

Environmental Profile

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

Ecochain v3.5.80



Product: 3000652 - PVC Pipe GY BENOR 160x3.2 SN2 L=5 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	2.46	0.06	0.11	2.63	0.04	0.89	0.01	-1.23	2.33
ADPE	kg Sb-eq	6.19E-4	1.36E-5	2.02E-5	6.53E-4	8.57E-6	7.20E-5	8.98E-8	-2.58E-4	4.75E-4
ADPF	kg Sb-eq	2.75E-1	3.92E-3	5.41E-3	2.84E-1	2.41E-3	2.53E-2	1.27E-4	-1.46E-1	1.66E-1
GWP	kg CO2-eq	2.22E+1	5.34E-1	9.62E-1	2.36E+1	3.29E-1	8.59E+0	8.03E-2	-1.23E+1	2.03E+1
ODP	kg CFC-11-eq	1.29E-5	9.47E-8	9.04E-8	1.31E-5	6.10E-8	1.02E-6	3.04E-9	-6.41E-6	7.76E-6
POCP	kg ethene-eq	1.36E-2	3.22E-4	4.24E-4	1.44E-2	1.97E-4	1.99E-3	2.14E-5	-6.24E-3	1.04E-2
AP	kg SO2-eq	8.55E-2	2.35E-3	3.78E-3	9.16E-2	1.41E-3	1.45E-2	6.76E-5	-3.99E-2	6.77E-2
EP	kg PO4 3--eq	1.02E-2	4.61E-4	5.96E-4	1.12E-2	2.83E-4	2.20E-3	2.60E-5	-4.81E-3	8.92E-3
HTP	kg 1,4-DB-eq	8.68E+0	2.25E-1	3.63E-1	9.27E+0	1.41E-1	3.91E+0	6.94E-3	-3.88E+0	9.44E+0
FAETP	kg 1,4-DB-eq	1.87E-1	6.56E-3	1.48E-2	2.08E-1	4.12E-3	5.85E-2	2.05E-3	-8.50E-2	1.88E-1
MAETP	kg 1,4-DB-eq	5.46E+2	2.36E+1	6.03E+1	6.30E+2	1.47E+1	1.92E+2	2.52E+0	-2.50E+2	5.89E+2
TETP	kg 1,4-DB-eq	5.98E-2	7.94E-4	2.26E-2	8.32E-2	4.98E-4	1.40E-2	2.30E-5	-2.83E-2	6.94E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.21E+1	5.39E-1	1.13E+0	2.37E+1	3.32E-1	9.51E+0	9.36E-2	-1.27E+1	2.10E+1
GWP-f	kg CO2 eq	2.27E+1	5.38E-1	8.88E-1	2.41E+1	3.31E-1	8.66E+0	9.35E-2	-1.26E+1	2.06E+1
GWP-b	kg CO2 eq	-6.80E-1	2.48E-4	1.92E-1	-4.88E-1	2.01E-4	8.50E-1	1.20E-4	-8.82E-2	2.75E-1
GWP-luluc	kg CO2 eq	1.81E-2	1.97E-4	5.41E-2	7.24E-2	1.17E-4	3.93E-3	2.53E-6	-8.30E-3	6.81E-2
ODP	kg CFC11 eq	1.27E-5	1.19E-7	1.07E-7	1.29E-5	7.64E-8	1.06E-6	3.78E-9	-6.34E-6	7.73E-6
AP	mol H+ eq	1.03E-1	3.12E-3	4.84E-3	1.11E-1	1.89E-3	1.82E-2	9.05E-5	-4.82E-2	8.30E-2
EP-fw	kg P eq	1.00E-3	5.43E-6	1.27E-5	1.02E-3	2.73E-6	1.31E-4	1.14E-7	-4.67E-4	6.88E-4
EP-m	kg N eq	1.73E-2	1.10E-3	1.43E-3	1.98E-2	6.76E-4	4.43E-3	5.50E-5	-8.38E-3	1.66E-2
EP-T	mol N eq	1.87E-1	1.21E-2	1.53E-2	2.15E-1	7.44E-3	4.89E-2	3.62E-4	-8.97E-2	1.82E-1
POCP	kg NMVOC eq	6.49E-2	3.46E-3	4.32E-3	7.27E-2	2.13E-3	1.47E-2	1.23E-4	-3.08E-2	5.88E-2
ADP-mm	kg Sb eq	6.19E-4	1.36E-5	2.02E-5	6.53E-4	8.57E-6	7.19E-5	8.98E-8	-2.58E-4	4.75E-4
ADP-f	MJ	5.84E+2	8.11E+0	1.03E+1	6.03E+2	5.09E+0	5.02E+1	2.74E-1	-3.06E+2	3.52E+2
WDP	m3 depriv.	3.82E+1	2.90E-2	6.95E+0	4.52E+1	1.56E-2	1.95E+0	1.58E-3	-1.82E+1	2.90E+1
PM	disease inc.	7.17E-7	4.83E-8	7.51E-8	8.41E-7	2.99E-8	2.29E-7	1.88E-9	-3.09E-7	7.92E-7
IR	kBq U-235 eq	1.23E+0	3.40E-2	1.85E-2	1.28E+0	2.22E-2	1.75E-1	1.26E-3	-5.88E-1	8.95E-1
ETP-fw	CTUe	3.91E+2	7.24E+0	1.71E+1	4.15E+2	4.13E+0	3.75E+2	4.13E+0	-1.80E+2	6.18E+2
HTP-c	CTUh	1.54E-8	2.35E-10	5.85E-10	1.62E-8	1.47E-10	5.50E-9	7.16E-12	-6.72E-9	1.52E-8
HTP-nc	CTUh	4.91E-7	7.92E-9	1.79E-8	5.17E-7	4.92E-9	1.32E-7	7.93E-10	-2.32E-7	4.23E-7
SQP	Pt	1.50E+2	7.04E+0	7.69E-1	1.57E+2	4.35E+0	3.14E+1	6.95E-1	-4.91E+1	1.45E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.97E+1	1.02E-1	3.10E+1	7.08E+1	7.30E-2	3.59E+0	9.87E-3	-1.66E+1	5.79E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.97E+1	1.02E-1	3.10E+1	7.08E+1	7.30E-2	3.59E+0	9.87E-3	-1.66E+1	5.79E+1
PENRE	MJ	6.27E+2	8.62E+0	1.11E+1	6.47E+2	5.40E+0	5.34E+1	2.91E-1	-3.30E+2	3.76E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.27E+2	8.62E+0	1.11E+1	6.47E+2	5.40E+0	5.34E+1	2.91E-1	-3.30E+2	3.76E+2
PET	MJ	6.67E+2	8.72E+0	4.21E+1	7.17E+2	5.47E+0	5.70E+1	3.00E-1	-3.46E+2	4.34E+2
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	4.10E-1	9.88E-4	1.64E-1	5.74E-1	5.76E-4	5.34E-2	3.35E-4	-1.90E-1	4.38E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.60E-4	2.06E-5	1.44E-5	4.95E-4	1.30E-5	8.08E-5	3.30E-7	-2.55E-4	3.34E-4
NHWD	kg	2.20E+0	5.15E-1	2.08E-2	2.73E+0	3.15E-1	1.86E+0	1.26E+0	-9.75E-1	5.20E+0
RWD	kg	1.08E-3	5.33E-5	2.58E-5	1.16E-3	3.46E-5	1.88E-4	1.79E-6	-5.19E-4	8.63E-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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