Environmental Profile

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

Ecochain v3.5.80

Product:	3003967 - PVC RWA Pipe GY KOMO 60x1.5 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	0.35	0.01	0.02	0.38	0.01	0.13	0	-0.18	0.33
ADPE	kg Sb-eq	8.97E-5	2.24E-6	2.95E-6	9.49E-5	1.25E-6	1.05E-5	1.30E-8	-3.71E-5	6.96E-5
ADPF	kg Sb-eq	3.91E-2	6.44E-4	7.90E-4	4.06E-2	3.53E-4	3.69E-3	1.84E-5	-2.08E-2	2.38E-2
GWP	kg CO2-eq	3.16E+0	8.76E-2	1.40E-1	3.39E+0	4.80E-2	1.22E+0	1.15E-2	-1.76E+0	2.91E+0
ODP	kg CFC-11-eq	1.86E-6	1.55E-8	1.32E-8	1.89E-6	8.91E-9	1.48E-7	4.42E-10	-9.20E-7	1.13E-6
POCP	kg ethene-eq	1.94E-3	5.28E-5	6.18E-5	2.05E-3	2.88E-5	2.91E-4	3.08E-6	-9.01E-4	1.48E-3
AP	kg SO2-eq	1.22E-2	3.85E-4	5.51E-4	1.31E-2	2.07E-4	2.12E-3	9.79E-6	-5.78E-3	9.70E-3
EP	kg PO4 3−-eq	1.47E-3	7.56E-5	8.70E-5	1.63E-3	4.13E-5	3.22E-4	3.76E-6	-7.06E-4	1.29E-3
HTP	kg 1,4-DB-eq	1.24E+0	3.69E-2	5.30E-2	1.33E+0	2.06E-2	5.70E-1	1.00E-3	-5.61E-1	1.36E+0
FAETP	kg 1,4-DB-eq	2.69E-2	1.08E-3	2.16E-3	3.01E-2	6.02E-4	8.36E-3	2.94E-4	-1.23E-2	2.71E-2
MAETP	kg 1,4-DB-eq	7.82E+1	3.87E+0	8.81E+0	9.09E+1	2.15E+0	2.76E+1	3.61E-1	-3.61E+1	8.49E+1
TETP	kg 1,4-DB-eq	8.63E-3	1.30E-4	3.29E-3	1.21E-2	7.28E-5	2.03E-3	3.32E-6	-4.09E-3	1.01E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.97E+0	8.84E-2	1.65E-1	3.23E+0	4.85E-2	1.52E+0	1.34E-2	-1.81E+0	3.00E+0
GWP-f	kg CO2 eq	3.24E+0	8.83E-2	1.30E-1	3.46E+0	4.84E-2	1.23E+0	1.34E-2	-1.80E+0	2.95E+0
GWP-b	kg CO2 eq	-2.71E-1	4.08E-5	2.80E-2	-2.43E-1	2.94E-5	2.96E-1	1.73E-5	-1.27E-2	4.02E-2
GWP-luluc	kg CO2 eq	2.65E-3	3.24E-5	7.89E-3	1.06E-2	1.71E-5	5.71E-4	3.64E-7	-1.22E-3	9.95E-3
ODP	kg CFC11 eq	1.84E-6	1.95E-8	1.56E-8	1.87E-6	1.12E-8	1.53E-7	5.49E-10	-9.10E-7	1.12E-6
AP	mol H+ eq	1.47E-2	5.12E-4	7.06E-4	1.59E-2	2.76E-4	2.66E-3	1.31E-5	-6.98E-3	1.19E-2
EP-fw	kg P eq	1.44E-4	8.91E-7	1.85E-6	1.46E-4	3.99E-7	1.90E-5	1.64E-8	-6.73E-5	9.85E-5
EP-m	kg N eq	2.50E-3	1.80E-4	2.08E-4	2.89E-3	9.87E-5	6.50E-4	7.97E-6	-1.22E-3	2.42E-3
EP-T	mol N eq	2.71E-2	1.99E-3	2.23E-3	3.13E-2	1.09E-3	7.17E-3	5.25E-5	-1.32E-2	2.64E-2
POCP	kg NMVOC eq	9.31E-3	5.68E-4	6.30E-4	1.05E-2	3.11E-4	2.15E-3	1.78E-5	-4.48E-3	8.51E-3
ADP-mm	kg Sb eq	8.97E-5	2.24E-6	2.95E-6	9.49E-5	1.25E-6	1.05E-5	1.30E-8	-3.71E-5	6.95E-5
ADP-f	MJ	8.33E+1	1.33E+0	1.50E+0	8.61E+1	7.43E-1	7.31E+0	3.97E-2	-4.37E+1	5.05E+1
WDP	m3 depriv.	5.48E+0	4.76E-3	1.01E+0	6.50E+0	2.28E-3	2.83E-1	2.20E-4	-2.61E+0	4.17E+0
PM	disease inc.	1.10E-7	7.93E-9	1.10E-8	1.29E-7	4.37E-9	3.34E-8	2.72E-10	-4.57E-8	1.21E-7
IR	kBq U-235 eq	1.78E-1	5.58E-3	2.71E-3	1.86E-1	3.25E-3	2.55E-2	1.82E-4	-8.46E-2	1.30E-1
ETP-fw	CTUe	5.53E+1	1.19E+0	2.50E+0	5.90E+1	6.04E-1	5.41E+1	5.96E-1	-2.65E+1	8.78E+1
HTP-c	CTUh	2.25E-9	3.85E-11	8.53E-11	2.38E-9	2.15E-11	8.03E-10	1.03E-12	-9.74E-10	2.23E-9
HTP-nc	CTUh	7.11E-8	1.30E-9	2.61E-9	7.50E-8	7.20E-10	1.92E-8	1.14E-10	-3.36E-8	6.13E-8
SQP	Pt	3.72E+1	1.16E+0	1.12E-1	3.84E+1	6.36E-1	4.58E+0	1.01E-1	-1.04E+1	3.33E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.03E+0	1.67E-2	4.52E+0	1.26E+1	1.07E-2	5.22E-1	1.43E-3	-3.06E+0	1.00E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.03E+0	1.67E-2	4.52E+0	1.26E+1	1.07E-2	5.22E-1	1.43E-3	-3.06E+0	1.00E+1
PENRE	MJ	8.93E+1	1.41E+0	1.62E+0	9.24E+1	7.89E-1	7.78E+0	4.22E-2	-4.71E+1	5.39E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.93E+1	1.41E+0	1.62E+0	9.24E+1	7.89E-1	7.78E+0	4.22E-2	-4.71E+1	5.39E+1
PET	MJ	9.74E+1	1.43E+0	6.15E+0	1.05E+2	8.00E-1	8.30E+0	4.36E-2	-5.01E+1	6.39E+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	5.84E-2	1.62E-4	2.39E-2	8.24E-2	8.41E-5	7.75E-3	4.87E-5	-2.73E-2	6.30E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.73E-5	3.38E-6	2.10E-6	7.28E-5	1.90E-6	1.18E-5	4.78E-8	-3.64E-5	5.01E-5
NHWD	kg	3.21E-1	8.45E-2	3.03E-3	4.08E-1	4.61E-2	2.74E-1	1.84E-1	-1.41E-1	7.71E-1
RWD	kg	1.56E-4	8.75E-6	3.77E-6	1.69E-4	5.06E-6	2.74E-5	2.60E-7	-7.47E-5	1.27E-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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