Environmental Profile

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

Ecochain v3.5.80

Product:	3030377 - PVC RWA Pipe GY KOMO 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	0.71	0.02	0.03	0.76	0.01	0.26	0	-0.36	0.68
ADPE	kg Sb-eq	1.81E-4	4.53E-6	5.93E-6	1.91E-4	2.52E-6	2.11E-5	2.61E-8	-7.46E-5	1.40E-4
ADPF	kg Sb-eq	7.89E-2	1.30E-3	1.59E-3	8.18E-2	7.09E-4	7.43E-3	3.70E-5	-4.19E-2	4.80E-2
GWP	kg CO2-eq	6.39E+0	1.77E-1	2.82E-1	6.85E+0	9.66E-2	2.45E+0	2.32E-2	-3.54E+0	5.88E+0
ODP	kg CFC-11-eq	3.75E-6	3.14E-8	2.65E-8	3.81E-6	1.79E-8	2.99E-7	8.88E-10	-1.85E-6	2.27E-6
POCP	kg ethene-eq	3.93E-3	1.07E-4	1.24E-4	4.16E-3	5.80E-5	5.88E-4	6.18E-6	-1.82E-3	3.00E-3
AP	kg SO2-eq	2.47E-2	7.79E-4	1.11E-3	2.66E-2	4.16E-4	4.28E-3	1.97E-5	-1.17E-2	1.96E-2
EP	kg PO4 3−-eq	2.99E-3	1.53E-4	1.75E-4	3.31E-3	8.30E-5	6.50E-4	7.57E-6	-1.44E-3	2.62E-3
HTP	kg 1,4-DB-eq	2.50E+0	7.46E-2	1.07E-1	2.68E+0	4.13E-2	1.15E+0	2.02E-3	-1.13E+0	2.74E+0
FAETP	kg 1,4-DB-eq	5.45E-2	2.18E-3	4.34E-3	6.10E-2	1.21E-3	1.68E-2	5.91E-4	-2.48E-2	5.48E-2
MAETP	kg 1,4-DB-eq	1.58E+2	7.83E+0	1.77E+1	1.84E+2	4.32E+0	5.56E+1	7.26E-1	-7.27E+1	1.72E+2
TETP	kg 1,4-DB-eq	1.74E-2	2.64E-4	6.62E-3	2.43E-2	1.46E-4	4.09E-3	6.68E-6	-8.24E-3	2.03E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.83E+0	1.79E-1	3.33E-1	6.34E+0	9.75E-2	3.24E+0	2.70E-2	-3.64E+0	6.06E+0
GWP-f	kg CO2 eq	6.55E+0	1.79E-1	2.61E-1	6.99E+0	9.74E-2	2.47E+0	2.70E-2	-3.62E+0	5.96E+0
GWP-b	kg CO2 eq	-7.26E-1	8.25E-5	5.63E-2	-6.69E-1	5.92E-5	7.76E-1	3.49E-5	-2.55E-2	8.08E-2
GWP-luluc	kg CO2 eq	5.44E-3	6.55E-5	1.59E-2	2.14E-2	3.45E-5	1.15E-3	7.32E-7	-2.47E-3	2.01E-2
ODP	kg CFC11 eq	3.70E-6	3.94E-8	3.15E-8	3.77E-6	2.24E-8	3.08E-7	1.10E-9	-1.83E-6	2.27E-6
AP	mol H+ eq	2.98E-2	1.04E-3	1.42E-3	3.23E-2	5.55E-4	5.37E-3	2.64E-5	-1.41E-2	2.41E-2
EP-fw	kg P eq	2.91E-4	1.80E-6	3.73E-6	2.96E-4	8.02E-7	3.81E-5	3.31E-8	-1.36E-4	1.99E-4
EP-m	kg N eq	5.08E-3	3.65E-4	4.19E-4	5.87E-3	1.99E-4	1.32E-3	1.60E-5	-2.48E-3	4.91E-3
EP-T	mol N eq	5.52E-2	4.03E-3	4.49E-3	6.37E-2	2.19E-3	1.45E-2	1.06E-4	-2.70E-2	5.36E-2
POCP	kg NMVOC eq	1.89E-2	1.15E-3	1.27E-3	2.13E-2	6.25E-4	4.35E-3	3.58E-5	-9.08E-3	1.73E-2
ADP-mm	kg Sb eq	1.81E-4	4.53E-6	5.93E-6	1.91E-4	2.52E-6	2.11E-5	2.61E-8	-7.46E-5	1.40E-4
ADP-f	MJ	1.68E+2	2.69E+0	3.02E+0	1.74E+2	1.50E+0	1.47E+1	7.99E-2	-8.80E+1	1.02E+2
WDP	m3 depriv.	1.10E+1	9.64E-3	2.04E+0	1.31E+1	4.59E-3	5.69E-1	4.42E-4	-5.26E+0	8.41E+0
PM	disease inc.	2.31E-7	1.60E-8	2.21E-8	2.69E-7	8.79E-9	6.74E-8	5.47E-10	-9.34E-8	2.52E-7
IR	kBq U-235 eq	3.59E-1	1.13E-2	5.44E-3	3.76E-1	6.54E-3	5.14E-2	3.67E-4	-1.70E-1	2.64E-1
ETP-fw	CTUe	1.12E+2	2.40E+0	5.03E+0	1.20E+2	1.21E+0	1.09E+2	1.20E+0	-5.41E+1	1.77E+2
HTP-c	CTUh	4.60E-9	7.79E-11	1.72E-10	4.85E-9	4.32E-11	1.63E-9	2.07E-12	-1.97E-9	4.55E-9
HTP-nc	CTUh	1.44E-7	2.63E-9	5.25E-9	1.52E-7	1.45E-9	3.86E-8	2.30E-10	-6.80E-8	1.24E-7
SQP	Pt	9.11E+1	2.34E+0	2.26E-1	9.37E+1	1.28E+0	9.23E+0	2.03E-1	-2.45E+1	8.00E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.86E+1	3.37E-2	9.10E+0	2.77E+1	2.15E-2	1.05E+0	2.87E-3	-6.86E+0	2.20E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.86E+1	3.37E-2	9.10E+0	2.77E+1	2.15E-2	1.05E+0	2.87E-3	-6.86E+0	2.20E+1
PENRE	MJ	1.80E+2	2.86E+0	3.27E+0	1.86E+2	1.59E+0	1.57E+1	8.48E-2	-9.48E+1	1.09E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.80E+2	2.86E+0	3.27E+0	1.86E+2	1.59E+0	1.57E+1	8.48E-2	-9.48E+1	1.09E+2
PET	MJ	1.99E+2	2.89E+0	1.24E+1	2.14E+2	1.61E+0	1.67E+1	8.77E-2	-1.02E+2	1.31E+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	1.18E-1	3.28E-4	4.80E-2	1.66E-1	1.69E-4	1.56E-2	9.80E-5	-5.50E-2	1.27E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.37E-4	6.83E-6	4.22E-6	1.48E-4	3.82E-6	2.37E-5	9.62E-8	-7.34E-5	1.02E-4
NHWD	kg	6.54E-1	1.71E-1	6.09E-3	8.31E-1	9.27E-2	5.54E-1	3.70E-1	-2.86E-1	1.56E+0
RWD	kg	3.16E-4	1.77E-5	7.59E-6	3.42E-4	1.02E-5	5.53E-5	5.23E-7	-1.50E-4	2.57E-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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