Environmental Profile

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

Ecochain v3.5.80

Ecochain

Product:	3000690 - PVC Pipe BR BENOR 160x3.2 SN2 L=5 SC/CH	
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
An Orbia business.

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

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	2.46	0.06	0.11	2.63	0.04	0.89	0.01	-1.23	2.33
ADPE	kg Sb-eq	6.60E-4	1.36E-5	2.02E-5	6.94E-4	8.61E-6	7.21E-5	9.04E-8	-2.60E-4	5.15E-4
ADPF	kg Sb-eq	2.74E-1	3.93E-3	5.41E-3	2.83E-1	2.42E-3	2.54E-2	1.27E-4	-1.46E-1	1.66E-1
GWP	kg CO2-eq	2.21E+1	5.34E-1	9.62E-1	2.36E+1	3.30E-1	8.53E+0	8.09E-2	-1.23E+1	2.03E+1
ODP	kg CFC-11-eq	1.29E-5	9.48E-8	9.04E-8	1.31E-5	6.12E-8	1.03E-6	3.06E-9	-6.42E-6	7.80E-6
POCP	kg ethene-eq	1.36E-2	3.22E-4	4.24E-4	1.43E-2	1.98E-4	1.99E-3	2.15E-5	-6.24E-3	1.03E-2
AP	kg SO2-eq	8.54E-2	2.35E-3	3.78E-3	9.15E-2	1.42E-3	1.46E-2	6.80E-5	-4.00E-2	6.76E-2
EP	kg PO4 3--eq	1.02E-2	4.61E-4	5.96E-4	1.12E-2	2.84E-4	2.20E-3	2.63E-5	-4.82E-3	8.92E-3
HTP	kg 1,4-DB-eq	8.70E+0	2.25E-1	3.63E-1	9.28E+0	1.41E-1	3.91E+0	6.98E-3	-3.89E+0	9.46E+0
FAETP	kg 1,4-DB-eq	1.88E-1	6.56E-3	1.48E-2	2.09E-1	4.14E-3	5.76E-2	2.06E-3	-8.52E-2	1.88E-1
MAETP	kg 1,4-DB-eq	5.47E+2	2.36E+1	6.03E+1	6.31E+2	1.48E+1	1.91E+2	2.53E+0	-2.51E+2	5.88E+2
TETP	kg 1,4-DB-eq	5.99E-2	7.95E-4	2.26E-2	8.32E-2	5.00E-4	1.40E-2	2.32E-5	-2.83E-2	6.94E-2
Environmental impact	**Unit**	**A1**	**A2**	**A3**	**A1-A3**	**C2**	**C3**	**C4**	**D**	**Total**
GWP-total	kg CO2 eq	2.20E+1	5.39E-1	1.13E+0	2.37E+1	3.33E-1	9.45E+0	9.42E-2	-1.27E+1	2.09E+1
GWP-f	kg CO2 eq	2.27E+1	5.39E-1	8.88E-1	2.41E+1	3.33E-1	8.60E+0	9.42E-2	-1.26E+1	2.06E+1
GWP-b	kg CO2 eq	-6.76E-1	2.49E-4	1.92E-1	-4.84E-1	2.02E-4	8.50E-1	1.21E-4	-8.83E-2	2.79E-1
GWP-luluc	kg CO2 eq	1.80E-2	1.97E-4	5.41E-2	7.23E-2	1.18E-4	3.94E-3	2.55E-6	-8.32E-3	6.81E-2
ODP	kg CFC11 eq	1.28E-5	1.19E-7	1.07E-7	1.30E-5	7.67E-8	1.06E-6	3.80E-9	-6.35E-6	7.77E-6
AP	mol H+ eq	1.03E-1	3.12E-3	4.84E-3	1.11E-1	1.90E-3	1.83E-2	9.10E-5	-4.82E-2	8.29E-2
EP-fw	kg P eq	1.00E-3	5.43E-6	1.27E-5	1.02E-3	2.74E-6	1.31E-4	1.15E-7	-4.68E-4	6.86E-4
EP-m	kg N eq	1.73E-2	1.10E-3	1.43E-3	1.98E-2	6.78E-4	4.44E-3	5.57E-5	-8.38E-3	1.66E-2
EP-T	mol N eq	1.87E-1	1.21E-2	1.53E-2	2.14E-1	7.47E-3	4.89E-2	3.64E-4	-8.97E-2	1.81E-1
POCP	kg NMVOC eq	6.47E-2	3.46E-3	4.32E-3	7.25E-2	2.14E-3	1.47E-2	1.24E-4	-3.08E-2	5.86E-2
ADP-mm	kg Sb eq	6.60E-4	1.36E-5	2.02E-5	6.94E-4	8.61E-6	7.21E-5	9.04E-8	-2.60E-4	5.15E-4
ADP-f	MJ	5.83E+2	8.12E+0	1.03E+1	6.01E+2	5.11E+0	5.03E+1	2.75E-1	-3.06E+2	3.51E+2
WDP	m3 depriv.	3.82E+1	2.91E-2	6.95E+0	4.52E+1	1.57E-2	1.96E+0	1.59E-3	-1.82E+1	2.89E+1
PM	disease inc.	7.19E-7	4.84E-8	7.51E-8	8.42E-7	3.00E-8	2.29E-7	1.89E-9	-3.10E-7	7.93E-7
IR	kBq U-235 eq	1.24E+0	3.40E-2	1.85E-2	1.29E+0	2.23E-2	1.76E-1	1.26E-3	-5.90E-1	9.00E-1
ETP-fw	CTUe	3.91E+2	7.24E+0	1.71E+1	4.16E+2	4.15E+0	3.76E+2	4.14E+0	-1.80E+2	6.19E+2
HTP-c	CTUh	1.55E-8	2.35E-10	5.85E-10	1.63E-8	1.48E-10	5.49E-9	7.21E-12	-6.73E-9	1.52E-8
HTP-nc	CTUh	4.92E-7	7.92E-9	1.79E-8	5.18E-7	4.94E-9	1.32E-7	7.95E-10	-2.33E-7	4.23E-7
SQP	Pt	1.49E+2	7.05E+0	7.69E-1	1.57E+2	4.37E+0	3.14E+1	6.99E-1	-4.92E+1	1.45E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.96E+1	1.02E-1	3.10E+1	7.07E+1	7.33E-2	3.60E+0	9.93E-3	-1.66E+1	5.78E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.96E+1	1.02E-1	3.10E+1	7.07E+1	7.33E-2	3.60E+0	9.93E-3	-1.66E+1	5.78E+1
PENRE	MJ	6.25E+2	8.62E+0	1.11E+1	6.45E+2	5.42E+0	5.35E+1	2.92E-1	-3.29E+2	3.75E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.25E+2	8.62E+0	1.11E+1	6.45E+2	5.42E+0	5.35E+1	2.92E-1	-3.29E+2	3.75E+2
PET	MJ	6.65E+2	8.73E+0	4.21E+1	7.16E+2	5.50E+0	5.71E+1	3.02E-1	-3.46E+2	4.33E+2
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	4.09E-1	9.89E-4	1.64E-1	5.73E-1	5.78E-4	5.36E-2	3.37E-4	-1.91E-1	4.37E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.62E-4	2.06E-5	1.44E-5	4.97E-4	1.31E-5	8.10E-5	3.32E-7	-2.54E-4	3.37E-4
NHWD	kg	2.20E+0	5.15E-1	2.08E-2	2.73E+0	3.17E-1	1.86E+0	1.27E+0	-9.77E-1	5.20E+0
RWD	kg	1.09E-3	5.33E-5	2.58E-5	1.17E-3	3.47E-5	1.88E-4	1.80E-6	-5.20E-4	8.73E-4
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