Environmental Profile

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

Ecochain v3.5.80

Product:	3082298 - PVC Pipe DGR KOMO 315x9.7 PN8 L=10 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	29.87	0.54	1.23	31.64	0.44	10.18	0.07	-14.87	27.47
ADPE	kg Sb-eq	2.22E-1	1.15E-4	2.24E-4	2.22E-1	9.59E-5	8.28E-4	1.05E-6	-3.13E-3	2.20E-1
ADPF	kg Sb-eq	3.23E+0	3.32E-2	6.01E-2	3.33E+0	2.70E-2	2.90E-1	1.46E-3	-1.76E+0	1.89E+0
GWP	kg CO2-eq	2.65E+2	4.51E+0	1.07E+1	2.81E+2	3.68E+0	9.89E+1	9.75E-1	-1.48E+2	2.36E+2
ODP	kg CFC-11-eq	1.54E-4	8.01E-7	1.00E-6	1.56E-4	6.82E-7	1.21E-5	3.49E-8	-7.76E-5	9.12E-5
POCP	kg ethene-eq	1.57E-1	2.72E-3	4.71E-3	1.65E-1	2.21E-3	2.26E-2	2.55E-4	-7.54E-2	1.14E-1
AP	kg SO2-eq	1.06E+0	1.98E-2	4.19E-2	1.12E+0	1.58E-2	1.68E-1	7.85E-4	-4.83E-1	8.24E-1
EP	kg PO4 3−-eq	1.29E-1	3.90E-3	6.62E-3	1.39E-1	3.16E-3	2.53E-2	3.06E-4	-5.84E-2	1.10E-1
HTP	kg 1,4-DB-eq	1.05E+2	1.90E+0	4.04E+0	1.11E+2	1.57E+0	4.44E+1	8.18E-2	-4.70E+1	1.10E+2
FAETP	kg 1,4-DB-eq	2.68E+0	5.55E-2	1.64E-1	2.90E+0	4.61E-2	6.62E-1	2.49E-2	-1.03E+0	2.60E+0
MAETP	kg 1,4-DB-eq	7.20E+3	2.00E+2	6.71E+2	8.07E+3	1.65E+2	2.21E+3	3.05E+1	-3.03E+3	7.45E+3
TETP	kg 1,4-DB-eq	7.44E-1	6.71E-3	2.51E-1	1.00E+0	5.57E-3	1.59E-1	2.74E-4	-3.43E-1	8.24E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.61E+2	4.55E+0	1.26E+1	2.78E+2	3.71E+0	1.13E+2	1.14E+0	-1.52E+2	2.44E+2
GWP-f	kg CO2 eq	2.72E+2	4.55E+0	9.86E+0	2.86E+2	3.71E+0	9.96E+1	1.14E+0	-1.51E+2	2.40E+2
GWP-b	kg CO2 eq	-1.14E+1	2.10E-3	2.13E+0	-9.25E+0	2.25E-3	1.38E+1	1.44E-3	-1.07E+0	3.48E+0
GWP-luluc	kg CO2 eq	2.42E-1	1.67E-3	6.01E-1	8.45E-1	1.31E-3	4.55E-2	3.02E-5	-1.01E-1	7.91E-1
ODP	kg CFC11 eq	1.52E-4	1.00E-6	1.19E-6	1.54E-4	8.54E-7	1.24E-5	4.33E-8	-7.68E-5	9.08E-5
AP	mol H+ eq	1.28E+0	2.64E-2	5.38E-2	1.36E+0	2.11E-2	2.10E-1	1.05E-3	-5.83E-1	1.01E+0
EP-fw	kg P eq	1.27E-2	4.59E-5	1.41E-4	1.29E-2	3.05E-5	1.52E-3	1.36E-6	-5.65E-3	8.80E-3
EP-m	kg N eq	2.19E-1	9.30E-3	1.59E-2	2.45E-1	7.55E-3	5.09E-2	6.45E-4	-1.01E-1	2.02E-1
EP-T	mol N eq	2.40E+0	1.03E-1	1.70E-1	2.67E+0	8.32E-2	5.62E-1	4.19E-3	-1.09E+0	2.23E+0
POCP	kg NMVOC eq	7.96E-1	2.93E-2	4.80E-2	8.73E-1	2.38E-2	1.68E-1	1.44E-3	-3.73E-1	6.94E-1
ADP-mm	kg Sb eq	2.22E-1	1.15E-4	2.24E-4	2.22E-1	9.59E-5	8.28E-4	1.05E-6	-3.13E-3	2.20E-1
ADP-f	MJ	6.89E+3	6.86E+1	1.14E+2	7.08E+3	5.69E+1	5.74E+2	3.16E+0	-3.68E+3	4.03E+3
WDP	m3 depriv.	4.60E+2	2.45E-1	7.72E+1	5.38E+2	1.75E-1	2.28E+1	2.05E-2	-2.20E+2	3.41E+2
PM	disease inc.	8.78E-6	4.09E-7	8.35E-7	1.00E-5	3.34E-7	2.60E-6	2.17E-8	-3.76E-6	9.22E-6
IR	kBq U-235 eq	1.54E+1	2.88E-1	2.06E-1	1.59E+1	2.49E-1	2.02E+0	1.45E-2	-7.11E+0	1.11E+1
ETP-fw	CTUe	6.48E+3	6.12E+1	1.90E+2	6.73E+3	4.62E+1	4.45E+3	4.93E+1	-2.18E+3	9.09E+3
HTP-c	CTUh	2.24E-7	1.98E-9	6.50E-9	2.32E-7	1.64E-9	6.42E-8	8.63E-11	-8.15E-8	2.17E-7
HTP-nc	CTUh	7.23E-6	6.69E-8	1.99E-7	7.50E-6	5.51E-8	1.54E-6	9.46E-9	-2.82E-6	6.29E-6
SQP	Pt	2.16E+3	5.95E+1	8.54E+0	2.23E+3	4.87E+1	3.54E+2	8.07E+0	-6.61E+2	1.98E+3

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.35E+2	8.59E-1	3.44E+2	8.81E+2	8.16E-1	4.17E+1	1.16E-1	-2.14E+2	7.09E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.35E+2	8.59E-1	3.44E+2	8.81E+2	8.16E-1	4.17E+1	1.16E-1	-2.14E+2	7.09E+2
PENRE	MJ	7.39E+3	7.29E+1	1.24E+2	7.59E+3	6.04E+1	6.11E+2	3.35E+0	-3.97E+3	4.30E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.39E+3	7.29E+1	1.24E+2	7.59E+3	6.04E+1	6.11E+2	3.35E+0	-3.97E+3	4.30E+3
PET	MJ	7.93E+3	7.37E+1	4.68E+2	8.47E+3	6.12E+1	6.52E+2	3.47E+0	-4.18E+3	5.01E+3
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	5.04E+0	8.36E-3	1.82E+0	6.87E+0	6.44E-3	6.25E-1	3.87E-3	-2.30E+0	5.20E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.27E-2	1.74E-4	1.60E-4	3.30E-2	1.45E-4	9.25E-4	3.84E-6	-3.06E-3	3.11E-2
NHWD	kg	2.74E+1	4.35E+0	2.31E-1	3.20E+1	3.53E+0	2.10E+1	1.41E+1	-1.18E+1	5.88E+1
RWD	kg	1.34E-2	4.51E-4	2.87E-4	1.41E-2	3.87E-4	2.15E-3	2.06E-5	-6.27E-3	1.04E-2
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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