

Environmental Profile

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

Ecochain v3.5.80



Product: 3024589 - WfxPVC Bend 30° BR/GD 160 SN8 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	☑	☑	☑	☑									

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

EI = 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	0.2	0	0.01	0.22	0	0.07	0	-0.1	0.18
ADPE	kg Sb-eq	1.74E-3	6.57E-7	2.95E-6	1.74E-3	5.95E-7	5.34E-6	6.64E-9	-2.05E-5	1.73E-3
ADPF	kg Sb-eq	2.19E-2	1.89E-4	5.07E-4	2.26E-2	1.68E-4	1.84E-3	9.20E-6	-1.19E-2	1.27E-2
GWP	kg CO2-eq	1.81E+0	2.57E-2	9.62E-2	1.93E+0	2.28E-2	6.42E-1	6.40E-3	-1.02E+0	1.58E+0
ODP	kg CFC-11-eq	9.65E-7	4.56E-9	7.60E-9	9.77E-7	4.23E-9	7.55E-8	2.19E-10	-4.93E-7	5.64E-7
POCP	kg ethene-eq	1.07E-3	1.55E-5	4.18E-5	1.13E-3	1.37E-5	1.48E-4	1.65E-6	-5.37E-4	7.56E-4
AP	kg SO2-eq	7.23E-3	1.13E-4	4.14E-4	7.75E-3	9.82E-5	1.07E-3	4.95E-6	-3.49E-3	5.44E-3
EP	kg PO4 3--eq	9.40E-4	2.22E-5	5.32E-5	1.02E-3	1.96E-5	1.64E-4	2.03E-6	-4.85E-4	7.15E-4
HTP	kg 1,4-DB-eq	6.95E-1	1.08E-2	4.47E-2	7.50E-1	9.76E-3	2.82E-1	5.27E-4	-3.27E-1	7.15E-1
FAETP	kg 1,4-DB-eq	2.17E-2	3.16E-4	1.53E-3	2.35E-2	2.86E-4	4.34E-3	1.81E-4	-9.76E-3	1.86E-2
MAETP	kg 1,4-DB-eq	4.92E+1	1.14E+0	6.01E+0	5.64E+1	1.02E+0	1.49E+1	2.15E-1	-2.12E+1	5.13E+1
TETP	kg 1,4-DB-eq	5.11E-3	3.83E-5	3.32E-3	8.47E-3	3.46E-5	9.97E-4	1.73E-6	-3.25E-3	6.25E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.87E+0	2.60E-2	1.10E-1	2.01E+0	2.30E-2	6.97E-1	7.47E-3	-9.31E-1	1.80E+0
GWP-f	kg CO2 eq	1.85E+0	2.59E-2	8.46E-2	1.96E+0	2.30E-2	6.47E-1	7.47E-3	-1.04E+0	1.60E+0
GWP-b	kg CO2 eq	1.74E-2	1.20E-5	1.75E-2	3.48E-2	1.40E-5	5.00E-2	9.25E-6	1.09E-1	1.94E-1
GWP-luluc	kg CO2 eq	2.17E-3	9.51E-6	8.03E-3	1.02E-2	8.14E-6	2.83E-4	1.92E-7	-1.43E-3	9.07E-3
ODP	kg CFC11 eq	9.54E-7	5.73E-9	8.94E-9	9.69E-7	5.30E-9	7.79E-8	2.72E-10	-4.88E-7	5.64E-7
AP	mol H+ eq	8.82E-3	1.50E-4	5.16E-4	9.48E-3	1.31E-4	1.35E-3	6.63E-6	-4.23E-3	6.73E-3
EP-fw	kg P eq	8.79E-5	2.62E-7	1.48E-6	8.96E-5	1.89E-7	9.47E-6	8.67E-9	-4.55E-5	5.38E-5
EP-m	kg N eq	1.59E-3	5.30E-5	1.22E-4	1.77E-3	4.69E-5	3.33E-4	4.26E-6	-7.63E-4	1.39E-3
EP-T	mol N eq	1.72E-2	5.85E-4	1.34E-3	1.91E-2	5.17E-4	3.67E-3	2.64E-5	-8.24E-3	1.50E-2
POCP	kg NMVOC eq	5.55E-3	1.67E-4	3.82E-4	6.10E-3	1.48E-4	1.10E-3	9.14E-6	-2.74E-3	4.62E-3
ADP-mm	kg Sb eq	1.74E-3	6.57E-7	2.95E-6	1.74E-3	5.95E-7	5.34E-6	6.64E-9	-2.05E-5	1.73E-3
ADP-f	MJ	4.66E+1	3.91E-1	9.46E-1	4.79E+1	3.53E-1	3.64E+0	1.99E-2	-2.51E+1	2.68E+1
WDP	m3 depriv.	2.92E+0	1.40E-3	7.32E-1	3.66E+0	1.08E-3	1.42E-1	1.28E-4	-1.56E+0	2.24E+0
PM	disease inc.	6.23E-8	2.33E-9	6.37E-9	7.10E-8	2.08E-9	1.68E-8	1.37E-10	-3.45E-8	5.56E-8
IR	kBq U-235 eq	1.05E-1	1.64E-3	1.50E-3	1.08E-1	1.54E-3	1.29E-2	9.16E-5	-5.18E-2	7.06E-2
ETP-fw	CTUe	5.78E+1	3.49E-1	2.20E+0	6.03E+1	2.87E-1	2.75E+1	3.03E-1	-2.21E+1	6.63E+1
HTP-c	CTUh	1.48E-9	1.13E-11	7.60E-11	1.57E-9	1.02E-11	4.08E-10	5.48E-13	-5.75E-10	1.41E-9
HTP-nc	CTUh	4.86E-8	3.82E-10	2.37E-9	5.14E-8	3.42E-10	9.68E-9	5.85E-11	-1.99E-8	4.16E-8
SQP	Pt	1.06E+1	3.39E-1	7.07E-2	1.10E+1	3.02E-1	2.24E+0	5.10E-2	-2.32E+1	-9.68E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.19E+0	4.90E-3	4.60E+0	7.79E+0	5.07E-3	2.60E-1	7.47E-4	-4.78E+0	3.28E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.19E+0	4.90E-3	4.60E+0	7.79E+0	5.07E-3	2.60E-1	7.47E-4	-4.78E+0	3.28E+0
PENRE	MJ	4.99E+1	4.15E-1	1.02E+0	5.14E+1	3.75E-1	3.88E+0	2.11E-2	-2.70E+1	2.86E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.99E+1	4.15E-1	1.02E+0	5.14E+1	3.75E-1	3.88E+0	2.11E-2	-2.70E+1	2.86E+1
PET	MJ	5.31E+1	4.20E-1	5.62E+0	5.92E+1	3.80E-1	4.14E+0	2.19E-2	-3.18E+1	3.19E+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	3.36E-2	4.77E-5	1.73E-2	5.10E-2	4.00E-5	3.89E-3	2.44E-5	-1.89E-2	3.60E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.49E-4	9.92E-7	1.00E-6	2.51E-4	9.03E-7	5.99E-6	2.42E-8	-2.07E-5	2.37E-4
NHWD	kg	1.91E-1	2.48E-2	1.55E-3	2.17E-1	2.19E-2	1.33E-1	8.75E-2	-8.30E-2	3.77E-1
RWD	kg	9.30E-5	2.57E-6	1.86E-6	9.74E-5	2.40E-6	1.39E-5	1.30E-7	-4.62E-5	6.76E-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



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