Environmental Profile

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

Ecochain v3.5.80

Product:	3003024 - PVC Pipe GY 75x1.8 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	0.46	0.02	0.02	0.5	0.01	0.17	0	-0.23	0.45
ADPE	kg Sb-eq	1.17E-4	3.99E-6	3.89E-6	1.25E-4	1.69E-6	1.39E-5	1.73E-8	-4.87E-5	9.17E-5
ADPF	kg Sb-eq	5.14E-2	1.15E-3	1.04E-3	5.36E-2	4.75E-4	4.91E-3	2.46E-5	-2.74E-2	3.16E-2
GWP	kg CO2-eq	4.14E+0	1.56E-1	1.85E-1	4.48E+0	6.47E-2	1.61E+0	1.52E-2	-2.31E+0	3.87E+0
ODP	kg CFC-11-eq	2.44E-6	2.77E-8	1.74E-8	2.48E-6	1.20E-8	1.95E-7	5.91E-10	-1.21E-6	1.48E-6
POCP	kg ethene-eq	2.55E-3	9.42E-5	8.16E-5	2.72E-3	3.88E-5	3.88E-4	4.07E-6	-1.18E-3	1.97E-3
AP	kg SO2-eq	1.59E-2	6.86E-4	7.27E-4	1.73E-2	2.79E-4	2.81E-3	1.31E-5	-7.56E-3	1.29E-2
EP	kg PO4 3−-eq	1.91E-3	1.35E-4	1.15E-4	2.16E-3	5.56E-5	4.26E-4	4.98E-6	-9.16E-4	1.73E-3
HTP	kg 1,4-DB-eq	1.63E+0	6.57E-2	6.99E-2	1.77E+0	2.77E-2	7.62E-1	1.33E-3	-7.34E-1	1.82E+0
FAETP	kg 1,4-DB-eq	3.51E-2	1.92E-3	2.85E-3	3.98E-2	8.11E-4	1.11E-2	3.87E-4	-1.61E-2	3.61E-2
MAETP	kg 1,4-DB-eq	1.02E+2	6.90E+0	1.16E+1	1.21E+2	2.90E+0	3.66E+1	4.76E-1	-4.73E+1	1.13E+2
TETP	kg 1,4-DB-eq	1.12E-2	2.32E-4	4.34E-3	1.58E-2	9.81E-5	2.71E-3	4.39E-6	-5.35E-3	1.33E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	4.03E+0	1.57E-1	2.18E-1	4.40E+0	6.53E-2	1.88E+0	1.77E-2	-2.38E+0	3.99E+0
GWP-f	kg CO2 eq	4.24E+0	1.57E-1	1.71E-1	4.57E+0	6.52E-2	1.63E+0	1.77E-2	-2.36E+0	3.92E+0
GWP-b	kg CO2 eq	-2.22E-1	7.26E-5	3.70E-2	-1.85E-1	3.96E-5	2.54E-1	2.29E-5	-1.67E-2	5.30E-2
GWP-luluc	kg CO2 eq	3.40E-3	5.77E-5	1.04E-2	1.39E-2	2.31E-5	7.57E-4	4.86E-7	-1.58E-3	1.31E-2
ODP	kg CFC11 eq	2.40E-6	3.47E-8	2.06E-8	2.46E-6	1.50E-8	2.02E-7	7.34E-10	-1.20E-6	1.48E-6
AP	mol H+ eq	1.92E-2	9.13E-4	9.32E-4	2.10E-2	3.72E-4	3.52E-3	1.75E-5	-9.12E-3	1.58E-2
EP-fw	kg P eq	1.88E-4	1.59E-6	2.44E-6	1.92E-4	5.37E-7	2.51E-5	2.19E-8	-8.83E-5	1.29E-4
EP-m	kg N eq	3.24E-3	3.22E-4	2.75E-4	3.84E-3	1.33E-4	8.60E-4	1.06E-5	-1.59E-3	3.25E-3
EP-T	mol N eq	3.51E-2	3.55E-3	2.95E-3	4.16E-2	1.47E-3	9.48E-3	7.01E-5	-1.71E-2	3.55E-2
POCP	kg NMVOC eq	1.21E-2	1.01E-3	8.32E-4	1.40E-2	4.19E-4	2.85E-3	2.37E-5	-5.84E-3	1.14E-2
ADP-mm	kg Sb eq	1.17E-4	3.99E-6	3.89E-6	1.25E-4	1.69E-6	1.39E-5	1.73E-8	-4.87E-5	9.17E-5
ADP-f	MJ	1.09E+2	2.37E+0	1.98E+0	1.14E+2	1.00E+0	9.74E+0	5.31E-2	-5.74E+1	6.70E+1
WDP	m3 depriv.	7.18E+0	8.49E-3	1.34E+0	8.53E+0	3.07E-3	3.73E-1	3.00E-4	-3.43E+0	5.47E+0
PM	disease inc.	1.38E-7	1.41E-8	1.45E-8	1.67E-7	5.89E-9	4.46E-8	3.63E-10	-5.91E-8	1.58E-7
IR	kBq U-235 eq	2.32E-1	9.94E-3	3.57E-3	2.45E-1	4.38E-3	3.39E-2	2.43E-4	-1.11E-1	1.72E-1
ETP-fw	CTUe	7.21E+1	2.12E+0	3.30E+0	7.75E+1	8.13E-1	7.11E+1	7.80E-1	-3.44E+1	1.16E+2
HTP-c	CTUh	2.93E-9	6.86E-11	1.13E-10	3.11E-9	2.89E-11	1.07E-9	1.37E-12	-1.27E-9	2.94E-9
HTP-nc	CTUh	9.26E-8	2.31E-9	3.44E-9	9.84E-8	9.70E-10	2.53E-8	1.50E-10	-4.40E-8	8.09E-8
SQP	Pt	3.66E+1	2.06E+0	1.48E-1	3.88E+1	8.57E-1	6.14E+0	1.34E-1	-1.11E+1	3.48E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.71E+0	2.97E-2	5.97E+0	1.47E+1	1.44E-2	6.92E-1	1.89E-3	-3.50E+0	1.19E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.71E+0	2.97E-2	5.97E+0	1.47E+1	1.44E-2	6.92E-1	1.89E-3	-3.50E+0	1.19E+1
PENRE	MJ	1.17E+2	2.52E+0	2.14E+0	1.22E+2	1.06E+0	1.04E+1	5.63E-2	-6.19E+1	7.16E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.17E+2	2.52E+0	2.14E+0	1.22E+2	1.06E+0	1.04E+1	5.63E-2	-6.19E+1	7.16E+1
PET	MJ	1.26E+2	2.55E+0	8.11E+0	1.37E+2	1.08E+0	1.11E+1	5.82E-2	-6.54E+1	8.35E+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	7.65E-2	2.89E-4	3.15E-2	1.08E-1	1.13E-4	1.02E-2	6.50E-5	-3.60E-2	8.27E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.73E-5	6.01E-6	2.77E-6	9.61E-5	2.56E-6	1.57E-5	6.39E-8	-4.77E-5	6.67E-5
NHWD	kg	4.15E-1	1.51E-1	4.00E-3	5.69E-1	6.21E-2	3.64E-1	2.48E-1	-1.85E-1	1.06E+0
RWD	kg	2.03E-4	1.56E-5	4.98E-6	2.24E-4	6.81E-6	3.66E-5	3.47E-7	-9.80E-5	1.70E-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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