

# Environmental Profile

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

Ecochain v3.5.80



Product: 3003051 - PVC Pipe GY 40x1.8 L=4 CH Uncert Kw  
 Unit: 1 piece  
 Manufacturer: Wavin - NL - Hardenberg - Verified  
 Address: J.C. Kellerlaan 3  
 7772 SG Hardenberg  
 Netherlands

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



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.

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	☑	☑	☑	☑									

## 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	0.24	0.01	0.01	0.26	0	0.09	0	-0.12	0.23
ADPE	kg Sb-eq	6.11E-5	2.08E-6	2.03E-6	6.52E-5	8.83E-7	7.28E-6	9.06E-9	-2.55E-5	4.79E-5
ADPF	kg Sb-eq	2.69E-2	6.00E-4	5.44E-4	2.80E-2	2.48E-4	2.57E-3	1.28E-5	-1.43E-2	1.65E-2
GWP	kg CO2-eq	2.16E+0	8.16E-2	9.68E-2	2.34E+0	3.38E-2	8.43E-1	7.94E-3	-1.21E+0	2.02E+0
ODP	kg CFC-11-eq	1.27E-6	1.45E-8	9.09E-9	1.30E-6	6.28E-9	1.02E-7	3.09E-10	-6.32E-7	7.74E-7
POCP	kg ethene-eq	1.33E-3	4.92E-5	4.26E-5	1.42E-3	2.03E-5	2.03E-4	2.13E-6	-6.16E-4	1.03E-3
AP	kg SO2-eq	8.32E-3	3.59E-4	3.80E-4	9.06E-3	1.46E-4	1.47E-3	6.83E-6	-3.95E-3	6.73E-3
EP	kg PO4 3--eq	9.97E-4	7.05E-5	5.99E-5	1.13E-3	2.91E-5	2.23E-4	2.60E-6	-4.79E-4	9.03E-4
HTP	kg 1,4-DB-eq	8.52E-1	3.43E-2	3.65E-2	9.23E-1	1.45E-2	3.98E-1	6.95E-4	-3.84E-1	9.53E-1
FAETP	kg 1,4-DB-eq	1.83E-2	1.00E-3	1.49E-3	2.08E-2	4.24E-4	5.83E-3	2.02E-4	-8.40E-3	1.89E-2
MAETP	kg 1,4-DB-eq	5.33E+1	3.61E+0	6.07E+0	6.30E+1	1.51E+0	1.92E+1	2.49E-1	-2.47E+1	5.92E+1
TETP	kg 1,4-DB-eq	5.88E-3	1.21E-4	2.27E-3	8.27E-3	5.13E-5	1.42E-3	2.30E-6	-2.80E-3	6.95E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.11E+0	8.23E-2	1.14E-1	2.30E+0	3.41E-2	9.82E-1	9.25E-3	-1.24E+0	2.08E+0
GWP-f	kg CO2 eq	2.22E+0	8.23E-2	8.93E-2	2.39E+0	3.41E-2	8.50E-1	9.25E-3	-1.23E+0	2.05E+0
GWP-b	kg CO2 eq	-1.14E-1	3.80E-5	1.93E-2	-9.46E-2	2.07E-5	1.31E-1	1.20E-5	-8.71E-3	2.77E-2
GWP-luluc	kg CO2 eq	1.78E-3	3.01E-5	5.44E-3	7.25E-3	1.21E-5	3.96E-4	2.54E-7	-8.26E-4	6.83E-3
ODP	kg CFC11 eq	1.26E-6	1.82E-8	1.08E-8	1.28E-6	7.86E-9	1.05E-7	3.84E-10	-6.25E-7	7.73E-7
AP	mol H+ eq	1.00E-2	4.77E-4	4.87E-4	1.10E-2	1.94E-4	1.84E-3	9.15E-6	-4.77E-3	8.27E-3
EP-fw	kg P eq	9.81E-5	8.30E-7	1.28E-6	1.00E-4	2.81E-7	1.31E-5	1.14E-8	-4.62E-5	6.74E-5
EP-m	kg N eq	1.69E-3	1.68E-4	1.43E-4	2.00E-3	6.95E-5	4.50E-4	5.52E-6	-8.31E-4	1.70E-3
EP-T	mol N eq	1.83E-2	1.85E-3	1.54E-3	2.17E-2	7.66E-4	4.96E-3	3.67E-5	-8.93E-3	1.86E-2
POCP	kg NMVOC eq	6.34E-3	5.29E-4	4.34E-4	7.31E-3	2.19E-4	1.49E-3	1.24E-5	-3.05E-3	5.98E-3
ADP-mm	kg Sb eq	6.11E-5	2.08E-6	2.03E-6	6.52E-5	8.83E-7	7.28E-6	9.06E-9	-2.55E-5	4.79E-5
ADP-f	MJ	5.71E+1	1.24E+0	1.03E+0	5.94E+1	5.24E-1	5.09E+0	2.78E-2	-3.00E+1	3.50E+1
WDP	m3 depriv.	3.75E+0	4.44E-3	6.99E-1	4.46E+0	1.61E-3	1.95E-1	1.57E-4	-1.80E+0	2.86E+0
PM	disease inc.	7.20E-8	7.39E-9	7.56E-9	8.70E-8	3.08E-9	2.33E-8	1.90E-10	-3.09E-8	8.27E-8
IR	kBq U-235 eq	1.21E-1	5.20E-3	1.86E-3	1.28E-1	2.29E-3	1.77E-2	1.27E-4	-5.81E-2	9.01E-2
ETP-fw	CTUe	3.77E+1	1.11E+0	1.72E+0	4.05E+1	4.25E-1	3.72E+1	4.08E-1	-1.80E+1	6.05E+1
HTP-c	CTUh	1.53E-9	3.59E-11	5.88E-11	1.63E-9	1.51E-11	5.58E-10	7.15E-13	-6.65E-10	1.53E-9
HTP-nc	CTUh	4.84E-8	1.21E-9	1.80E-9	5.14E-8	5.07E-10	1.33E-8	7.85E-11	-2.30E-8	4.23E-8
SQP	Pt	1.89E+1	1.08E+0	7.73E-2	2.01E+1	4.48E-1	3.21E+0	7.02E-2	-5.76E+0	1.81E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.52E+0	1.55E-2	3.12E+0	7.66E+0	7.51E-3	3.62E-1	9.86E-4	-1.82E+0	6.21E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.52E+0	1.55E-2	3.12E+0	7.66E+0	7.51E-3	3.62E-1	9.86E-4	-1.82E+0	6.21E+0
PENRE	MJ	6.13E+1	1.32E+0	1.12E+0	6.37E+1	5.56E-1	5.42E+0	2.95E-2	-3.23E+1	3.74E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.13E+1	1.32E+0	1.12E+0	6.37E+1	5.56E-1	5.42E+0	2.95E-2	-3.23E+1	3.74E+1
PET	MJ	6.58E+1	1.33E+0	4.24E+0	7.14E+1	5.64E-1	5.78E+0	3.04E-2	-3.42E+1	4.36E+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	4.00E-2	1.51E-4	1.65E-2	5.66E-2	5.93E-5	5.35E-3	3.40E-5	-1.88E-2	4.32E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.56E-5	3.14E-6	1.45E-6	5.02E-5	1.34E-6	8.20E-6	3.34E-8	-2.50E-5	3.48E-5
NHWD	kg	2.17E-1	7.87E-2	2.09E-3	2.97E-1	3.25E-2	1.90E-1	1.30E-1	-9.66E-2	5.54E-1
RWD	kg	1.06E-4	8.15E-6	2.60E-6	1.17E-4	3.56E-6	1.91E-5	1.82E-7	-5.12E-5	8.86E-5
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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