

Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.64



Product: 3061873 - PE80 Geothermal Pipe BK 40 PN6 L=100
Unit: 1 piece
Manufacturer: Wavin - SE - Eskilstuna

Ground heating pipes produced in PE80 (PEM), and according to EN 12201. The pipes are marked with the Nordic Poly Mark and DS approved.

LCA standard: EN15804+A2 (2019)
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified: Yes
Issue date: 20-06-2022
End of validity: 20-06-2027
Verifier: Harry van Ewijk - SGS Search



This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - SE - Eskilstuna (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage	Use stage	End-of-Life stage
A1 Raw material supply A2 Transport A3 Manufacturing	B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use	C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal
Construction process stage		Benefits and loads beyond the system boundaries
A4 Transport gate to site A5 Assembly / Construction installation process		D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.95E+1	5.49E+0	2.02E+0	6.70E+1	7.64E-1	2.54E+1	4.23E-1	-3.86E+1	5.50E+1
GWP-f	kg CO2 eq	5.92E+1	5.49E+0	1.46E+0	6.62E+1	7.63E-1	2.54E+1	4.23E-1	-3.84E+1	5.43E+1
GWP-b	kg CO2 eq	2.80E-1	2.49E-3	3.85E-1	6.67E-1	4.64E-4	-3.05E-2	3.18E-4	-1.45E-1	4.93E-1
GWP-luluc	kg CO2 eq	1.79E-2	2.03E-3	1.70E-1	1.90E-1	2.70E-4	4.29E-3	6.07E-6	-8.69E-3	1.86E-1
ODP	kg CFC11 eq	3.21E-6	1.21E-6	1.66E-7	4.59E-6	1.76E-7	5.60E-7	9.02E-9	-1.85E-6	3.48E-6
AP	mol H+ eq	2.23E-1	3.34E-2	1.24E-2	2.69E-1	4.35E-3	2.36E-2	2.15E-4	-1.06E-1	1.91E-1
EP-fw	kg P eq	9.78E-4	5.50E-5	2.70E-5	1.06E-3	6.28E-6	1.24E-4	2.80E-7	-4.76E-4	7.14E-4
EP-m	kg N eq	3.72E-2	1.16E-2	3.67E-3	5.24E-2	1.56E-3	6.86E-3	1.52E-4	-1.94E-2	4.16E-2
EP-T	mol N eq	4.19E-1	1.28E-1	4.03E-2	5.87E-1	1.71E-2	7.55E-2	8.74E-4	-2.16E-1	4.65E-1
POCP	kg NMVOC eq	1.97E-1	3.63E-2	1.12E-2	2.45E-1	4.90E-3	2.39E-2	3.43E-4	-1.00E-1	1.73E-1
ADP-mm	kg Sb eq	7.27E-4	1.38E-4	4.40E-5	9.09E-4	1.98E-5	9.30E-5	2.16E-7	-2.47E-4	7.75E-4
ADP-f	MJ	2.08E+3	8.26E+1	1.45E+1	2.18E+3	1.17E+1	7.45E+1	6.59E-1	-1.15E+3	1.12E+3
WDP	m3 depriv.	4.51E+1	2.94E-1	9.36E+0	5.48E+1	3.60E-2	1.46E+0	3.02E-3	-2.23E+1	3.40E+1
PM	disease inc.	2.13E-6	4.89E-7	2.09E-7	2.82E-6	6.89E-8	3.87E-7	4.53E-9	-8.37E-7	2.45E-6
IR	kBq U-235 eq	1.80E+0	3.46E-1	4.32E-2	2.19E+0	5.12E-2	2.24E-1	3.07E-3	-6.92E-1	1.77E+0
ETP-fw	CTUe	3.88E+2	7.35E+1	4.05E+1	5.02E+2	9.52E+0	8.49E+1	5.81E-1	-1.67E+2	4.30E+2
HTP-c	CTUh	1.65E-8	2.40E-9	1.60E-9	2.05E-8	3.39E-10	1.01E-8	1.60E-11	-7.93E-9	2.30E-8
HTP-nc	CTUh	3.78E-7	8.02E-8	4.36E-8	5.02E-7	1.13E-8	1.27E-7	3.69E-10	-1.77E-7	4.64E-7
SQP	Pt	9.13E+1	7.11E+1	1.91E+0	1.64E+2	1.00E+1	5.95E+1	1.69E+0	-3.64E+1	1.99E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.39E+1	1.03E+0	9.16E+1	1.27E+2	1.68E-1	3.67E+0	2.61E-2	-1.66E+1	1.14E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.39E+1	1.03E+0	9.16E+1	1.27E+2	1.68E-1	3.67E+0	2.61E-2	-1.66E+1	1.14E+2
PENRE	MJ	2.23E+3	8.77E+1	1.54E+1	2.34E+3	1.24E+1	7.94E+1	6.99E-1	-1.24E+3	1.19E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.23E+3	8.77E+1	1.54E+1	2.34E+3	1.24E+1	7.94E+1	6.99E-1	-1.24E+3	1.19E+3
PET	MJ	2.27E+3	8.87E+1	1.07E+2	2.46E+3	1.26E+1	8.30E+1	7.25E-1	-1.26E+3	1.30E+3
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	6.89E-1	1.00E-2	2.22E-1	9.22E-1	1.33E-3	4.31E-2	8.14E-4	-3.40E-1	6.27E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.13E-4	2.08E-4	2.21E-5	5.43E-4	3.00E-5	1.21E-4	7.91E-7	-3.41E-4	3.55E-4
NHWD	kg	2.23E+0	5.19E+0	6.78E-2	7.49E+0	7.26E-1	3.68E+0	2.90E+0	-9.34E-1	1.39E+1
RWD	kg	1.96E-3	5.43E-4	6.15E-5	2.56E-3	7.97E-5	2.84E-4	4.31E-6	-6.43E-4	2.29E-3
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0



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