

Environmental Profile

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

Ecochain v3.5.80



Product: 3004136 - PVC Bend RWA 45° GY 80 S/SP
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	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑
Product stage					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage												Benefits and loads beyond the system boundaries				
A4 Transport gate to site A5 Assembly / Construction installation process												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	0.02	0	0	0.03	0	0.01	0	-0.01	0.02
ADPE	kg Sb-eq	2.09E-4	7.74E-8	3.17E-7	2.10E-4	6.88E-8	6.42E-7	7.68E-10	-2.45E-6	2.08E-4
ADPF	kg Sb-eq	2.51E-3	2.23E-5	5.44E-5	2.58E-3	1.94E-5	2.19E-4	1.06E-6	-1.38E-3	1.45E-3
GWP	kg CO2-eq	2.13E-1	3.03E-3	1.03E-2	2.26E-1	2.64E-3	7.44E-2	7.24E-4	-1.20E-1	1.84E-1
ODP	kg CFC-11-eq	1.17E-7	5.38E-10	8.17E-10	1.18E-7	4.89E-10	9.15E-9	2.54E-11	-5.91E-8	6.87E-8
POCP	kg ethene-eq	1.21E-4	1.83E-6	4.49E-6	1.27E-4	1.58E-6	1.77E-5	1.88E-7	-6.34E-5	8.35E-5
AP	kg SO2-eq	8.53E-4	1.33E-5	4.44E-5	9.10E-4	1.13E-5	1.29E-4	5.73E-7	-4.25E-4	6.26E-4
EP	kg PO4 3--eq	1.15E-4	2.62E-6	5.71E-6	1.23E-4	2.27E-6	1.97E-5	2.26E-7	-6.20E-5	8.31E-5
HTP	kg 1,4-DB-eq	8.28E-2	1.28E-3	4.80E-3	8.89E-2	1.13E-3	3.33E-2	6.01E-5	-4.00E-2	8.35E-2
FAETP	kg 1,4-DB-eq	2.73E-3	3.72E-5	1.64E-4	2.94E-3	3.30E-5	5.12E-4	1.85E-5	-1.29E-3	2.21E-3
MAETP	kg 1,4-DB-eq	5.88E+0	1.34E-1	6.46E-1	6.66E+0	1.18E-1	1.80E+0	2.26E-2	-2.59E+0	6.01E+0
TETP	kg 1,4-DB-eq	6.27E-4	4.51E-6	3.57E-4	9.89E-4	4.00E-6	1.18E-4	2.02E-7	-4.32E-4	6.78E-4
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.20E-1	3.06E-3	1.18E-2	2.35E-1	2.66E-3	8.30E-2	8.44E-4	-1.05E-1	2.17E-1
GWP-f	kg CO2 eq	2.18E-1	3.06E-3	9.09E-3	2.30E-1	2.66E-3	7.49E-2	8.44E-4	-1.23E-1	1.86E-1
GWP-b	kg CO2 eq	2.21E-3	1.41E-6	1.88E-3	4.09E-3	1.61E-6	8.02E-3	1.07E-6	1.77E-2	2.99E-2
GWP-luluc	kg CO2 eq	2.83E-4	1.12E-6	8.63E-4	1.15E-3	9.41E-7	3.38E-5	2.22E-8	-2.03E-4	9.79E-4
ODP	kg CFC11 eq	1.15E-7	6.75E-10	9.60E-10	1.17E-7	6.13E-10	9.43E-9	3.15E-11	-5.85E-8	6.86E-8
AP	mol H+ eq	1.04E-3	1.77E-5	5.54E-5	1.12E-3	1.51E-5	1.62E-4	7.66E-7	-5.16E-4	7.79E-4
EP-fw	kg P eq	1.07E-5	3.08E-8	1.59E-7	1.09E-5	2.19E-8	1.13E-6	1.00E-9	-5.79E-6	6.25E-6
EP-m	kg N eq	1.94E-4	6.25E-6	1.31E-5	2.13E-4	5.42E-6	4.00E-5	4.75E-7	-9.42E-5	1.65E-4
EP-T	mol N eq	2.07E-3	6.89E-5	1.44E-4	2.28E-3	5.97E-5	4.41E-4	3.05E-6	-1.02E-3	1.77E-3
POCP	kg NMVOC eq	6.49E-4	1.97E-5	4.11E-5	7.09E-4	1.71E-5	1.32E-4	1.05E-6	-3.31E-4	5.29E-4
ADP-mm	kg Sb eq	2.09E-4	7.74E-8	3.17E-7	2.10E-4	6.88E-8	6.42E-7	7.68E-10	-2.45E-6	2.08E-4
ADP-f	MJ	5.34E+0	4.61E-2	1.02E-1	5.49E+0	4.08E-2	4.34E-1	2.30E-3	-2.91E+0	3.05E+0
WDP	m3 depriv.	3.49E-1	1.65E-4	7.86E-2	4.28E-1	1.25E-4	1.70E-2	1.49E-5	-1.90E-1	2.55E-1
PM	disease inc.	7.40E-9	2.74E-10	6.84E-10	8.36E-9	2.40E-10	2.01E-9	1.58E-11	-4.46E-9	6.16E-9
IR	kBq U-235 eq	1.23E-2	1.93E-4	1.61E-4	1.27E-2	1.78E-4	1.54E-3	1.06E-5	-6.42E-3	7.99E-3
ETP-fw	CTUe	7.45E+0	4.11E-2	2.36E-1	7.73E+0	3.31E-2	3.34E+0	3.67E-2	-2.98E+0	8.16E+0
HTP-c	CTUh	1.78E-10	1.33E-12	8.17E-12	1.88E-10	1.18E-12	4.85E-11	6.35E-14	-7.08E-11	1.67E-10
HTP-nc	CTUh	5.88E-9	4.50E-11	2.55E-10	6.18E-9	3.95E-11	1.16E-9	7.04E-12	-2.45E-9	4.94E-9
SQP	Pt	1.42E+0	4.00E-2	7.59E-3	1.47E+0	3.49E-2	2.64E-1	5.89E-3	-3.61E+0	-1.84E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.15E-1	5.77E-4	4.94E-1	9.10E-1	5.85E-4	3.11E-2	8.59E-5	-7.22E-1	2.20E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.15E-1	5.77E-4	4.94E-1	9.10E-1	5.85E-4	3.11E-2	8.59E-5	-7.22E-1	2.20E-1
PENRE	MJ	5.73E+0	4.89E-2	1.10E-1	5.89E+0	4.33E-2	4.61E-1	2.44E-3	-3.13E+0	3.26E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.73E+0	4.89E-2	1.10E-1	5.89E+0	4.33E-2	4.61E-1	2.44E-3	-3.13E+0	3.26E+0
PET	MJ	6.14E+0	4.95E-2	6.04E-1	6.79E+0	4.39E-2	4.92E-1	2.53E-3	-3.85E+0	3.48E+0
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	3.99E-3	5.61E-6	1.86E-3	5.85E-3	4.62E-6	4.66E-4	2.82E-6	-2.40E-3	3.93E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.02E-5	1.17E-7	1.08E-7	3.05E-5	1.04E-7	7.17E-7	2.80E-9	-2.51E-6	2.88E-5
NHWD	kg	2.33E-2	2.92E-3	1.67E-4	2.64E-2	2.53E-3	1.57E-2	1.01E-2	-1.02E-2	4.45E-2
RWD	kg	1.08E-5	3.03E-7	2.00E-7	1.13E-5	2.78E-7	1.66E-6	1.50E-8	-5.74E-6	7.49E-6
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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