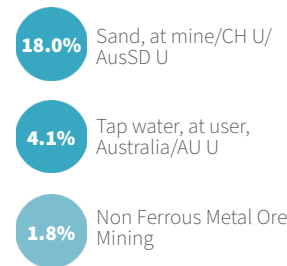
**TOP THREE INPUTS**



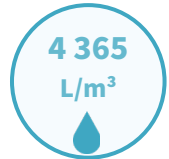
**ENERGY**



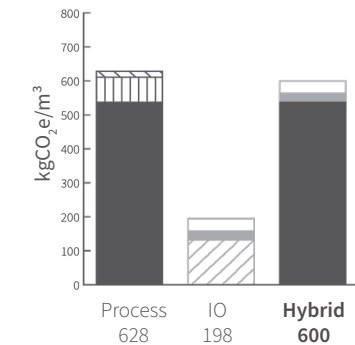
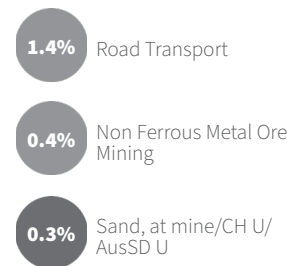
**TOP THREE INPUTS**



**WATER**



**TOP THREE INPUTS**



**GREENHOUSE GAS EMISSIONS**

