Environmental Profile

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

Ecochain v3.5.80

Product:	3000847 - PVC Mp Pipe BK 315x5.2 L=1 Uncert
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

Wavin carries a complete PVC range of outdoor sewers. With PVC as a material, a smooth-walled, flexible and completely watertight piping system is obtained. Moreover, PVC is absolutely resistant to all substances that occur in domestic waste water. By working with a light material, large pipe lengths and plug connections, a very fast installation is guaranteed.

LCA standard:	NMD Bepalingsmethode 1.1 (2022)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
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 - NL - Hardenberg - 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

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3−-eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **GWP-total** = EF EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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 SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	1.68	0.04	0.07	1.79	0.03	0.57	0	-0.81	1.58
ADPE	kg Sb-eq	4.04E-4	9.47E-6	1.29E-5	4.26E-4	5.48E-6	4.65E-5	5.76E-8	-1.67E-4	3.12E-4
ADPF	kg Sb-eq	1.82E-1	2.72E-3	3.46E-3	1.88E-1	1.54E-3	1.64E-2	8.11E-5	-9.34E-2	1.13E-1
GWP	kg CO2-eq	1.49E+1	3.70E-1	6.14E-1	1.59E+1	2.10E-1	5.42E+0	5.15E-2	-7.91E+0	1.37E+1
ODP	kg CFC-11-eq	8.36E-6	6.57E-8	5.77E-8	8.49E-6	3.90E-8	6.58E-7	1.94E-9	-4.12E-6	5.07E-6
POCP	kg ethene-eq	9.55E-3	2.24E-4	2.71E-4	1.00E-2	1.26E-4	1.33E-3	1.37E-5	-4.22E-3	7.29E-3
AP	kg SO2-eq	5.94E-2	1.63E-3	2.41E-3	6.34E-2	9.05E-4	9.63E-3	4.33E-5	-2.71E-2	4.68E-2
EP	kg PO4 3−-eq	7.48E-3	3.20E-4	3.81E-4	8.18E-3	1.81E-4	1.49E-3	1.66E-5	-3.58E-3	6.29E-3
HTP	kg 1,4-DB-eq	5.94E+0	1.56E-1	2.32E-1	6.32E+0	8.99E-2	2.54E+0	4.44E-3	-2.62E+0	6.34E+0
FAETP	kg 1,4-DB-eq	1.30E-1	4.55E-3	9.44E-3	1.44E-1	2.63E-3	3.73E-2	1.31E-3	-5.72E-2	1.28E-1
MAETP	kg 1,4-DB-eq	3.81E+2	1.64E+1	3.85E+1	4.36E+2	9.41E+0	1.23E+2	1.61E+0	-1.65E+2	4.05E+2
TETP	kg 1,4-DB-eq	4.07E-2	5.51E-4	1.44E-2	5.56E-2	3.19E-4	8.98E-3	1.47E-5	-1.89E-2	4.60E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	9.41E+0	3.74E-1	7.24E-1	1.05E+1	2.12E-1	1.15E+1	6.00E-2	-8.16E+0	1.41E+1
GWP-f	kg CO2 eq	1.53E+1	3.74E-1	5.67E-1	1.62E+1	2.12E-1	5.46E+0	6.00E-2	-8.10E+0	1.39E+1
GWP-b	kg CO2 eq	-5.89E+0	1.72E-4	1.23E-1	-5.76E+0	1.29E-4	5.99E+0	7.69E-5	-5.64E-2	1.73E-1
GWP-luluc	kg CO2 eq	1.46E-2	1.37E-4	3.45E-2	4.93E-2	7.50E-5	2.52E-3	1.63E-6	-6.09E-3	4.58E-2
ODP	kg CFC11 eq	8.28E-6	8.25E-8	6.85E-8	8.43E-6	4.88E-8	6.79E-7	2.42E-9	-4.08E-6	5.09E-6
AP	mol H+ eq	7.21E-2	2.17E-3	3.09E-3	7.74E-2	1.21E-3	1.21E-2	5.80E-5	-3.33E-2	5.75E-2
EP-fw	kg P eq	6.80E-4	3.77E-6	8.10E-6	6.92E-4	1.74E-6	8.38E-5	7.35E-8	-3.07E-4	4.70E-4
EP-m	kg N eq	1.28E-2	7.64E-4	9.11E-4	1.45E-2	4.32E-4	3.05E-3	3.51E-5	-6.07E-3	1.19E-2
EP-T	mol N eq	1.41E-1	8.42E-3	9.77E-3	1.60E-1	4.76E-3	3.37E-2	2.32E-4	-6.88E-2	1.29E-1
POCP	kg NMVOC eq	4.71E-2	2.40E-3	2.76E-3	5.23E-2	1.36E-3	1.00E-2	7.88E-5	-2.18E-2	4.20E-2
ADP-mm	kg Sb eq	4.04E-4	9.47E-6	1.29E-5	4.26E-4	5.48E-6	4.65E-5	5.76E-8	-1.67E-4	3.12E-4
ADP-f	MJ	3.86E+2	5.63E+0	6.56E+0	3.98E+2	3.25E+0	3.25E+1	1.75E-1	-1.96E+2	2.38E+2
WDP	m3 depriv.	2.46E+1	2.02E-2	4.44E+0	2.91E+1	9.98E-3	1.25E+0	1.05E-3	-1.17E+1	1.86E+1
PM	disease inc.	7.53E-7	3.36E-8	4.80E-8	8.35E-7	1.91E-8	1.51E-7	1.20E-9	-2.41E-7	7.66E-7
IR	kBq U-235 eq	8.62E-1	2.36E-2	1.18E-2	8.98E-1	1.42E-2	1.14E-1	8.03E-4	-3.82E-1	6.44E-1
ETP-fw	CTUe	2.76E+2	5.02E+0	1.09E+1	2.92E+2	2.64E+0	2.39E+2	2.63E+0	-1.37E+2	3.99E+2
HTP-c	CTUh	1.19E-8	1.63E-10	3.73E-10	1.24E-8	9.40E-11	3.90E-9	4.61E-12	-4.63E-9	1.18E-8
HTP-nc	CTUh	3.34E-7	5.50E-9	1.14E-8	3.51E-7	3.15E-9	8.57E-8	5.05E-10	-1.58E-7	2.83E-7
SQP	Pt	5.92E+2	4.89E+0	4.91E-1	5.97E+2	2.78E+0	2.04E+1	4.45E-1	-1.37E+2	4.83E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.96E+1	7.05E-2	1.98E+1	1.19E+2	4.67E-2	2.31E+0	6.30E-3	-3.19E+1	8.99E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.96E+1	7.05E-2	1.98E+1	1.19E+2	4.67E-2	2.31E+0	6.30E-3	-3.19E+1	8.99E+1
PENRE	MJ	4.14E+2	5.98E+0	7.11E+0	4.27E+2	3.45E+0	3.46E+1	1.86E-1	-2.11E+2	2.54E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.14E+2	5.98E+0	7.11E+0	4.27E+2	3.45E+0	3.46E+1	1.86E-1	-2.11E+2	2.54E+2
PET	MJ	5.14E+2	6.05E+0	2.69E+1	5.47E+2	3.50E+0	3.69E+1	1.92E-1	-2.43E+2	3.44E+2
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	2.70E-1	6.86E-4	1.04E-1	3.75E-1	3.68E-4	3.47E-2	2.14E-4	-1.23E-1	2.88E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.32E-4	1.43E-5	9.19E-6	3.56E-4	8.32E-6	5.28E-5	2.12E-7	-1.66E-4	2.51E-4
NHWD	kg	1.64E+0	3.57E-1	1.33E-2	2.01E+0	2.02E-1	1.29E+0	8.06E-1	-6.69E-1	3.64E+0
RWD	kg	7.87E-4	3.70E-5	1.65E-5	8.40E-4	2.21E-5	1.23E-4	1.14E-6	-3.39E-4	6.47E-4
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