

Environmental Profile

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

Ecochain v3.5.64



Product: 3061871 - PE80 Geothermal Pipe BK 40 PN6,3 L=400
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	2.37E+2	2.21E+1	8.29E+0	2.67E+2	3.08E+0	1.01E+2	1.70E+0	-1.55E+2	2.18E+2
GWP-f	kg CO2 eq	2.36E+2	2.21E+1	6.01E+0	2.64E+2	3.07E+0	1.01E+2	1.70E+0	-1.54E+2	2.15E+2
GWP-b	kg CO2 eq	1.16E+0	1.00E-2	1.58E+0	2.75E+0	1.87E-3	-1.23E-1	1.28E-3	-5.83E-1	2.05E+0
GWP-luluc	kg CO2 eq	7.14E-2	8.15E-3	6.99E-1	7.79E-1	1.09E-3	1.73E-2	2.44E-5	-3.50E-2	7.62E-1
ODP	kg CFC11 eq	1.29E-5	4.87E-6	6.81E-7	1.85E-5	7.09E-7	2.25E-6	3.63E-8	-7.40E-6	1.41E-5
AP	mol H+ eq	8.87E-1	1.35E-1	5.09E-2	1.07E+0	1.75E-2	9.46E-2	8.67E-4	-4.26E-1	7.59E-1
EP-fw	kg P eq	3.92E-3	2.21E-4	1.11E-4	4.25E-3	2.53E-5	4.98E-4	1.13E-6	-1.92E-3	2.86E-3
EP-m	kg N eq	1.48E-1	4.66E-2	1.51E-2	2.10E-1	6.27E-3	2.75E-2	6.13E-4	-7.79E-2	1.66E-1
EP-T	mol N eq	1.67E+0	5.14E-1	1.66E-1	2.35E+0	6.91E-2	3.03E-1	3.52E-3	-8.66E-1	1.86E+0
POCP	kg NMVOC eq	7.86E-1	1.46E-1	4.60E-2	9.79E-1	1.97E-2	9.58E-2	1.38E-3	-4.04E-1	6.92E-1
ADP-mm	kg Sb eq	2.94E-3	5.55E-4	1.81E-4	3.67E-3	7.95E-5	3.74E-4	8.70E-7	-9.93E-4	3.14E-3
ADP-f	MJ	8.34E+3	3.32E+2	5.97E+1	8.73E+3	4.72E+1	3.00E+2	2.65E+0	-4.61E+3	4.46E+3
WDP	m3 depriv.	1.80E+2	1.18E+0	3.85E+1	2.20E+2	1.45E-1	5.89E+0	1.22E-2	-8.96E+1	1.36E+2
PM	disease inc.	8.47E-6	1.97E-6	8.59E-7	1.13E-5	2.78E-7	1.56E-6	1.82E-8	-3.37E-6	9.78E-6
IR	kBq U-235 eq	7.21E+0	1.39E+0	1.78E-1	8.78E+0	2.06E-1	9.03E-1	1.24E-2	-2.78E+0	7.12E+0
ETP-fw	CTUe	1.54E+3	2.96E+2	1.67E+2	2.01E+3	3.83E+1	3.40E+2	2.34E+0	-6.70E+2	1.72E+3
HTP-c	CTUh	6.60E-8	9.65E-9	6.58E-9	8.22E-8	1.36E-9	4.04E-8	6.44E-11	-3.19E-8	9.22E-8
HTP-nc	CTUh	1.51E-6	3.23E-7	1.79E-7	2.02E-6	4.57E-8	5.11E-7	1.49E-9	-7.13E-7	1.86E-6
SQP	Pt	3.63E+2	2.86E+2	7.86E+0	6.57E+2	4.04E+1	2.39E+2	6.81E+0	-1.46E+2	7.97E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.35E+2	4.14E+0	3.77E+2	5.16E+2	6.77E-1	1.48E+1	1.05E-1	-6.67E+1	4.65E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.35E+2	4.14E+0	3.77E+2	5.16E+2	6.77E-1	1.48E+1	1.05E-1	-6.67E+1	4.65E+2
PENRE	MJ	8.94E+3	3.53E+2	6.34E+1	9.36E+3	5.01E+1	3.19E+2	2.82E+0	-4.98E+3	4.75E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.94E+3	3.53E+2	6.34E+1	9.36E+3	5.01E+1	3.19E+2	2.82E+0	-4.98E+3	4.75E+3
PET	MJ	9.08E+3	3.57E+2	4.40E+2	9.87E+3	5.08E+1	3.34E+2	2.92E+0	-5.04E+3	5.22E+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	2.73E+0	4.03E-2	9.15E-1	3.69E+0	5.34E-3	1.73E-1	3.28E-3	-1.37E+0	2.50E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.26E-3	8.38E-4	9.10E-5	2.19E-3	1.21E-4	4.88E-4	3.19E-6	-1.36E-3	1.44E-3
NHWD	kg	8.94E+0	2.09E+1	2.79E-1	3.01E+1	2.93E+0	1.47E+1	1.17E+1	-3.76E+0	5.57E+1
RWD	kg	7.87E-3	2.18E-3	2.53E-4	1.03E-2	3.21E-4	1.14E-3	1.74E-5	-2.59E-3	9.20E-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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