Environmental Profile

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

Ecochain v3.5.80

Product:	3003973 - PVC RWA Pipe GY KOMO 70x1.5 L=4
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	0.41	0.01	0.02	0.44	0.01	0.15	0	-0.21	0.39
ADPE	kg Sb-eq	1.05E-4	2.62E-6	3.45E-6	1.11E-4	1.47E-6	1.23E-5	1.52E-8	-4.34E-5	8.14E-5
ADPF	kg Sb-eq	4.58E-2	7.55E-4	9.25E-4	4.75E-2	4.13E-4	4.32E-3	2.15E-5	-2.44E-2	2.79E-2
GWP	kg CO2-eq	3.71E+0	1.03E-1	1.65E-1	3.97E+0	5.62E-2	1.42E+0	1.35E-2	-2.06E+0	3.41E+0
ODP	kg CFC-11-eq	2.18E-6	1.82E-8	1.55E-8	2.21E-6	1.04E-8	1.74E-7	5.17E-10	-1.08E-6	1.32E-6
POCP	kg ethene-eq	2.28E-3	6.20E-5	7.25E-5	2.41E-3	3.37E-5	3.41E-4	3.60E-6	-1.06E-3	1.74E-3
AP	kg SO2-eq	1.43E-2	4.52E-4	6.45E-4	1.54E-2	2.42E-4	2.48E-3	1.15E-5	-6.77E-3	1.14E-2
EP	kg PO4 3−-eq	1.73E-3	8.87E-5	1.02E-4	1.92E-3	4.83E-5	3.77E-4	4.40E-6	-8.30E-4	1.52E-3
HTP	kg 1,4-DB-eq	1.45E+0	4.32E-2	6.21E-2	1.56E+0	2.40E-2	6.67E-1	1.17E-3	-6.57E-1	1.59E+0
FAETP	kg 1,4-DB-eq	3.15E-2	1.26E-3	2.53E-3	3.53E-2	7.04E-4	9.79E-3	3.44E-4	-1.44E-2	3.18E-2
MAETP	kg 1,4-DB-eq	9.17E+1	4.54E+0	1.03E+1	1.07E+2	2.52E+0	3.23E+1	4.22E-1	-4.22E+1	9.96E+1
TETP	kg 1,4-DB-eq	1.01E-2	1.53E-4	3.86E-3	1.41E-2	8.52E-5	2.38E-3	3.88E-6	-4.79E-3	1.18E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.44E+0	1.04E-1	1.94E-1	3.74E+0	5.67E-2	1.83E+0	1.57E-2	-2.12E+0	3.52E+0
GWP-f	kg CO2 eq	3.80E+0	1.04E-1	1.52E-1	4.06E+0	5.66E-2	1.43E+0	1.57E-2	-2.10E+0	3.46E+0
GWP-b	kg CO2 eq	-3.66E-1	4.78E-5	3.28E-2	-3.33E-1	3.44E-5	3.95E-1	2.03E-5	-1.48E-2	4.71E-2
GWP-luluc	kg CO2 eq	3.13E-3	3.80E-5	9.25E-3	1.24E-2	2.01E-5	6.68E-4	4.26E-7	-1.43E-3	1.17E-2
ODP	kg CFC11 eq	2.15E-6	2.29E-8	1.83E-8	2.19E-6	1.31E-8	1.79E-7	6.42E-10	-1.06E-6	1.32E-6
AP	mol H+ eq	1.73E-2	6.01E-4	8.28E-4	1.87E-2	3.23E-4	3.12E-3	1.53E-5	-8.19E-3	1.40E-2
EP-fw	kg P eq	1.69E-4	1.04E-6	2.17E-6	1.72E-4	4.66E-7	2.22E-5	1.92E-8	-7.88E-5	1.16E-4
EP-m	kg N eq	2.94E-3	2.12E-4	2.44E-4	3.39E-3	1.15E-4	7.63E-4	9.32E-6	-1.44E-3	2.84E-3
EP-T	mol N eq	3.19E-2	2.33E-3	2.62E-3	3.68E-2	1.27E-3	8.41E-3	6.14E-5	-1.56E-2	3.10E-2
POCP	kg NMVOC eq	1.09E-2	6.66E-4	7.39E-4	1.24E-2	3.64E-4	2.52E-3	2.08E-5	-5.26E-3	1.00E-2
ADP-mm	kg Sb eq	1.05E-4	2.62E-6	3.45E-6	1.11E-4	1.47E-6	1.23E-5	1.52E-8	-4.34E-5	8.14E-5
ADP-f	MJ	9.75E+1	1.56E+0	1.76E+0	1.01E+2	8.70E-1	8.56E+0	4.65E-2	-5.12E+1	5.92E+1
WDP	m3 depriv.	6.42E+0	5.59E-3	1.19E+0	7.61E+0	2.67E-3	3.31E-1	2.57E-4	-3.06E+0	4.89E+0
PM	disease inc.	1.31E-7	9.30E-9	1.28E-8	1.53E-7	5.11E-9	3.92E-8	3.18E-10	-5.39E-8	1.44E-7
IR	kBq U-235 eq	2.08E-1	6.55E-3	3.17E-3	2.18E-1	3.80E-3	2.99E-2	2.13E-4	-9.90E-2	1.53E-1
ETP-fw	CTUe	6.49E+1	1.39E+0	2.93E+0	6.93E+1	7.06E-1	6.33E+1	6.97E-1	-3.13E+1	1.03E+2
HTP-c	CTUh	2.65E-9	4.52E-11	9.99E-11	2.80E-9	2.51E-11	9.43E-10	1.20E-12	-1.14E-9	2.63E-9
HTP-nc	CTUh	8.33E-8	1.52E-9	3.06E-9	8.79E-8	8.42E-10	2.24E-8	1.34E-10	-3.94E-8	7.19E-8
SQP	Pt	4.79E+1	1.36E+0	1.31E-1	4.94E+1	7.44E-1	5.36E+0	1.18E-1	-1.31E+1	4.25E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.01E+1	1.96E-2	5.30E+0	1.54E+1	1.25E-2	6.11E-1	1.67E-3	-3.77E+0	1.22E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.01E+1	1.96E-2	5.30E+0	1.54E+1	1.25E-2	6.11E-1	1.67E-3	-3.77E+0	1.22E+1
PENRE	MJ	1.05E+2	1.66E+0	1.90E+0	1.08E+2	9.23E-1	9.10E+0	4.93E-2	-5.51E+1	6.32E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.05E+2	1.66E+0	1.90E+0	1.08E+2	9.23E-1	9.10E+0	4.93E-2	-5.51E+1	6.32E+1
PET	MJ	1.15E+2	1.68E+0	7.20E+0	1.24E+2	9.36E-1	9.71E+0	5.10E-2	-5.89E+1	7.54E+1
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	6.84E-2	1.90E-4	2.80E-2	9.66E-2	9.84E-5	9.07E-3	5.70E-5	-3.20E-2	7.38E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.91E-5	3.96E-6	2.46E-6	8.55E-5	2.22E-6	1.38E-5	5.59E-8	-4.26E-5	5.90E-5
NHWD	kg	3.78E-1	9.91E-2	3.55E-3	4.80E-1	5.39E-2	3.21E-1	2.15E-1	-1.66E-1	9.05E-1
RWD	kg	1.83E-4	1.03E-5	4.42E-6	1.98E-4	5.91E-6	3.21E-5	3.04E-7	-8.74E-5	1.49E-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

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