Environmental Profile

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

Ecochain v3.5.80

Product:	3030378 - PVC RWA Pipe WT 80x1.5 L=6
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	0.78	0.02	0.03	0.83	0.01	0.28	0	-0.38	0.74
ADPE	kg Sb-eq	4.10E-3	3.51E-6	5.66E-6	4.11E-3	2.41E-6	2.07E-5	2.59E-8	-7.60E-5	4.06E-3
ADPF	kg Sb-eq	8.59E-2	1.01E-3	1.52E-3	8.84E-2	6.78E-4	7.26E-3	3.62E-5	-4.51E-2	5.13E-2
GWP	kg CO2-eq	7.02E+0	1.37E-1	2.70E-1	7.43E+0	9.23E-2	2.84E+0	2.37E-2	-3.85E+0	6.53E+0
ODP	kg CFC-11-eq	3.76E-6	2.44E-8	2.53E-8	3.81E-6	1.71E-8	2.96E-7	8.66E-10	-1.90E-6	2.23E-6
POCP	kg ethene-eq	4.46E-3	8.28E-5	1.19E-4	4.66E-3	5.54E-5	5.80E-4	6.22E-6	-1.91E-3	3.39E-3
AP	kg SO2-eq	2.80E-2	6.04E-4	1.06E-3	2.97E-2	3.97E-4	4.24E-3	1.94E-5	-1.21E-2	2.22E-2
EP	kg PO4 3−-eq	3.42E-3	1.19E-4	1.67E-4	3.71E-3	7.93E-5	6.49E-4	7.51E-6	-1.51E-3	2.93E-3
HTP	kg 1,4-DB-eq	2.70E+0	5.78E-2	1.02E-1	2.86E+0	3.95E-2	1.13E+0	2.01E-3	-1.17E+0	2.85E+0
FAETP	kg 1,4-DB-eq	6.73E-2	1.69E-3	4.14E-3	7.32E-2	1.16E-3	1.88E-2	6.07E-4	-2.55E-2	6.82E-2
MAETP	kg 1,4-DB-eq	1.85E+2	6.07E+0	1.69E+1	2.08E+2	4.13E+0	5.92E+1	7.44E-1	-7.47E+1	1.98E+2
TETP	kg 1,4-DB-eq	1.88E-2	2.04E-4	6.32E-3	2.53E-2	1.40E-4	3.98E-3	6.69E-6	-8.47E-3	2.10E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.17E+0	1.39E-1	3.18E-1	6.62E+0	9.31E-2	3.94E+0	2.76E-2	-3.97E+0	6.71E+0
GWP-f	kg CO2 eq	7.20E+0	1.38E-1	2.49E-1	7.58E+0	9.30E-2	2.86E+0	2.76E-2	-3.94E+0	6.62E+0
GWP-b	kg CO2 eq	-1.04E+0	6.39E-5	5.38E-2	-9.83E-1	5.65E-5	1.08E+0	3.50E-5	-2.60E-2	7.14E-2
GWP-luluc	kg CO2 eq	6.55E-3	5.07E-5	1.52E-2	2.18E-2	3.29E-5	1.13E-3	7.41E-7	-2.56E-3	2.04E-2
ODP	kg CFC11 eq	3.71E-6	3.06E-8	3.01E-8	3.77E-6	2.14E-8	3.05E-7	1.08E-9	-1.89E-6	2.22E-6
AP	mol H+ eq	3.39E-2	8.03E-4	1.36E-3	3.61E-2	5.30E-4	5.33E-3	2.60E-5	-1.47E-2	2.73E-2
EP-fw	kg P eq	3.26E-4	1.40E-6	3.56E-6	3.31E-4	7.65E-7	3.75E-5	3.34E-8	-1.39E-4	2.30E-4
EP-m	kg N eq	5.89E-3	2.83E-4	4.00E-4	6.58E-3	1.90E-4	1.32E-3	1.58E-5	-2.62E-3	5.48E-3
EP-T	mol N eq	6.48E-2	3.12E-3	4.29E-3	7.22E-2	2.09E-3	1.46E-2	1.04E-4	-2.87E-2	6.03E-2
POCP	kg NMVOC eq	2.19E-2	8.91E-4	1.21E-3	2.40E-2	5.97E-4	4.35E-3	3.54E-5	-9.59E-3	1.94E-2
ADP-mm	kg Sb eq	4.10E-3	3.51E-6	5.66E-6	4.11E-3	2.41E-6	2.07E-5	2.59E-8	-7.60E-5	4.06E-3
ADP-f	MJ	1.82E+2	2.09E+0	2.88E+0	1.87E+2	1.43E+0	1.44E+1	7.82E-2	-9.41E+1	1.09E+2
WDP	m3 depriv.	1.16E+1	7.47E-3	1.95E+0	1.35E+1	4.38E-3	5.61E-1	4.95E-4	-5.36E+0	8.71E+0
PM	disease inc.	2.70E-7	1.24E-8	2.11E-8	3.03E-7	8.40E-9	6.61E-8	5.37E-10	-9.80E-8	2.80E-7
IR	kBq U-235 eq	3.91E-1	8.75E-3	5.20E-3	4.05E-1	6.24E-3	5.04E-2	3.59E-4	-1.75E-1	2.87E-1
ETP-fw	CTUe	1.56E+2	1.86E+0	4.80E+0	1.63E+2	1.16E+0	1.08E+2	1.19E+0	-5.63E+1	2.17E+2
HTP-c	CTUh	5.62E-9	6.04E-11	1.64E-10	5.84E-9	4.13E-11	1.69E-9	2.11E-12	-2.04E-9	5.53E-9
HTP-nc	CTUh	1.75E-7	2.04E-9	5.01E-9	1.82E-7	1.38E-9	3.85E-8	2.30E-10	-6.98E-8	1.52E-7
SQP	Pt	1.22E+2	1.81E+0	2.15E-1	1.24E+2	1.22E+0	8.95E+0	1.99E-1	-3.06E+1	1.04E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.36E+1	2.61E-2	8.68E+0	3.23E+1	2.05E-2	1.03E+0	2.85E-3	-8.12E+0	2.53E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.36E+1	2.61E-2	8.68E+0	3.23E+1	2.05E-2	1.03E+0	2.85E-3	-8.12E+0	2.53E+1
PENRE	MJ	1.95E+2	2.22E+0	3.12E+0	2.01E+2	1.52E+0	1.53E+1	8.30E-2	-1.01E+2	1.16E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.95E+2	2.22E+0	3.12E+0	2.01E+2	1.52E+0	1.53E+1	8.30E-2	-1.01E+2	1.16E+2
PET	MJ	2.19E+2	2.24E+0	1.18E+1	2.33E+2	1.54E+0	1.63E+1	8.59E-2	-1.10E+2	1.41E+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	1.31E-1	2.54E-4	4.59E-2	1.77E-1	1.62E-4	1.55E-2	9.57E-5	-5.63E-2	1.37E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.38E-4	5.29E-6	4.03E-6	6.48E-4	3.65E-6	2.33E-5	9.49E-8	-7.98E-5	5.95E-4
NHWD	kg	7.36E-1	1.32E-1	5.82E-3	8.74E-1	8.85E-2	5.60E-1	3.54E-1	-2.95E-1	1.58E+0
RWD	kg	3.41E-4	1.37E-5	7.24E-6	3.62E-4	9.71E-6	5.41E-5	5.10E-7	-1.55E-4	2.72E-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