Environmental Profile

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

Ecochain v3.5.80

Product:	3004170 - PVC RWA Reducer Sewer GY 125x100
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	0.03	0	0	0.03	0	0.01	0	-0.01	0.02
ADPE	kg Sb-eq	2.41E-4	8.48E-8	3.73E-7	2.41E-4	7.90E-8	7.20E-7	8.82E-10	-2.76E-6	2.39E-4
ADPF	kg Sb-eq	2.82E-3	2.44E-5	6.41E-5	2.91E-3	2.22E-5	2.48E-4	1.22E-6	-1.55E-3	1.63E-3
GWP	kg CO2-eq	2.37E-1	3.32E-3	1.22E-2	2.53E-1	3.03E-3	8.47E-2	8.31E-4	-1.33E-1	2.08E-1
ODP	kg CFC-11-eq	1.33E-7	5.89E-10	9.61E-10	1.35E-7	5.62E-10	1.04E-8	2.91E-11	-6.73E-8	7.86E-8
POCP	kg ethene-eq	1.36E-4	2.00E-6	5.28E-6	1.43E-4	1.82E-6	1.96E-5	2.16E-7	-6.93E-5	9.53E-5
AP	kg SO2-eq	9.50E-4	1.46E-5	5.23E-5	1.02E-3	1.30E-5	1.45E-4	6.58E-7	-4.57E-4	7.19E-4
EP	kg PO4 3−-eq	1.23E-4	2.87E-6	6.72E-6	1.32E-4	2.60E-6	2.20E-5	2.59E-7	-6.24E-5	9.49E-5
HTP	kg 1,4-DB-eq	9.26E-2	1.40E-3	5.65E-3	9.96E-2	1.30E-3	3.77E-2	6.91E-5	-4.35E-2	9.52E-2
FAETP	kg 1,4-DB-eq	2.83E-3	4.08E-5	1.93E-4	3.06E-3	3.80E-5	5.75E-4	2.13E-5	-1.24E-3	2.46E-3
MAETP	kg 1,4-DB-eq	6.55E+0	1.47E-1	7.60E-1	7.46E+0	1.36E-1	1.98E+0	2.60E-2	-2.82E+0	6.78E+0
TETP	kg 1,4-DB-eq	6.88E-4	4.94E-6	4.20E-4	1.11E-3	4.59E-6	1.34E-4	2.32E-7	-4.15E-4	8.37E-4
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.45E-1	3.35E-3	1.39E-2	2.62E-1	3.06E-3	9.08E-2	9.69E-4	-1.24E-1	2.33E-1
GWP-f	kg CO2 eq	2.42E-1	3.35E-3	1.07E-2	2.56E-1	3.05E-3	8.53E-2	9.69E-4	-1.36E-1	2.10E-1
GWP-b	kg CO2 eq	2.42E-3	1.54E-6	2.21E-3	4.63E-3	1.85E-6	5.53E-3	1.23E-6	1.19E-2	2.21E-2
GWP-luluc	kg CO2 eq	2.78E-4	1.23E-6	1.01E-3	1.29E-3	1.08E-6	3.86E-5	2.54E-8	-1.74E-4	1.16E-3
ODP	kg CFC11 eq	1.31E-7	7.39E-10	1.13E-9	1.33E-7	7.04E-10	1.07E-8	3.62E-11	-6.66E-8	7.82E-8
AP	mol H+ eq	1.16E-3	1.94E-5	6.52E-5	1.24E-3	1.74E-5	1.82E-4	8.80E-7	-5.53E-4	8.89E-4
EP-fw	kg P eq	1.18E-5	3.38E-8	1.87E-7	1.20E-5	2.51E-8	1.29E-6	1.15E-9	-5.93E-6	7.38E-6
EP-m	kg N eq	2.08E-4	6.84E-6	1.54E-5	2.31E-4	6.22E-6	4.45E-5	5.45E-7	-9.90E-5	1.83E-4
EP-T	mol N eq	2.24E-3	7.54E-5	1.70E-4	2.49E-3	6.86E-5	4.90E-4	3.51E-6	-1.07E-3	1.98E-3
POCP	kg NMVOC eq	7.16E-4	2.15E-5	4.83E-5	7.85E-4	1.96E-5	1.47E-4	1.21E-6	-3.54E-4	5.99E-4
ADP-mm	kg Sb eq	2.41E-4	8.48E-8	3.73E-7	2.41E-4	7.90E-8	7.20E-7	8.82E-10	-2.76E-6	2.39E-4
ADP-f	MJ	6.02E+0	5.05E-2	1.19E-1	6.19E+0	4.69E-2	4.90E-1	2.64E-3	-3.27E+0	3.46E+0
WDP	m3 depriv.	3.99E-1	1.81E-4	9.25E-2	4.91E-1	1.44E-4	1.94E-2	1.71E-5	-2.07E-1	3.04E-1
PM	disease inc.	7.86E-9	3.00E-10	8.05E-10	8.96E-9	2.76E-10	2.25E-9	1.82E-11	-4.33E-9	7.17E-9
IR	kBq U-235 eq	1.38E-2	2.11E-4	1.90E-4	1.42E-2	2.05E-4	1.74E-3	1.21E-5	-6.86E-3	9.29E-3
ETP-fw	CTUe	7.51E+0	4.50E-2	2.78E-1	7.84E+0	3.81E-2	3.82E+0	4.22E-2	-2.78E+0	8.96E+0
HTP-c	CTUh	2.01E-10	1.46E-12	9.61E-12	2.12E-10	1.35E-12	5.46E-11	7.30E-14	-7.64E-11	1.91E-10
HTP-nc	CTUh	6.63E-9	4.92E-11	3.00E-10	6.98E-9	4.54E-11	1.32E-9	8.08E-12	-2.64E-9	5.72E-9
SQP	Pt	1.30E+0	4.38E-2	8.93E-3	1.35E+0	4.01E-2	2.99E-1	6.77E-3	-2.64E+0	-9.42E-1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.07E-1	6.32E-4	5.81E-1	9.88E-1	6.72E-4	3.55E-2	9.86E-5	-5.54E-1	4.70E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.07E-1	6.32E-4	5.81E-1	9.88E-1	6.72E-4	3.55E-2	9.86E-5	-5.54E-1	4.70E-1
PENRE	MJ	6.45E+0	5.36E-2	1.29E-1	6.64E+0	4.98E-2	5.22E-1	2.80E-3	-3.52E+0	3.70E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.45E+0	5.36E-2	1.29E-1	6.64E+0	4.98E-2	5.22E-1	2.80E-3	-3.52E+0	3.70E+0
PET	MJ	6.86E+0	5.42E-2	7.10E-1	7.63E+0	5.04E-2	5.57E-1	2.90E-3	-4.07E+0	4.17E+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	4.48E-3	6.15E-6	2.19E-3	6.67E-3	5.30E-6	5.32E-4	3.24E-6	-2.44E-3	4.77E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.46E-5	1.28E-7	1.27E-7	3.48E-5	1.20E-7	8.03E-7	3.22E-9	-2.77E-6	3.30E-5
NHWD	kg	2.53E-2	3.20E-3	1.96E-4	2.87E-2	2.91E-3	1.77E-2	1.16E-2	-1.10E-2	4.99E-2
RWD	kg	1.20E-5	3.31E-7	2.35E-7	1.26E-5	3.19E-7	1.86E-6	1.72E-8	-6.10E-6	8.66E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777