Environmental Profile

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

Ecochain v3.5.80

Product:	3000848 - PVC Mp Pipe BK 315x5.2 L=5 Uncert
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

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]

Statement of Confidentiality

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	7.87	0.21	0.35	8.43	0.13	2.81	0.02	-3.94	7.45
ADPE	kg Sb-eq	1.94E-3	4.38E-5	6.45E-5	2.05E-3	2.74E-5	2.30E-4	2.88E-7	-8.26E-4	1.48E-3
ADPF	kg Sb-eq	8.80E-1	1.26E-2	1.73E-2	9.10E-1	7.72E-3	8.09E-2	4.06E-4	-4.64E-1	5.35E-1
GWP	kg CO2-eq	7.07E+1	1.72E+0	3.07E+0	7.55E+1	1.05E+0	2.69E+1	2.58E-1	-3.91E+1	6.46E+1
ODP	kg CFC-11-eq	4.14E-5	3.04E-7	2.89E-7	4.20E-5	1.95E-7	3.26E-6	9.72E-9	-2.05E-5	2.49E-5
POCP	kg ethene-eq	4.35E-2	1.04E-3	1.35E-3	4.59E-2	6.31E-4	6.37E-3	6.84E-5	-2.00E-2	3.29E-2
AP	kg SO2-eq	2.74E-1	7.54E-3	1.21E-2	2.94E-1	4.52E-3	4.65E-2	2.16E-4	-1.29E-1	2.17E-1
EP	kg PO4 3−-eq	3.29E-2	1.48E-3	1.90E-3	3.63E-2	9.03E-4	7.05E-3	8.31E-5	-1.57E-2	2.86E-2
HTP	kg 1,4-DB-eq	2.79E+1	7.22E-1	1.16E+0	2.98E+1	4.50E-1	1.25E+1	2.22E-2	-1.25E+1	3.03E+1
FAETP	kg 1,4-DB-eq	5.98E-1	2.11E-2	4.72E-2	6.66E-1	1.32E-2	1.84E-1	6.57E-3	-2.73E-1	5.97E-1
MAETP	kg 1,4-DB-eq	1.76E+3	7.58E+1	1.93E+2	2.03E+3	4.70E+1	6.08E+2	8.07E+0	-8.03E+2	1.89E+3
TETP	kg 1,4-DB-eq	1.91E-1	2.55E-3	7.20E-2	2.66E-1	1.59E-3	4.46E-2	7.37E-5	-9.09E-2	2.21E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.71E+1	1.73E+0	3.62E+0	7.25E+1	1.06E+0	3.31E+1	3.00E-1	-4.03E+1	6.66E+1
GWP-f	kg CO2 eq	7.25E+1	1.73E+0	2.83E+0	7.70E+1	1.06E+0	2.71E+1	3.00E-1	-4.00E+1	6.55E+1
GWP-b	kg CO2 eq	-5.42E+0	7.99E-4	6.13E-1	-4.80E+0	6.44E-4	5.97E+0	3.85E-4	-2.82E-1	8.87E-1
GWP-luluc	kg CO2 eq	5.87E-2	6.34E-4	1.73E-1	2.32E-1	3.75E-4	1.25E-2	8.16E-6	-2.70E-2	2.18E-1
ODP	kg CFC11 eq	4.09E-5	3.82E-7	3.42E-7	4.16E-5	2.44E-7	3.37E-6	1.21E-8	-2.03E-5	2.50E-5
AP	mol H+ eq	3.30E-1	1.00E-2	1.55E-2	3.56E-1	6.04E-3	5.84E-2	2.90E-4	-1.55E-1	2.65E-1
EP-fw	kg P eq	3.19E-3	1.75E-5	4.05E-5	3.25E-3	8.72E-6	4.17E-4	3.67E-7	-1.50E-3	2.18E-3
EP-m	kg N eq	5.58E-2	3.54E-3	4.55E-3	6.39E-2	2.16E-3	1.42E-2	1.76E-4	-2.71E-2	5.34E-2
EP-T	mol N eq	6.05E-1	3.90E-2	4.88E-2	6.93E-1	2.38E-2	1.57E-1	1.16E-3	-2.93E-1	5.82E-1
POCP	kg NMVOC eq	2.09E-1	1.11E-2	1.38E-2	2.33E-1	6.80E-3	4.71E-2	3.94E-4	-9.95E-2	1.88E-1
ADP-mm	kg Sb eq	1.94E-3	4.38E-5	6.45E-5	2.05E-3	2.74E-5	2.30E-4	2.88E-7	-8.26E-4	1.48E-3
ADP-f	MJ	1.87E+3	2.61E+1	3.28E+1	1.93E+3	1.63E+1	1.60E+2	8.76E-1	-9.74E+2	1.13E+3
WDP	m3 depriv.	1.21E+2	9.33E-2	2.22E+1	1.43E+2	4.99E-2	6.22E+0	5.23E-3	-5.82E+1	9.14E+1
PM	disease inc.	2.51E-6	1.55E-7	2.40E-7	2.90E-6	9.57E-8	7.32E-7	6.00E-9	-1.01E-6	2.72E-6
IR	kBq U-235 eq	4.04E+0	1.09E-1	5.92E-2	4.21E+0	7.11E-2	5.60E-1	4.02E-3	-1.88E+0	2.96E+0
ETP-fw	CTUe	1.26E+3	2.33E+1	5.47E+1	1.34E+3	1.32E+1	1.19E+3	1.31E+1	-5.88E+2	1.97E+3
HTP-c	CTUh	5.01E-8	7.55E-10	1.87E-9	5.27E-8	4.70E-10	1.78E-8	2.31E-11	-2.17E-8	4.93E-8
HTP-nc	CTUh	1.57E-6	2.55E-8	5.71E-8	1.65E-6	1.57E-8	4.22E-7	2.53E-9	-7.48E-7	1.34E-6
SQP	Pt	7.72E+2	2.26E+1	2.45E+0	7.97E+2	1.39E+1	1.00E+2	2.22E+0	-2.20E+2	6.94E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.70E+2	3.27E-1	9.89E+1	2.69E+2	2.33E-1	1.15E+1	3.15E-2	-6.57E+1	2.15E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.70E+2	3.27E-1	9.89E+1	2.69E+2	2.33E-1	1.15E+1	3.15E-2	-6.57E+1	2.15E+2
PENRE	MJ	2.01E+3	2.77E+1	3.55E+1	2.07E+3	1.73E+1	1.71E+2	9.30E-1	-1.05E+3	1.21E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.01E+3	2.77E+1	3.55E+1	2.07E+3	1.73E+1	1.71E+2	9.30E-1	-1.05E+3	1.21E+3
PET	MJ	2.18E+3	2.80E+1	1.34E+2	2.34E+3	1.75E+1	1.82E+2	9.61E-1	-1.11E+3	1.43E+3
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	1.29E+0	3.18E-3	5.22E-1	1.82E+0	1.84E-3	1.70E-1	1.07E-3	-6.09E-1	1.38E+0
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.49E-3	6.61E-5	4.59E-5	1.60E-3	4.16E-5	2.58E-4	1.06E-6	-8.10E-4	1.09E-3
NHWD	kg	7.07E+0	1.66E+0	6.63E-2	8.79E+0	1.01E+0	5.98E+0	4.03E+0	-3.14E+0	1.67E+1
RWD	kg	3.63E-3	1.71E-4	8.25E-5	3.88E-3	1.11E-4	6.02E-4	5.72E-6	-1.66E-3	2.94E-3
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