Environmental Profile

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

Ecochain v3.5.64

Product:	3015517 - PE100 Pressure Pipe BK 450x40.9 L=12
Unit:	1 piece
Manufacturer:	Wavin - DE - Westeregeln - verified
Address:	Borrweg 10 39448 Börde-Hakel Germany
Contact:	https://www.wavin.com/en-en

PE pressure pipe that offers the right solution for every part of the main network in your sewerage system.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	11-08-2022
End of validity:	11-08-2027
Verifier:	Martijn van Hövell - 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 - DE - Westeregeln - verified (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

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

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]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.27E+3	4.05E+1	2.76E+1	1.34E+3	1.67E+1	5.43E+2	9.24E+0	-8.37E+2	1.07E+3
GWP-f	kg CO2 eq	1.27E+3	4.04E+1	2.25E+1	1.33E+3	1.67E+1	5.43E+2	9.24E+0	-8.34E+2	1.06E+3
GWP-b	kg CO2 eq	6.18E+0	1.87E-2	2.41E+0	8.61E+0	1.01E-2	-6.43E-1	6.94E-3	-3.16E+0	4.83E+0
GWP-luluc	kg CO2 eq	3.78E-1	1.48E-2	2.72E+0	3.12E+0	5.90E-3	9.37E-2	1.33E-4	-1.90E-1	3.03E+0
ODP	kg CFC11 eq	6.94E-5	8.93E-6	2.87E-6	8.12E-5	3.84E-6	1.22E-5	1.97E-7	-4.00E-5	5.74E-5
AP	mol H+ eq	4.72E+0	2.35E-1	1.35E-1	5.09E+0	9.50E-2	5.13E-1	4.70E-3	-2.31E+0	3.40E+0
EP-fw	kg P eq	2.09E-2	4.08E-4	5.15E-4	2.18E-2	1.37E-4	2.70E-3	6.11E-6	-1.04E-2	1.43E-2
EP-m	kg N eq	7.90E-1	8.27E-2	2.70E-2	9.00E-1	3.40E-2	1.49E-1	3.33E-3	-4.22E-1	6.64E-1
EP-T	mol N eq	8.80E+0	9.11E-1	2.74E-1	9.99E+0	3.75E-1	1.64E+0	1.91E-2	-4.69E+0	7.33E+0
POCP	kg NMVOC eq	4.22E+0	2.60E-1	7.89E-2	4.56E+0	1.07E-1	5.19E-1	7.49E-3	-2.19E+0	3.00E+0
ADP-mm	kg Sb eq	1.14E-2	1.02E-3	6.90E-4	1.31E-2	4.31E-4	2.03E-3	4.72E-6	-5.39E-3	1.02E-2
ADP-f	MJ	4.50E+4	6.10E+2	2.62E+2	4.59E+4	2.56E+2	1.63E+3	1.44E+1	-2.50E+4	2.28E+4
WDP	m3 depriv.	9.70E+2	2.18E+0	1.57E+2	1.13E+3	7.86E-1	3.19E+1	6.59E-2	-4.86E+2	6.76E+2
PM	disease inc.	4.50E-5	3.63E-6	1.18E-6	4.98E-5	1.51E-6	8.43E-6	9.89E-8	-1.83E-5	4.16E-5
IR	kBq U-235 eq	3.88E+1	2.56E+0	6.84E-1	4.21E+1	1.12E+0	4.90E+0	6.71E-2	-1.51E+1	3.31E+1
ETP-fw	CTUe	8.09E+3	5.44E+2	6.63E+2	9.30E+3	2.08E+2	1.84E+3	1.27E+1	-3.63E+3	7.73E+3
HTP-c	CTUh	3.31E-7	1.76E-8	2.47E-8	3.74E-7	7.40E-9	2.19E-7	3.50E-10	-1.73E-7	4.28E-7
HTP-nc	CTUh	7.86E-6	5.95E-7	6.42E-7	9.10E-6	2.48E-7	2.77E-6	8.07E-9	-3.86E-6	8.26E-6
SQP	Pt	1.71E+3	5.29E+2	2.43E+1	2.26E+3	2.19E+2	1.30E+3	3.69E+1	-7.94E+2	3.02E+3
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.25E+2	7.64E+0	1.47E+3	2.20E+3	3.67E+0	8.02E+1	5.70E-1	-3.62E+2	1.92E+3
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.25E+2	7.64E+0	1.47E+3	2.20E+3	3.67E+0	8.02E+1	5.70E-1	-3.62E+2	1.92E+3
PENRE	MJ	4.83E+4	6.48E+2	2.81E+2	4.92E+4	2.72E+2	1.73E+3	1.53E+1	-2.70E+4	2.43E+4
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.83E+4	6.48E+2	2.81E+2	4.92E+4	2.72E+2	1.73E+3	1.53E+1	-2.70E+4	2.43E+4
PET	MJ	4.90E+4	6.55E+2	1.75E+3	5.14E+4	2.75E+2	1.81E+3	1.58E+1	-2.73E+4	2.62E+4
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	1.47E+1	7.43E-2	3.72E+0	1.85E+1	2.90E-2	9.39E-1	1.78E-2	-7.43E+0	1.20E+1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.98E-3	1.55E-3	4.07E-4	7.93E-3	6.55E-4	2.65E-3	1.73E-5	-7.35E-3	3.90E-3
NHWD	kg	4.07E+1	3.87E+1	5.15E-1	7.99E+1	1.59E+1	7.98E+1	6.34E+1	-2.04E+1	2.19E+2
RWD	kg	4.24E-2	4.01E-3	9.72E-4	4.74E-2	1.74E-3	6.20E-3	9.41E-5	-1.40E-2	4.14E-2
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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