

Environmental Profile

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

Ecochain v3.5.80



Product: 3004140 - PVC Bend RWA 45° GY 60 S/rSP
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					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	0.01	0	0	0.01	0	0	0	-0.01	0.01
ADPE	kg Sb-eq	1.14E-4	4.07E-8	1.79E-7	1.14E-4	3.75E-8	3.43E-7	4.18E-10	-1.31E-6	1.13E-4
ADPF	kg Sb-eq	1.35E-3	1.17E-5	3.07E-5	1.39E-3	1.05E-5	1.18E-4	5.79E-7	-7.39E-4	7.80E-4
GWP	kg CO2-eq	1.13E-1	1.59E-3	5.83E-3	1.21E-1	1.44E-3	4.04E-2	3.94E-4	-6.38E-2	9.93E-2
ODP	kg CFC-11-eq	6.33E-8	2.83E-10	4.61E-10	6.40E-8	2.66E-10	4.95E-9	1.38E-11	-3.20E-8	3.73E-8
POCP	kg ethene-eq	6.49E-5	9.61E-7	2.53E-6	6.84E-5	8.62E-7	9.39E-6	1.02E-7	-3.33E-5	4.55E-5
AP	kg SO2-eq	4.55E-4	7.00E-6	2.50E-5	4.87E-4	6.18E-6	6.90E-5	3.12E-7	-2.20E-4	3.42E-4
EP	kg PO4 3--eq	5.93E-5	1.38E-6	3.22E-6	6.39E-5	1.23E-6	1.05E-5	1.23E-7	-3.06E-5	4.52E-5
HTP	kg 1,4-DB-eq	4.43E-2	6.71E-4	2.71E-3	4.76E-2	6.14E-4	1.80E-2	3.27E-5	-2.09E-2	4.53E-2
FAETP	kg 1,4-DB-eq	1.38E-3	1.96E-5	9.24E-5	1.49E-3	1.80E-5	2.75E-4	1.01E-5	-6.16E-4	1.18E-3
MAETP	kg 1,4-DB-eq	3.13E+0	7.04E-2	3.64E-1	3.57E+0	6.43E-2	9.52E-1	1.23E-2	-1.35E+0	3.24E+0
TETP	kg 1,4-DB-eq	3.30E-4	2.37E-6	2.01E-4	5.34E-4	2.18E-6	6.37E-5	1.10E-7	-2.06E-4	3.94E-4
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.17E-1	1.61E-3	6.67E-3	1.26E-1	1.45E-3	4.37E-2	4.60E-4	-5.86E-2	1.13E-1
GWP-f	kg CO2 eq	1.16E-1	1.61E-3	5.12E-3	1.23E-1	1.45E-3	4.07E-2	4.59E-4	-6.52E-2	1.00E-1
GWP-b	kg CO2 eq	1.16E-3	7.42E-7	1.06E-3	2.22E-3	8.79E-7	3.04E-3	5.81E-7	6.62E-3	1.19E-2
GWP-luluc	kg CO2 eq	1.37E-4	5.89E-7	4.86E-4	6.24E-4	5.12E-7	1.83E-5	1.21E-8	-8.92E-5	5.54E-4
ODP	kg CFC11 eq	6.25E-8	3.55E-10	5.41E-10	6.34E-8	3.34E-10	5.10E-9	1.71E-11	-3.16E-8	3.72E-8
AP	mol H+ eq	5.55E-4	9.32E-6	3.12E-5	5.95E-4	8.25E-6	8.67E-5	4.17E-7	-2.67E-4	4.24E-4
EP-fw	kg P eq	5.64E-6	1.62E-8	8.97E-8	5.75E-6	1.19E-8	6.15E-7	5.46E-10	-2.89E-6	3.48E-6
EP-m	kg N eq	1.01E-4	3.28E-6	7.38E-6	1.11E-4	2.95E-6	2.13E-5	2.59E-7	-4.80E-5	8.77E-5
EP-T	mol N eq	1.08E-3	3.62E-5	8.14E-5	1.20E-3	3.25E-5	2.34E-4	1.66E-6	-5.18E-4	9.48E-4
POCP	kg NMVOC eq	3.43E-4	1.03E-5	2.32E-5	3.77E-4	9.30E-6	7.01E-5	5.73E-7	-1.71E-4	2.86E-4
ADP-mm	kg Sb eq	1.14E-4	4.07E-8	1.79E-7	1.14E-4	3.75E-8	3.43E-7	4.18E-10	-1.31E-6	1.13E-4
ADP-f	MJ	2.87E+0	2.42E-2	5.73E-2	2.95E+0	2.22E-2	2.33E-1	1.25E-3	-1.56E+0	1.65E+0
WDP	m3 depriv.	1.89E-1	8.67E-5	4.43E-2	2.34E-1	6.82E-5	9.22E-3	8.12E-6	-9.94E-2	1.44E-1
PM	disease inc.	3.81E-9	1.44E-10	3.86E-10	4.34E-9	1.31E-10	1.07E-9	8.62E-12	-2.14E-9	3.40E-9
IR	kBq U-235 eq	6.59E-3	1.02E-4	9.10E-5	6.78E-3	9.71E-5	8.28E-4	5.76E-6	-3.31E-3	4.40E-3
ETP-fw	CTUe	3.69E+0	2.16E-2	1.33E-1	3.84E+0	1.80E-2	1.81E+0	2.00E-2	-1.39E+0	4.30E+0
HTP-c	CTUh	9.57E-11	7.01E-13	4.60E-12	1.01E-10	6.42E-13	2.60E-11	3.46E-14	-3.68E-11	9.09E-11
HTP-nc	CTUh	3.16E-9	2.36E-11	1.44E-10	3.33E-9	2.15E-11	6.28E-10	3.83E-12	-1.27E-9	2.71E-9
SQP	Pt	6.55E-1	2.10E-2	4.28E-3	6.80E-1	1.90E-2	1.42E-1	3.21E-3	-1.42E+0	-5.79E-1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.01E-1	3.03E-4	2.78E-1	4.80E-1	3.19E-4	1.68E-2	4.68E-5	-2.94E-1	2.03E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.01E-1	3.03E-4	2.78E-1	4.80E-1	3.19E-4	1.68E-2	4.68E-5	-2.94E-1	2.03E-1
PENRE	MJ	3.08E+0	2.57E-2	6.19E-2	3.17E+0	2.36E-2	2.48E-1	1.33E-3	-1.68E+0	1.76E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.08E+0	2.57E-2	6.19E-2	3.17E+0	2.36E-2	2.48E-1	1.33E-3	-1.68E+0	1.76E+0
PET	MJ	3.28E+0	2.60E-2	3.40E-1	3.65E+0	2.39E-2	2.65E-1	1.38E-3	-1.97E+0	1.97E+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	2.14E-3	2.95E-6	1.05E-3	3.19E-3	2.51E-6	2.53E-4	1.53E-6	-1.19E-3	2.25E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.64E-5	6.14E-8	6.08E-8	1.65E-5	5.68E-8	3.83E-7	1.53E-9	-1.33E-6	1.57E-5
NHWD	kg	1.22E-2	1.54E-3	9.39E-5	1.38E-2	1.38E-3	8.43E-3	5.51E-3	-5.31E-3	2.38E-2
RWD	kg	5.73E-6	1.59E-7	1.13E-7	6.00E-6	1.51E-7	8.89E-7	8.15E-9	-2.95E-6	4.10E-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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