Environmental Profile

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

Ecochain v3.5.80

Product:	3002892 - PVC Pipe GY 80x3 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	0.82	0.03	0.04	0.89	0.01	0.3	0	-0.42	0.8
ADPE	kg Sb-eq	2.09E-4	7.13E-6	6.98E-6	2.23E-4	3.03E-6	2.50E-5	3.11E-8	-8.74E-5	1.64E-4
ADPF	kg Sb-eq	9.20E-2	2.05E-3	1.87E-3	9.60E-2	8.53E-4	8.81E-3	4.41E-5	-4.91E-2	5.65E-2
GWP	kg CO2-eq	7.40E+0	2.79E-1	3.33E-1	8.01E+0	1.16E-1	2.89E+0	2.73E-2	-4.14E+0	6.91E+0
ODP	kg CFC-11-eq	4.37E-6	4.95E-8	3.13E-8	4.45E-6	2.15E-8	3.50E-7	1.06E-9	-2.17E-6	2.66E-6
POCP	kg ethene-eq	4.54E-3	1.68E-4	1.47E-4	4.86E-3	6.97E-5	6.94E-4	7.31E-6	-2.11E-3	3.52E-3
AP	kg SO2-eq	2.84E-2	1.23E-3	1.31E-3	3.10E-2	5.00E-4	5.03E-3	2.35E-5	-1.35E-2	2.30E-2
EP	kg PO4 3−-eq	3.39E-3	2.41E-4	2.06E-4	3.84E-3	9.99E-5	7.62E-4	8.94E-6	-1.63E-3	3.08E-3
HTP	kg 1,4-DB-eq	2.91E+0	1.18E-1	1.26E-1	3.16E+0	4.97E-2	1.37E+0	2.39E-3	-1.31E+0	3.26E+0
FAETP	kg 1,4-DB-eq	6.26E-2	3.43E-3	5.11E-3	7.11E-2	1.46E-3	2.00E-2	6.95E-4	-2.88E-2	6.45E-2
MAETP	kg 1,4-DB-eq	1.82E+2	1.23E+1	2.09E+1	2.15E+2	5.20E+0	6.57E+1	8.55E-1	-8.48E+1	2.02E+2
TETP	kg 1,4-DB-eq	2.01E-2	4.16E-4	7.80E-3	2.83E-2	1.76E-4	4.87E-3	7.88E-6	-9.58E-3	2.38E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	7.35E+0	2.82E-1	3.92E-1	8.03E+0	1.17E-1	3.22E+0	3.18E-2	-4.26E+0	7.13E+0
GWP-f	kg CO2 eq	7.59E+0	2.82E-1	3.07E-1	8.18E+0	1.17E-1	2.92E+0	3.17E-2	-4.23E+0	7.02E+0
GWP-b	kg CO2 eq	-2.43E-1	1.30E-4	6.64E-2	-1.77E-1	7.11E-5	3.02E-1	4.10E-5	-2.99E-2	9.53E-2
GWP-luluc	kg CO2 eq	6.00E-3	1.03E-4	1.87E-2	2.48E-2	4.15E-5	1.36E-3	8.73E-7	-2.81E-3	2.34E-2
ODP	kg CFC11 eq	4.31E-6	6.22E-8	3.71E-8	4.41E-6	2.70E-8	3.62E-7	1.32E-9	-2.15E-6	2.65E-6
AP	mol H+ eq	3.43E-2	1.63E-3	1.67E-3	3.76E-2	6.67E-4	6.31E-3	3.14E-5	-1.63E-2	2.83E-2
EP-fw	kg P eq	3.35E-4	2.84E-6	4.39E-6	3.43E-4	9.64E-7	4.50E-5	3.93E-8	-1.58E-4	2.30E-4
EP-m	kg N eq	5.76E-3	5.75E-4	4.93E-4	6.83E-3	2.39E-4	1.54E-3	1.89E-5	-2.83E-3	5.79E-3
EP-T	mol N eq	6.23E-2	6.34E-3	5.29E-3	7.40E-2	2.63E-3	1.69E-2	1.26E-4	-3.03E-2	6.33E-2
POCP	kg NMVOC eq	2.16E-2	1.81E-3	1.49E-3	2.49E-2	7.52E-4	5.10E-3	4.26E-5	-1.04E-2	2.04E-2
ADP-mm	kg Sb eq	2.09E-4	7.13E-6	6.98E-6	2.23E-4	3.03E-6	2.50E-5	3.11E-8	-8.74E-5	1.64E-4
ADP-f	MJ	1.96E+2	4.25E+0	3.55E+0	2.04E+2	1.80E+0	1.75E+1	9.53E-2	-1.03E+2	1.20E+2
WDP	m3 depriv.	1.29E+1	1.52E-2	2.40E+0	1.53E+1	5.52E-3	6.70E-1	5.38E-4	-6.16E+0	9.81E+0
PM	disease inc.	2.40E-7	2.53E-8	2.60E-8	2.91E-7	1.06E-8	7.99E-8	6.52E-10	-1.05E-7	2.77E-7
IR	kBq U-235 eq	4.14E-1	1.78E-2	6.41E-3	4.38E-1	7.86E-3	6.08E-2	4.37E-4	-1.99E-1	3.08E-1
ETP-fw	CTUe	1.29E+2	3.79E+0	5.92E+0	1.38E+2	1.46E+0	1.28E+2	1.40E+0	-6.11E+1	2.08E+2
HTP-c	CTUh	5.20E-9	1.23E-10	2.02E-10	5.52E-9	5.20E-11	1.91E-9	2.45E-12	-2.27E-9	5.21E-9
HTP-nc	CTUh	1.66E-7	4.14E-9	6.19E-9	1.76E-7	1.74E-9	4.54E-8	2.70E-10	-7.87E-8	1.45E-7
SQP	Pt	5.15E+1	3.68E+0	2.66E-1	5.55E+1	1.54E+0	1.10E+1	2.41E-1	-1.69E+1	5.14E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.35E+1	5.32E-2	1.07E+1	2.43E+1	2.58E-2	1.24E+0	3.38E-3	-5.67E+0	1.99E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.35E+1	5.32E-2	1.07E+1	2.43E+1	2.58E-2	1.24E+0	3.38E-3	-5.67E+0	1.99E+1
PENRE	MJ	2.10E+2	4.51E+0	3.85E+0	2.18E+2	1.91E+0	1.86E+1	1.01E-1	-1.11E+2	1.28E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.10E+2	4.51E+0	3.85E+0	2.18E+2	1.91E+0	1.86E+1	1.01E-1	-1.11E+2	1.28E+2
PET	MJ	2.24E+2	4.56E+0	1.46E+1	2.43E+2	1.93E+0	1.98E+1	1.05E-1	-1.17E+2	1.48E+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	1.37E-1	5.17E-4	5.66E-2	1.94E-1	2.03E-4	1.83E-2	1.17E-4	-6.45E-2	1.48E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.56E-4	1.08E-5	4.97E-6	1.71E-4	4.60E-6	2.81E-5	1.15E-7	-8.56E-5	1.19E-4
NHWD	kg	7.37E-1	2.69E-1	7.18E-3	1.01E+0	1.11E-1	6.51E-1	4.45E-1	-3.30E-1	1.89E+0
RWD	kg	3.63E-4	2.79E-5	8.94E-6	4.00E-4	1.22E-5	6.55E-5	6.23E-7	-1.76E-4	3.03E-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