Environmental Profile

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

Ecochain v3.5.80

Product:	3004034 - PVC RWA Pipe GY 80x1.4 L=4 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	0.38	0.01	0.02	0.41	0.01	0.14	0	-0.19	0.36
ADPE	kg Sb-eq	9.71E-5	2.43E-6	3.19E-6	1.03E-4	1.36E-6	1.14E-5	1.41E-8	-4.03E-5	7.52E-5
ADPF	kg Sb-eq	4.26E-2	7.00E-4	8.55E-4	4.41E-2	3.84E-4	4.01E-3	2.00E-5	-2.27E-2	2.59E-2
GWP	kg CO2-eq	3.44E+0	9.52E-2	1.52E-1	3.68E+0	5.23E-2	1.32E+0	1.25E-2	-1.91E+0	3.16E+0
ODP	kg CFC-11-eq	2.03E-6	1.69E-8	1.43E-8	2.06E-6	9.69E-9	1.61E-7	4.80E-10	-1.00E-6	1.23E-6
POCP	kg ethene-eq	2.11E-3	5.74E-5	6.70E-5	2.23E-3	3.14E-5	3.16E-4	3.34E-6	-9.79E-4	1.60E-3
AP	kg SO2-eq	1.32E-2	4.19E-4	5.96E-4	1.43E-2	2.25E-4	2.31E-3	1.07E-5	-6.28E-3	1.05E-2
EP	kg PO4 3−-eq	1.59E-3	8.22E-5	9.42E-5	1.77E-3	4.49E-5	3.50E-4	4.09E-6	-7.66E-4	1.40E-3
HTP	kg 1,4-DB-eq	1.34E+0	4.01E-2	5.74E-2	1.44E+0	2.24E-2	6.20E-1	1.09E-3	-6.10E-1	1.48E+0
FAETP	kg 1,4-DB-eq	2.91E-2	1.17E-3	2.34E-3	3.26E-2	6.55E-4	9.10E-3	3.20E-4	-1.33E-2	2.94E-2
MAETP	kg 1,4-DB-eq	8.48E+1	4.21E+0	9.53E+0	9.86E+1	2.34E+0	3.00E+1	3.93E-1	-3.92E+1	9.21E+1
TETP	kg 1,4-DB-eq	9.38E-3	1.42E-4	3.56E-3	1.31E-2	7.92E-5	2.21E-3	3.61E-6	-4.44E-3	1.09E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.25E+0	9.61E-2	1.79E-1	3.53E+0	5.27E-2	1.64E+0	1.46E-2	-1.97E+0	3.26E+0
GWP-f	kg CO2 eq	3.52E+0	9.60E-2	1.40E-1	3.76E+0	5.27E-2	1.33E+0	1.46E-2	-1.95E+0	3.21E+0
GWP-b	kg CO2 eq	-2.76E-1	4.43E-5	3.03E-2	-2.46E-1	3.20E-5	3.03E-1	1.89E-5	-1.38E-2	4.36E-2
GWP-luluc	kg CO2 eq	2.87E-3	3.52E-5	8.55E-3	1.15E-2	1.86E-5	6.21E-4	3.96E-7	-1.32E-3	1.08E-2
ODP	kg CFC11 eq	2.00E-6	2.12E-8	1.69E-8	2.04E-6	1.21E-8	1.67E-7	5.97E-10	-9.90E-7	1.22E-6
AP	mol H+ eq	1.60E-2	5.57E-4	7.65E-4	1.73E-2	3.00E-4	2.89E-3	1.43E-5	-7.59E-3	1.29E-2
EP-fw	kg P eq	1.56E-4	9.68E-7	2.01E-6	1.59E-4	4.34E-7	2.06E-5	1.79E-8	-7.32E-5	1.07E-4
EP-m	kg N eq	2.71E-3	1.96E-4	2.25E-4	3.13E-3	1.07E-4	7.07E-4	8.67E-6	-1.33E-3	2.63E-3
EP-T	mol N eq	2.94E-2	2.16E-3	2.42E-3	3.39E-2	1.18E-3	7.79E-3	5.71E-5	-1.43E-2	2.86E-2
POCP	kg NMVOC eq	1.01E-2	6.18E-4	6.83E-4	1.14E-2	3.38E-4	2.34E-3	1.94E-5	-4.86E-3	9.24E-3
ADP-mm	kg Sb eq	9.71E-5	2.43E-6	3.19E-6	1.03E-4	1.36E-6	1.14E-5	1.41E-8	-4.03E-5	7.52E-5
ADP-f	MJ	9.06E+1	1.45E+0	1.62E+0	9.37E+1	8.09E-1	7.95E+0	4.32E-2	-4.76E+1	5.49E+1
WDP	m3 depriv.	5.96E+0	5.18E-3	1.10E+0	7.07E+0	2.48E-3	3.08E-1	2.38E-4	-2.84E+0	4.54E+0
PM	disease inc.	1.19E-7	8.62E-9	1.19E-8	1.39E-7	4.76E-9	3.64E-8	2.96E-10	-4.96E-8	1.31E-7
IR	kBq U-235 eq	1.93E-1	6.07E-3	2.93E-3	2.02E-1	3.53E-3	2.78E-2	1.98E-4	-9.20E-2	1.42E-1
ETP-fw	CTUe	6.00E+1	1.29E+0	2.71E+0	6.40E+1	6.57E-1	5.89E+1	6.48E-1	-2.88E+1	9.55E+1
HTP-c	CTUh	2.44E-9	4.19E-11	9.23E-11	2.58E-9	2.34E-11	8.72E-10	1.12E-12	-1.06E-9	2.41E-9
HTP-nc	CTUh	7.72E-8	1.41E-9	2.83E-9	8.15E-8	7.83E-10	2.08E-8	1.24E-10	-3.65E-8	6.67E-8
SQP	Pt	3.87E+1	1.26E+0	1.21E-1	4.01E+1	6.92E-1	4.98E+0	1.10E-1	-1.10E+1	3.49E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.48E+0	1.81E-2	4.90E+0	1.34E+1	1.16E-2	5.68E-1	1.55E-3	-3.25E+0	1.07E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.48E+0	1.81E-2	4.90E+0	1.34E+1	1.16E-2	5.68E-1	1.55E-3	-3.25E+0	1.07E+1
PENRE	MJ	9.72E+1	1.54E+0	1.76E+0	1.00E+2	8.59E-1	8.46E+0	4.59E-2	-5.12E+1	5.86E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.72E+1	1.54E+0	1.76E+0	1.00E+2	8.59E-1	8.46E+0	4.59E-2	-5.12E+1	5.86E+1
PET	MJ	1.06E+2	1.56E+0	6.65E+0	1.14E+2	8.70E-1	9.03E+0	4.74E-2	-5.45E+1	6.93E+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	6.34E-2	1.76E-4	2.58E-2	8.95E-2	9.15E-5	8.43E-3	5.30E-5	-2.97E-2	6.83E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.31E-5	3.67E-6	2.27E-6	7.90E-5	2.07E-6	1.28E-5	5.20E-8	-3.96E-5	5.43E-5
NHWD	kg	3.48E-1	9.18E-2	3.28E-3	4.43E-1	5.01E-2	2.97E-1	2.00E-1	-1.54E-1	8.37E-1
RWD	kg	1.70E-4	9.51E-6	4.08E-6	1.83E-4	5.50E-6	2.99E-5	2.83E-7	-8.12E-5	1.38E-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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