Environmental Profile

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

Ecochain v3.5.80

Product:	3003041 - PVC Pipe GY 125x2.5 L=4 SG/CH Uncert
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	1.04	0.04	0.05	1.14	0.02	0.39	0	-0.53	1.01
ADPE	kg Sb-eq	2.65E-4	9.05E-6	8.81E-6	2.83E-4	3.83E-6	3.16E-5	3.93E-8	-1.10E-4	2.08E-4
ADPF	kg Sb-eq	1.17E-1	2.61E-3	2.36E-3	1.22E-1	1.08E-3	1.11E-2	5.57E-5	-6.21E-2	7.17E-2
GWP	kg CO2-eq	9.40E+0	3.54E-1	4.20E-1	1.02E+1	1.47E-1	3.66E+0	3.44E-2	-5.23E+0	8.78E+0
ODP	kg CFC-11-eq	5.52E-6	6.29E-8	3.95E-8	5.63E-6	2.72E-8	4.43E-7	1.34E-9	-2.74E-6	3.36E-6
POCP	kg ethene-eq	5.79E-3	2.14E-4	1.85E-4	6.19E-3	8.80E-5	8.80E-4	9.23E-6	-2.68E-3	4.49E-3
AP	kg SO2-eq	3.62E-2	1.56E-3	1.65E-3	3.94E-2	6.31E-4	6.37E-3	2.96E-5	-1.72E-2	2.93E-2
EP	kg PO4 3−-eq	4.34E-3	3.06E-4	2.60E-4	4.91E-3	1.26E-4	9.67E-4	1.13E-5	-2.09E-3	3.93E-3
HTP	kg 1,4-DB-eq	3.70E+0	1.49E-1	1.59E-1	4.01E+0	6.27E-2	1.73E+0	3.01E-3	-1.67E+0	4.14E+0
FAETP	kg 1,4-DB-eq	7.97E-2	4.35E-3	6.45E-3	9.05E-2	1.84E-3	2.53E-2	8.78E-4	-3.65E-2	8.20E-2
MAETP	kg 1,4-DB-eq	2.32E+2	1.57E+1	2.63E+1	2.74E+2	6.56E+0	8.31E+1	1.08E+0	-1.07E+2	2.57E+2
TETP	kg 1,4-DB-eq	2.55E-2	5.27E-4	9.85E-3	3.59E-2	2.22E-4	6.15E-3	9.95E-6	-1.21E-2	3.02E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	9.02E+0	3.58E-1	4.95E-1	9.88E+0	1.48E-1	4.38E+0	4.01E-2	-5.39E+0	9.06E+0
GWP-f	kg CO2 eq	9.64E+0	3.57E-1	3.87E-1	1.04E+1	1.48E-1	3.69E+0	4.01E-2	-5.35E+0	8.91E+0
GWP-b	kg CO2 eq	-6.20E-1	1.65E-4	8.38E-2	-5.36E-1	8.98E-5	6.94E-1	5.18E-5	-3.77E-2	1.20E-1
GWP-luluc	kg CO2 eq	7.77E-3	1.31E-4	2.36E-2	3.15E-2	5.23E-5	1.72E-3	1.10E-6	-3.60E-3	2.97E-2
ODP	kg CFC11 eq	5.45E-6	7.89E-8	4.68E-8	5.57E-6	3.41E-8	4.57E-7	1.66E-9	-2.71E-6	3.35E-6
AP	mol H+ eq	4.36E-2	2.07E-3	2.11E-3	4.78E-2	8.42E-4	8.00E-3	3.97E-5	-2.07E-2	3.60E-2
EP-fw	kg P eq	4.26E-4	3.60E-6	5.54E-6	4.35E-4	1.22E-6	5.69E-5	4.96E-8	-2.00E-4	2.93E-4
EP-m	kg N eq	7.38E-3	7.30E-4	6.23E-4	8.74E-3	3.01E-4	1.95E-3	2.39E-5	-3.62E-3	7.40E-3
EP-T	mol N eq	8.00E-2	8.05E-3	6.68E-3	9.47E-2	3.32E-3	2.15E-2	1.59E-4	-3.90E-2	8.08E-2
POCP	kg NMVOC eq	2.76E-2	2.30E-3	1.89E-3	3.18E-2	9.49E-4	6.48E-3	5.38E-5	-1.33E-2	2.60E-2
ADP-mm	kg Sb eq	2.65E-4	9.05E-6	8.81E-6	2.83E-4	3.83E-6	3.16E-5	3.93E-8	-1.10E-4	2.08E-4
ADP-f	MJ	2.48E+2	5.39E+0	4.48E+0	2.58E+2	2.27E+0	2.21E+1	1.20E-1	-1.30E+2	1.52E+2
WDP	m3 depriv.	1.63E+1	1.93E-2	3.03E+0	1.93E+1	6.97E-3	8.47E-1	6.79E-4	-7.78E+0	1.24E+1
PM	disease inc.	3.19E-7	3.21E-8	3.28E-8	3.84E-7	1.33E-8	1.01E-7	8.23E-10	-1.35E-7	3.64E-7
IR	kBq U-235 eq	5.26E-1	2.26E-2	8.09E-3	5.57E-1	9.92E-3	7.69E-2	5.51E-4	-2.52E-1	3.92E-1
ETP-fw	CTUe	1.64E+2	4.81E+0	7.48E+0	1.76E+2	1.84E+0	1.61E+2	1.77E+0	-7.85E+1	2.63E+2
HTP-c	CTUh	6.69E-9	1.56E-10	2.55E-10	7.10E-9	6.56E-11	2.43E-9	3.10E-12	-2.89E-9	6.70E-9
HTP-nc	CTUh	2.10E-7	5.26E-9	7.81E-9	2.23E-7	2.20E-9	5.75E-8	3.40E-10	-9.99E-8	1.84E-7
SQP	Pt	9.36E+1	4.67E+0	3.35E-1	9.86E+1	1.94E+0	1.39E+1	3.04E-1	-2.74E+1	8.73E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.13E+1	6.75E-2	1.35E+1	3.49E+1	3.26E-2	1.57E+0	4.27E-3	-8.38E+0	2.81E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.13E+1	6.75E-2	1.35E+1	3.49E+1	3.26E-2	1.57E+0	4.27E-3	-8.38E+0	2.81E+1
PENRE	MJ	2.66E+2	5.72E+0	4.86E+0	2.77E+2	2.41E+0	2.35E+1	1.28E-1	-1.40E+2	1.62E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.66E+2	5.72E+0	4.86E+0	2.77E+2	2.41E+0	2.35E+1	1.28E-1	-1.40E+2	1.62E+2
PET	MJ	2.87E+2	5.79E+0	1.84E+1	3.12E+2	2.44E+0	2.51E+1	1.32E-1	-1.49E+2	1.91E+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	1.74E-1	6.56E-4	7.14E-2	2.46E-1	2.57E-4	2.32E-2	1.47E-4	-8.15E-2	1.88E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.99E-4	1.37E-5	6.28E-6	2.19E-4	5.80E-6	3.56E-5	1.45E-7	-1.08E-4	1.52E-4
NHWD	kg	9.45E-1	3.42E-1	9.06E-3	1.30E+0	1.41E-1	8.28E-1	5.62E-1	-4.20E-1	2.41E+0
RWD	kg	4.62E-4	3.54E-5	1.13E-5	5.09E-4	1.54E-5	8.29E-5	7.87E-7	-2.22E-4	3.86E-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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