

Environmental Profile

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

Ecochain v3.5.80



Product: 3002847 - PVC Pipe GY BENOR 40x3 L=4 CH
 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]

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.43	0.01	0.02	0.46	0.01	0.16	0	-0.22	0.41
ADPE	kg Sb-eq	1.09E-4	2.40E-6	3.57E-6	1.15E-4	1.52E-6	1.27E-5	1.59E-8	-4.56E-5	8.36E-5
ADPF	kg Sb-eq	4.81E-2	6.91E-4	9.56E-4	4.97E-2	4.27E-4	4.48E-3	2.24E-5	-2.56E-2	2.90E-2
GWP	kg CO2-eq	3.88E+0	9.40E-2	1.70E-1	4.14E+0	5.82E-2	1.49E+0	1.42E-2	-2.16E+0	3.54E+0
ODP	kg CFC-11-eq	2.28E-6	1.67E-8	1.60E-8	2.31E-6	1.08E-8	1.81E-7	5.38E-10	-1.13E-6	1.37E-6
POCP	kg ethene-eq	2.37E-3	5.67E-5	7.49E-5	2.50E-3	3.49E-5	3.51E-4	3.78E-6	-1.10E-3	1.79E-3
AP	kg SO2-eq	1.50E-2	4.13E-4	6.67E-4	1.60E-2	2.50E-4	2.57E-3	1.20E-5	-7.05E-3	1.18E-2
EP	kg PO4 3--eq	1.78E-3	8.12E-5	1.05E-4	1.96E-3	5.00E-5	3.88E-4	4.60E-6	-8.47E-4	1.56E-3
HTP	kg 1,4-DB-eq	1.52E+0	3.96E-2	6.42E-2	1.63E+0	2.49E-2	6.90E-1	1.23E-3	-6.85E-1	1.66E+0
FAETP	kg 1,4-DB-eq	3.28E-2	1.16E-3	2.61E-3	3.66E-2	7.29E-4	1.02E-2	3.63E-4	-1.50E-2	3.28E-2
MAETP	kg 1,4-DB-eq	9.57E+1	4.16E+0	1.07E+1	1.11E+2	2.60E+0	3.36E+1	4.45E-1	-4.42E+1	1.03E+2
TETP	kg 1,4-DB-eq	1.05E-2	1.40E-4	3.99E-3	1.47E-2	8.81E-5	2.47E-3	4.07E-6	-5.00E-3	1.22E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.88E+0	9.49E-2	2.00E-1	4.17E+0	5.87E-2	1.63E+0	1.65E-2	-2.22E+0	3.65E+0
GWP-f	kg CO2 eq	3.98E+0	9.48E-2	1.57E-1	4.23E+0	5.86E-2	1.50E+0	1.65E-2	-2.21E+0	3.59E+0
GWP-b	kg CO2 eq	-9.92E-2	4.38E-5	3.39E-2	-6.52E-2	3.56E-5	1.30E-1	2.13E-5	-1.56E-2	4.95E-2
GWP-luluc	kg CO2 eq	3.15E-3	3.47E-5	9.56E-3	1.27E-2	2.07E-5	6.95E-4	4.48E-7	-1.46E-3	1.20E-2
ODP	kg CFC11 eq	2.25E-6	2.09E-8	1.89E-8	2.29E-6	1.35E-8	1.87E-7	6.68E-10	-1.12E-6	1.37E-6
AP	mol H+ eq	1.80E-2	5.50E-4	8.55E-4	1.94E-2	3.34E-4	3.22E-3	1.60E-5	-8.49E-3	1.45E-2
EP-fw	kg P eq	1.76E-4	9.56E-7	2.24E-6	1.79E-4	4.82E-7	2.31E-5	2.02E-8	-8.25E-5	1.20E-4
EP-m	kg N eq	3.02E-3	1.94E-4	2.52E-4	3.47E-3	1.19E-4	7.81E-4	9.74E-6	-1.47E-3	2.90E-3
EP-T	mol N eq	3.27E-2	2.14E-3	2.70E-3	3.75E-2	1.32E-3	8.61E-3	6.41E-5	-1.58E-2	3.17E-2
POCP	kg NMVOC eq	1.13E-2	6.10E-4	7.63E-4	1.27E-2	3.76E-4	2.59E-3	2.18E-5	-5.43E-3	1.02E-2
ADP-mm	kg Sb eq	1.09E-4	2.40E-6	3.57E-6	1.15E-4	1.52E-6	1.27E-5	1.59E-8	-4.56E-5	8.36E-5
ADP-f	MJ	1.02E+2	1.43E+0	1.82E+0	1.05E+2	9.00E-1	8.87E+0	4.84E-2	-5.38E+1	6.15E+1
WDP	m3 depriv.	6.73E+0	5.11E-3	1.23E+0	7.96E+0	2.76E-3	3.45E-1	2.79E-4	-3.22E+0	5.09E+0
PM	disease inc.	1.24E-7	8.51E-9	1.33E-8	1.46E-7	5.29E-9	4.04E-8	3.32E-10	-5.45E-8	1.38E-7
IR	kBq U-235 eq	2.17E-1	5.99E-3	3.28E-3	2.26E-1	3.93E-3	3.10E-2	2.22E-4	-1.04E-1	1.57E-1
ETP-fw	CTUe	6.85E+1	1.28E+0	3.03E+0	7.28E+1	7.31E-1	6.63E+1	7.30E-1	-3.17E+1	1.09E+2
HTP-c	CTUh	2.71E-9	4.14E-11	1.03E-10	2.85E-9	2.60E-11	9.67E-10	1.27E-12	-1.19E-9	2.66E-9
HTP-nc	CTUh	8.65E-8	1.39E-9	3.16E-9	9.11E-8	8.71E-10	2.33E-8	1.40E-10	-4.10E-8	7.44E-8
SQP	Pt	2.44E+1	1.24E+0	1.36E-1	2.58E+1	7.70E-1	5.54E+0	1.23E-1	-8.29E+0	2.40E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.70E+0	1.79E-2	5.48E+0	1.22E+1	1.29E-2	6.35E-1	1.75E-3	-2.85E+0	9.99E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.70E+0	1.79E-2	5.48E+0	1.22E+1	1.29E-2	6.35E-1	1.75E-3	-2.85E+0	9.99E+0
PENRE	MJ	1.10E+2	1.52E+0	1.97E+0	1.13E+2	9.55E-1	9.43E+0	5.14E-2	-5.79E+1	6.57E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.10E+2	1.52E+0	1.97E+0	1.13E+2	9.55E-1	9.43E+0	5.14E-2	-5.79E+1	6.57E+1
PET	MJ	1.16E+2	1.54E+0	7.44E+0	1.25E+2	9.68E-1	1.01E+1	5.31E-2	-6.08E+1	7.57E+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	7.17E-2	1.74E-4	2.89E-2	1.01E-1	1.02E-4	9.43E-3	5.93E-5	-3.36E-2	7.68E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.11E-5	3.62E-6	2.54E-6	8.72E-5	2.30E-6	1.43E-5	5.84E-8	-4.47E-5	5.92E-5
NHWD	kg	3.85E-1	9.07E-2	3.67E-3	4.79E-1	5.58E-2	3.27E-1	2.23E-1	-1.72E-1	9.13E-1
RWD	kg	1.90E-4	9.39E-6	4.57E-6	2.04E-4	6.12E-6	3.32E-5	3.16E-7	-9.16E-5	1.52E-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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