Environmental Profile

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

Ecochain v3.5.80

Product:	3004037 - PVC RWA Pipe GY 100x1.5 L=3 SG/CH
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	0.39	0.01	0.02	0.41	0.01	0.14	0	-0.19	0.37
ADPE	kg Sb-eq	9.82E-5	2.46E-6	3.23E-6	1.04E-4	1.38E-6	1.15E-5	1.43E-8	-4.08E-5	7.60E-5
ADPF	kg Sb-eq	4.31E-2	7.08E-4	8.65E-4	4.47E-2	3.89E-4	4.07E-3	2.03E-5	-2.30E-2	2.62E-2
GWP	kg CO2-eq	3.48E+0	9.63E-2	1.54E-1	3.73E+0	5.29E-2	1.34E+0	1.27E-2	-1.93E+0	3.20E+0
ODP	kg CFC-11-eq	2.05E-6	1.71E-8	1.45E-8	2.08E-6	9.82E-9	1.64E-7	4.87E-10	-1.01E-6	1.24E-6
POCP	kg ethene-eq	2.13E-3	5.81E-5	6.78E-5	2.26E-3	3.18E-5	3.20E-4	3.39E-6	-9.90E-4	1.62E-3
AP	kg SO2-eq	1.34E-2	4.23E-4	6.04E-4	1.44E-2	2.28E-4	2.33E-3	1.08E-5	-6.35E-3	1.06E-2
EP	kg PO4 3−-eq	1.61E-3	8.31E-5	9.53E-5	1.79E-3	4.55E-5	3.54E-4	4.15E-6	-7.73E-4	1.42E-3
HTP	kg 1,4-DB-eq	1.36E+0	4.05E-2	5.81E-2	1.46E+0	2.26E-2	6.28E-1	1.10E-3	-6.17E-1	1.49E+0
FAETP	kg 1,4-DB-eq	2.95E-2	1.18E-3	2.36E-3	3.30E-2	6.63E-4	9.21E-3	3.24E-4	-1.35E-2	2.97E-2
MAETP	kg 1,4-DB-eq	8.57E+1	4.26E+0	9.65E+0	9.97E+1	2.37E+0	3.04E+1	3.98E-1	-3.97E+1	9.31E+1
TETP	kg 1,4-DB-eq	9.48E-3	1.43E-4	3.61E-3	1.32E-2	8.02E-5	2.24E-3	3.66E-6	-4.49E-3	1.11E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.32E+0	9.71E-2	1.81E-1	3.60E+0	5.34E-2	1.63E+0	1.48E-2	-1.99E+0	3.30E+0
GWP-f	kg CO2 eq	3.57E+0	9.71E-2	1.42E-1	3.81E+0	5.34E-2	1.35E+0	1.48E-2	-1.98E+0	3.25E+0
GWP-b	kg CO2 eq	-2.49E-1	4.48E-5	3.07E-2	-2.18E-1	3.24E-5	2.76E-1	1.91E-5	-1.39E-2	4.42E-2
GWP-luluc	kg CO2 eq	2.89E-3	3.56E-5	8.65E-3	1.16E-2	1.89E-5	6.29E-4	4.01E-7	-1.33E-3	1.09E-2
ODP	kg CFC11 eq	2.02E-6	2.14E-8	1.71E-8	2.06E-6	1.23E-8	1.69E-7	6.05E-10	-1.00E-6	1.24E-6
AP	mol H+ eq	1.62E-2	5.63E-4	7.74E-4	1.75E-2	3.04E-4	2.93E-3	1.45E-5	-7.67E-3	1.31E-2
EP-fw	kg P eq	1.58E-4	9.79E-7	2.03E-6	1.61E-4	4.39E-7	2.09E-5	1.81E-8	-7.41E-5	1.08E-4
EP-m	kg N eq	2.74E-3	1.98E-4	2.28E-4	3.16E-3	1.09E-4	7.14E-4	8.78E-6	-1.34E-3	2.65E-3
EP-T	mol N eq	2.96E-2	2.19E-3	2.45E-3	3.43E-2	1.20E-3	7.88E-3	5.79E-5	-1.45E-2	2.89E-2
POCP	kg NMVOC eq	1.02E-2	6.24E-4	6.91E-4	1.15E-2	3.43E-4	2.36E-3	1.96E-5	-4.92E-3	9.33E-3
ADP-mm	kg Sb eq	9.82E-5	2.46E-6	3.23E-6	1.04E-4	1.38E-6	1.15E-5	1.43E-8	-4.08E-5	7.60E-5
ADP-f	MJ	9.17E+1	1.46E+0	1.64E+0	9.48E+1	8.19E-1	8.05E+0	4.38E-2	-4.82E+1	5.56E+1
WDP	m3 depriv.	6.04E+0	5.24E-3	1.11E+0	7.16E+0	2.51E-3	3.12E-1	2.41E-4	-2.88E+0	4.59E+0
PM	disease inc.	1.19E-7	8.72E-9	1.20E-8	1.39E-7	4.82E-9	3.68E-8	3.00E-10	-5.00E-8	1.31E-7
IR	kBq U-235 eq	1.95E-1	6.13E-3	2.96E-3	2.04E-1	3.58E-3	2.81E-2	2.01E-4	-9.32E-2	1.43E-1
ETP-fw	CTUe	6.07E+1	1.31E+0	2.74E+0	6.47E+1	6.65E-1	5.97E+1	6.57E-1	-2.90E+1	9.67E+1
HTP-c	CTUh	2.46E-9	4.23E-11	9.35E-11	2.60E-9	2.37E-11	8.81E-10	1.13E-12	-1.07E-9	2.43E-9
HTP-nc	CTUh	7.81E-8	1.43E-9	2.86E-9	8.24E-8	7.93E-10	2.11E-8	1.26E-10	-3.70E-8	6.74E-8
SQP	Pt	3.64E+1	1.27E+0	1.23E-1	3.78E+1	7.01E-1	5.05E+0	1.11E-1	-1.05E+1	3.31E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.17E+0	1.83E-2	4.95E+0	1.31E+1	1.18E-2	5.75E-1	1.57E-3	-3.18E+0	1.06E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.17E+0	1.83E-2	4.95E+0	1.31E+1	1.18E-2	5.75E-1	1.57E-3	-3.18E+0	1.06E+1
PENRE	MJ	9.84E+1	1.55E+0	1.78E+0	1.02E+2	8.70E-1	8.57E+0	4.65E-2	-5.19E+1	5.93E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.84E+1	1.55E+0	1.78E+0	1.02E+2	8.70E-1	8.57E+0	4.65E-2	-5.19E+1	5.93E+1
PET	MJ	1.07E+2	1.57E+0	6.73E+0	1.15E+2	8.82E-1	9.14E+0	4.80E-2	-5.51E+1	6.99E+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	6.42E-2	1.78E-4	2.62E-2	9.06E-2	9.27E-5	8.54E-3	5.37E-5	-3.01E-2	6.91E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.38E-5	3.71E-6	2.30E-6	7.98E-5	2.10E-6	1.30E-5	5.27E-8	-4.01E-5	5.48E-5
NHWD	kg	3.51E-1	9.29E-2	3.32E-3	4.47E-1	5.08E-2	3.00E-1	2.03E-1	-1.55E-1	8.46E-1
RWD	kg	1.72E-4	9.61E-6	4.13E-6	1.85E-4	5.57E-6	3.02E-5	2.86E-7	-8.22E-5	1.39E-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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