Environmental Profile

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

Ecochain v3.5.80

Product:	3001283 - Wafix PVC Bend 30° GY 125 SN4 S/SP
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	0.09	0	0.01	0.1	0	0.03	0	-0.05	0.08
ADPE	kg Sb-eq	7.42E-4	2.94E-7	1.23E-6	7.44E-4	2.67E-7	2.31E-6	2.98E-9	-8.89E-6	7.37E-4
ADPF	kg Sb-eq	9.98E-3	8.46E-5	2.12E-4	1.03E-2	7.51E-5	8.02E-4	4.13E-6	-5.38E-3	5.78E-3
GWP	kg CO2-eq	8.03E-1	1.15E-2	4.02E-2	8.55E-1	1.02E-2	2.89E-1	2.94E-3	-4.51E-1	7.06E-1
ODP	kg CFC-11-eq	4.12E-7	2.04E-9	3.18E-9	4.17E-7	1.90E-9	3.21E-8	9.84E-11	-2.13E-7	2.38E-7
POCP	kg ethene-eq	5.00E-4	6.94E-6	1.75E-5	5.24E-4	6.14E-6	6.44E-5	7.50E-7	-2.39E-4	3.56E-4
AP	kg SO2-eq	3.20E-3	5.06E-5	1.73E-4	3.43E-3	4.40E-5	4.64E-4	2.22E-6	-1.51E-3	2.42E-3
EP	kg PO4 3−-eq	4.07E-4	9.94E-6	2.22E-5	4.39E-4	8.80E-6	7.12E-5	9.48E-7	-2.03E-4	3.17E-4
HTP	kg 1,4-DB-eq	3.04E-1	4.84E-3	1.87E-2	3.27E-1	4.38E-3	1.24E-1	2.40E-4	-1.41E-1	3.16E-1
FAETP	kg 1,4-DB-eq	9.12E-3	1.41E-4	6.38E-4	9.90E-3	1.28E-4	1.92E-3	9.12E-5	-3.98E-3	8.07E-3
MAETP	kg 1,4-DB-eq	2.15E+1	5.09E-1	2.52E+0	2.45E+1	4.58E-1	6.43E+0	1.06E-1	-9.10E+0	2.24E+1
TETP	kg 1,4-DB-eq	2.17E-3	1.71E-5	1.39E-3	3.57E-3	1.55E-5	4.38E-4	7.69E-7	-1.32E-3	2.71E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.30E-1	1.16E-2	4.60E-2	8.88E-1	1.03E-2	3.08E-1	3.43E-3	-4.25E-1	7.85E-1
GWP-f	kg CO2 eq	8.23E-1	1.16E-2	3.54E-2	8.70E-1	1.03E-2	2.91E-1	3.43E-3	-4.62E-1	7.13E-1
GWP-b	kg CO2 eq	6.96E-3	5.36E-6	7.30E-3	1.43E-2	6.27E-6	1.73E-2	4.16E-6	3.73E-2	6.89E-2
GWP-luluc	kg CO2 eq	8.89E-4	4.25E-6	3.36E-3	4.25E-3	3.65E-6	1.23E-4	8.58E-8	-5.53E-4	3.83E-3
ODP	kg CFC11 eq	4.08E-7	2.56E-9	3.74E-9	4.14E-7	2.38E-9	3.32E-8	1.22E-10	-2.11E-7	2.39E-7
AP	mol H+ eq	3.90E-3	6.73E-5	2.16E-4	4.18E-3	5.88E-5	5.83E-4	2.97E-6	-1.83E-3	2.99E-3
EP-fw	kg P eq	3.78E-5	1.17E-7	6.20E-7	3.85E-5	8.49E-8	4.09E-6	3.89E-9	-1.90E-5	2.37E-5
EP-m	kg N eq	6.92E-4	2.37E-5	5.10E-5	7.66E-4	2.10E-5	1.44E-4	2.00E-6	-3.28E-4	6.06E-4
EP-T	mol N eq	7.48E-3	2.61E-4	5.62E-4	8.30E-3	2.32E-4	1.59E-3	1.19E-5	-3.53E-3	6.60E-3
POCP	kg NMVOC eq	2.50E-3	7.46E-5	1.60E-4	2.73E-3	6.63E-5	4.77E-4	4.12E-6	-1.20E-3	2.08E-3
ADP-mm	kg Sb eq	7.42E-4	2.94E-7	1.23E-6	7.44E-4	2.67E-7	2.31E-6	2.98E-9	-8.89E-6	7.37E-4
ADP-f	MJ	2.12E+1	1.75E-1	3.96E-1	2.18E+1	1.58E-1	1.59E+0	8.93E-3	-1.13E+1	1.23E+1
WDP	m3 depriv.	1.27E+0	6.26E-4	3.06E-1	1.57E+0	4.86E-4	6.09E-2	5.61E-5	-6.68E-1	9.66E-1
PM	disease inc.	2.79E-8	1.04E-9	2.66E-9	3.16E-8	9.31E-10	7.35E-9	6.14E-11	-1.44E-8	2.56E-8
IR	kBq U-235 eq	4.67E-2	7.33E-4	6.29E-4	4.81E-2	6.92E-4	5.58E-3	4.11E-5	-2.21E-2	3.23E-2
ETP-fw	CTUe	2.39E+1	1.56E-1	9.19E-1	2.49E+1	1.29E-1	1.17E+1	1.29E-1	-8.87E+0	2.80E+1
HTP-c	CTUh	6.38E-10	5.06E-12	3.18E-11	6.75E-10	4.58E-12	1.78E-10	2.44E-13	-2.46E-10	6.12E-10
HTP-nc	CTUh	2.08E-8	1.71E-10	9.93E-10	2.20E-8	1.53E-10	4.17E-9	2.50E-11	-8.47E-9	1.79E-8
SQP	Pt	4.27E+0	1.52E-1	2.96E-2	4.45E+0	1.36E-1	9.89E-1	2.29E-2	-8.30E+0	-2.70E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.32E+0	2.19E-3	1.92E+0	3.24E+0	2.27E-3	1.12E-1	3.37E-4	-1.75E+0	1.61E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.32E+0	2.19E-3	1.92E+0	3.24E+0	2.27E-3	1.12E-1	3.37E-4	-1.75E+0	1.61E+0
PENRE	MJ	2.28E+1	1.86E-1	4.28E-1	2.34E+1	1.68E-1	1.69E+0	9.47E-3	-1.22E+1	1.31E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.28E+1	1.86E-1	4.28E-1	2.34E+1	1.68E-1	1.69E+0	9.47E-3	-1.22E+1	1.31E+1
PET	MJ	2.41E+1	1.88E-1	2.35E+0	2.66E+1	1.70E-1	1.80E+0	9.81E-3	-1.39E+1	1.47E+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	1.48E-2	2.13E-5	7.24E-3	2.21E-2	1.79E-5	1.68E-3	1.10E-5	-7.95E-3	1.58E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.05E-4	4.43E-7	4.20E-7	1.06E-4	4.05E-7	2.61E-6	1.09E-8	-8.97E-6	1.00E-4
NHWD	kg	8.14E-2	1.11E-2	6.49E-4	9.32E-2	9.82E-3	5.88E-2	3.92E-2	-3.55E-2	1.66E-1
RWD	kg	4.23E-5	1.15E-6	7.79E-7	4.43E-5	1.08E-6	6.04E-6	5.81E-8	-1.96E-5	3.18E-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