Environmental Profile

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

Ecochain v3.5.80

Product:	3030818 - PVC RWA Pipe GY KOMO 70x1.5 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

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.62	0.02	0.03	0.66	0.01	0.22	0	-0.31	0.59
ADPE	kg Sb-eq	1.58E-4	3.94E-6	5.25E-6	1.67E-4	2.20E-6	1.84E-5	2.28E-8	-6.51E-5	1.22E-4
ADPF	kg Sb-eq	6.88E-2	1.13E-3	1.41E-3	7.13E-2	6.19E-4	6.48E-3	3.23E-5	-3.66E-2	4.18E-2
GWP	kg CO2-eq	5.56E+0	1.54E-1	2.50E-1	5.96E+0	8.43E-2	2.13E+0	2.02E-2	-3.08E+0	5.12E+0
ODP	kg CFC-11-eq	3.27E-6	2.73E-8	2.35E-8	3.32E-6	1.56E-8	2.60E-7	7.75E-10	-1.61E-6	1.98E-6
POCP	kg ethene-eq	3.42E-3	9.30E-5	1.10E-4	3.62E-3	5.06E-5	5.12E-4	5.40E-6	-1.58E-3	2.60E-3
AP	kg SO2-eq	2.15E-2	6.77E-4	9.82E-4	2.31E-2	3.63E-4	3.73E-3	1.72E-5	-1.02E-2	1.71E-2
EP	kg PO4 3−-eq	2.59E-3	1.33E-4	1.55E-4	2.88E-3	7.24E-5	5.66E-4	6.60E-6	-1.24E-3	2.28E-3
HTP	kg 1,4-DB-eq	2.18E+0	6.49E-2	9.45E-2	2.34E+0	3.61E-2	1.00E+0	1.76E-3	-9.86E-1	2.39E+0
FAETP	kg 1,4-DB-eq	4.73E-2	1.89E-3	3.85E-3	5.31E-2	1.06E-3	1.47E-2	5.16E-4	-2.16E-2	4.77E-2
MAETP	kg 1,4-DB-eq	1.38E+2	6.81E+0	1.57E+1	1.60E+2	3.77E+0	4.85E+1	6.33E-1	-6.33E+1	1.50E+2
TETP	kg 1,4-DB-eq	1.52E-2	2.29E-4	5.87E-3	2.13E-2	1.28E-4	3.57E-3	5.82E-6	-7.18E-3	1.78E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.16E+0	1.56E-1	2.95E-1	5.61E+0	8.51E-2	2.74E+0	2.35E-2	-3.18E+0	5.28E+0
GWP-f	kg CO2 eq	5.70E+0	1.55E-1	2.31E-1	6.09E+0	8.50E-2	2.15E+0	2.35E-2	-3.15E+0	5.19E+0
GWP-b	kg CO2 eq	-5.49E-1	7.17E-5	4.99E-2	-4.99E-1	5.16E-5	5.92E-1	3.04E-5	-2.22E-2	7.13E-2
GWP-luluc	kg CO2 eq	4.70E-3	5.69E-5	1.41E-2	1.88E-2	3.01E-5	1.00E-3	6.39E-7	-2.14E-3	1.77E-2
ODP	kg CFC11 eq	3.22E-6	3.43E-8	2.79E-8	3.28E-6	1.96E-8	2.69E-7	9.63E-10	-1.60E-6	1.98E-6
AP	mol H+ eq	2.59E-2	9.01E-4	1.26E-3	2.81E-2	4.84E-4	4.68E-3	2.30E-5	-1.23E-2	2.10E-2
EP-fw	kg P eq	2.53E-4	1.57E-6	3.30E-6	2.58E-4	6.99E-7	3.33E-5	2.88E-8	-1.18E-4	1.73E-4
EP-m	kg N eq	4.41E-3	3.18E-4	3.71E-4	5.09E-3	1.73E-4	1.14E-3	1.40E-5	-2.15E-3	4.27E-3
EP-T	mol N eq	4.78E-2	3.50E-3	3.98E-3	5.53E-2	1.91E-3	1.26E-2	9.21E-5	-2.33E-2	4.66E-2
POCP	kg NMVOC eq	1.64E-2	1.00E-3	1.12E-3	1.85E-2	5.46E-4	3.78E-3	3.13E-5	-7.89E-3	1.50E-2
ADP-mm	kg Sb eq	1.58E-4	3.94E-6	5.25E-6	1.67E-4	2.20E-6	1.84E-5	2.28E-8	-6.51E-5	1.22E-4
ADP-f	MJ	1.46E+2	2.34E+0	2.67E+0	1.51E+2	1.30E+0	1.28E+1	6.97E-2	-7.67E+1	8.88E+1
WDP	m3 depriv.	9.62E+0	8.38E-3	1.81E+0	1.14E+1	4.00E-3	4.96E-1	3.85E-4	-4.58E+0	7.36E+0
PM	disease inc.	1.97E-7	1.40E-8	1.95E-8	2.30E-7	7.67E-9	5.87E-8	4.78E-10	-8.08E-8	2.16E-7
IR	kBq U-235 eq	3.12E-1	9.82E-3	4.82E-3	3.27E-1	5.70E-3	4.48E-2	3.20E-4	-1.49E-1	2.29E-1
ETP-fw	CTUe	9.74E+1	2.09E+0	4.46E+0	1.04E+2	1.06E+0	9.50E+1	1.05E+0	-4.69E+1	1.54E+2
HTP-c	CTUh	3.98E-9	6.78E-11	1.52E-10	4.20E-9	3.77E-11	1.41E-9	1.80E-12	-1.71E-9	3.94E-9
HTP-nc	CTUh	1.25E-7	2.29E-9	4.65E-9	1.32E-7	1.26E-9	3.37E-8	2.01E-10	-5.91E-8	1.08E-7
SQP	Pt	7.19E+1	2.03E+0	2.00E-1	7.41E+1	1.12E+0	8.05E+0	1.77E-1	-1.97E+1	6.37E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.51E+1	2.93E-2	8.06E+0	2.32E+1	1.87E-2	9.16E-1	2.50E-3	-5.65E+0	1.85E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.51E+1	2.93E-2	8.06E+0	2.32E+1	1.87E-2	9.16E-1	2.50E-3	-5.65E+0	1.85E+1
PENRE	MJ	1.57E+2	2.49E+0	2.90E+0	1.62E+2	1.38E+0	1.37E+1	7.40E-2	-8.26E+1	9.48E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.57E+2	2.49E+0	2.90E+0	1.62E+2	1.38E+0	1.37E+1	7.40E-2	-8.26E+1	9.48E+1
PET	MJ	1.72E+2	2.52E+0	1.10E+1	1.86E+2	1.40E+0	1.46E+1	7.65E-2	-8.83E+1	1.13E+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	1.03E-1	2.85E-4	4.26E-2	1.45E-1	1.48E-4	1.36E-2	8.55E-5	-4.80E-2	1.11E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.19E-4	5.94E-6	3.74E-6	1.28E-4	3.34E-6	2.07E-5	8.39E-8	-6.39E-5	8.85E-5
NHWD	kg	5.67E-1	1.49E-1	5.40E-3	7.21E-1	8.09E-2	4.81E-1	3.23E-1	-2.49E-1	1.36E+0
RWD	kg	2.75E-4	1.54E-5	6.72E-6	2.97E-4	8.87E-6	4.82E-5	4.56E-7	-1.31E-4	2.23E-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