

Life Cycle Assessment: Results

The following supplementary LCA results are to be read alongside the complete ROCKWOOL® Environmental Product Declaration, attached.

ROCKWOOL® stone wool product:

FireBarrier

The results are for: 1 m² of product,
Thermal resistance as stated in product data sheet.

with a thickness of 50 mm.

Description of the system boundaries (x=included, MNA = Module not assessed)

Production stage			Construction stage		Use stage							End-of-life stage				Benefits and loads beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling - potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
x	x	x	x	x	x	MNA	MNA	MNA	MNA	MNA	MNA	x	x	x	x	x

Limitations

Conservative choices are made in the LCA as described in the ROCKWOOL Group LCA rules. Therefore, the results can be considered to be conservative and worst case.

Environmental impact

	Production stage	Construction stage			Use stage	End-of-life stage		
Parameter	A1-3	A4	A5	B1	C2	C4	D	
Global warming potential (GWP) kg CO ₂ eqv	4.5E+00	1.0E+00	1.0E+00	0	1.7E-02	6.9E-02	-2.5E-01	
The global warming potential of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.								
Ozone depletion potential (ODP) kg CFC11 eqv	1.3E-08	1.6E-16	1.6E-09	0	2.7E-18	3.8E-16	-1.4E-14	
Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons), which break down when they reach the stratosphere and then catalytically destroy ozone molecules.								
Acidification potential (AP) kg SO ₂ eqv	1.9E-02	7.9E-04	5.5E-04	0	1.4E-05	4.5E-04	-8.4E-04	
Acid depositions have negative impacts on natural ecosystems and the man-made environment incl, buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.								
Eutrophication potential (EP) kg PO ₄ ³⁻ eqv	4.6E-03	1.6E-04	1.9E-04	0	3.0E-06	5.0E-05	-1.1E-04	
Excessive enrichment of waters and continental surfaces with nutrients, and the associated adverse biological effects.								
Photochemical ozone creation (POCP) kg Ethene eqv	9.6E-04	-3.4E-06	5.3E-05	5.4E-10	-5.5E-07	3.3E-05	-9.5E-05	
Chemical reactions brought about by the light energy of the sun. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.								
Abiotic depletion potential for non-fossil resources (ADP-elements) kg Sb eqv	1.9E-06	8.3E-08	2.1E-08	0	1.4E-09	2.7E-08	-5.6E-08	
Abiotic depletion potential for fossil resources (ADP-fossils) MJ	5.3E+01	1.4E+01	1.8E+00	0	2.3E-01	9.9E-01	-6.2E+00	
Consumption of non-renewable resources, thereby lowering their availability for future generations.								

Resource use

Parameter	Production stage	Construction stage			Use stage	End-of-life stage		D
	A1-3	A4	A5	B1	C2	C4		
Use of renewable primary energy excluding renewable primary energy resources used as raw materials MJ/FU	1.8E+01	7.6E+00	9.4E+00	0	1.3E-02	1.3E-01	-3.4E+00	
Use of renewable primary energy resources used as raw materials MJ/FU	1.1E+01	0.0E+00	-8.7E+00	0	0.0E+00	0.0E+00	0.0E+00	
Total use of renewable primary energy resources MJ/FU	2.9E+01	7.6E-01	6.7E-01	0	1.3E-02	1.3E-01	-3.4E+00	
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials MJ/FU	4.7E+01	1.4E+01	2.0E+00	0	2.3E-01	1.0E+00	-6.5E+00	
Use of non-renewable primary energy resources used as raw materials MJ/FU	7.3E+00	0.0E+00	-3.4E-02	0	0.0E+00	0.0E+00	0.0E+00	
Total use of non-renewable primary energy resources	5.4E+01	1.4E+01	1.9E+00	0	2.3E-01	1.0E+00	-6.5E+00	
Use of secondary materials kg/FU	0.0E+00	n/a	0.0E+00	n/a	n/a	n/a	n/a	
Use of renewable secondary fuels MJ/FU	--*	--*	--*	--*	--*	--*	--*	
Use of non-renewable secondary fuels MJ/FU	--*	--*	--*	--*	--*	--*	--*	
Net use of fresh water m ³ /FU	1.7E-02	8.9E-04	2.5E-03	0	1.5E-05	2.5E-04	-2.3E-03	

* There are no renewable and no non-renewable secondary fuels used in A3. The minor use of secondary fuels as part of the background datasets is not accounted for.

Waste categories

