

Environmental Profile

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

Ecochain v3.5.80



Product: 3004138 - PVC Bend RWA 45° GY 100 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	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]

Statement of Confidentiality

This document and supporting material contain confidential and proprietary business information of Wavin - NL - Hardenberg - Verified. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - NL - Hardenberg - Verified.

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.04	0	0	0.04	0	0.01	0	-0.02	0.03
ADPE	kg Sb-eq	3.32E-4	1.22E-7	5.09E-7	3.32E-4	1.09E-7	1.01E-6	1.22E-9	-3.87E-6	3.30E-4
ADPF	kg Sb-eq	3.96E-3	3.51E-5	8.75E-5	4.08E-3	3.07E-5	3.47E-4	1.69E-6	-2.17E-3	2.29E-3
GWP	kg CO2-eq	3.36E-1	4.77E-3	1.66E-2	3.58E-1	4.18E-3	1.18E-1	1.15E-3	-1.89E-1	2.91E-1
ODP	kg CFC-11-eq	1.85E-7	8.47E-10	1.31E-9	1.87E-7	7.75E-10	1.45E-8	4.02E-11	-9.35E-8	1.09E-7
POCP	kg ethene-eq	1.91E-4	2.88E-6	7.21E-6	2.01E-4	2.51E-6	2.79E-5	2.97E-7	-9.99E-5	1.32E-4
AP	kg SO2-eq	1.35E-3	2.10E-5	7.14E-5	1.44E-3	1.80E-5	2.03E-4	9.07E-7	-6.68E-4	9.92E-4
EP	kg PO4 3--eq	1.80E-4	4.12E-6	9.17E-6	1.93E-4	3.59E-6	3.11E-5	3.58E-7	-9.69E-5	1.32E-4
HTP	kg 1,4-DB-eq	1.31E-1	2.01E-3	7.71E-3	1.41E-1	1.79E-3	5.27E-2	9.53E-5	-6.29E-2	1.32E-1
FAETP	kg 1,4-DB-eq	4.28E-3	5.87E-5	2.63E-4	4.61E-3	5.23E-5	8.08E-4	2.93E-5	-2.01E-3	3.49E-3
MAETP	kg 1,4-DB-eq	9.28E+0	2.11E-1	1.04E+0	1.05E+1	1.87E-1	2.84E+0	3.59E-2	-4.08E+0	9.51E+0
TETP	kg 1,4-DB-eq	9.89E-4	7.10E-6	5.73E-4	1.57E-3	6.33E-6	1.86E-4	3.20E-7	-6.72E-4	1.09E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.47E-1	4.82E-3	1.90E-2	3.71E-1	4.22E-3	1.31E-1	1.34E-3	-1.67E-1	3.41E-1
GWP-f	kg CO2 eq	3.44E-1	4.81E-3	1.46E-2	3.63E-1	4.21E-3	1.18E-1	1.34E-3	-1.93E-1	2.94E-1
GWP-b	kg CO2 eq	3.50E-3	2.22E-6	3.01E-3	6.51E-3	2.56E-6	1.22E-2	1.69E-6	2.68E-2	4.55E-2
GWP-luluc	kg CO2 eq	4.41E-4	1.76E-6	1.39E-3	1.83E-3	1.49E-6	5.35E-5	3.51E-8	-3.12E-4	1.57E-3
ODP	kg CFC11 eq	1.83E-7	1.06E-9	1.54E-9	1.85E-7	9.71E-10	1.49E-8	4.99E-11	-9.25E-8	1.09E-7
AP	mol H+ eq	1.65E-3	2.79E-5	8.90E-5	1.76E-3	2.40E-5	2.56E-4	1.21E-6	-8.12E-4	1.23E-3
EP-fw	kg P eq	1.69E-5	4.86E-8	2.56E-7	1.72E-5	3.47E-8	1.80E-6	1.59E-9	-9.07E-6	9.93E-6
EP-m	kg N eq	3.05E-4	9.84E-6	2.10E-5	3.36E-4	8.58E-6	6.32E-5	7.52E-7	-1.48E-4	2.60E-4
EP-T	mol N eq	3.26E-3	1.08E-4	2.32E-4	3.60E-3	9.46E-5	6.96E-4	4.84E-6	-1.60E-3	2.79E-3
POCP	kg NMVOC eq	1.02E-3	3.10E-5	6.60E-5	1.12E-3	2.70E-5	2.08E-4	1.67E-6	-5.20E-4	8.36E-4
ADP-mm	kg Sb eq	3.32E-4	1.22E-7	5.09E-7	3.32E-4	1.09E-7	1.01E-6	1.22E-9	-3.87E-6	3.30E-4
ADP-f	MJ	8.43E+0	7.26E-2	1.63E-1	8.67E+0	6.47E-2	6.86E-1	3.64E-3	-4.60E+0	4.82E+0
WDP	m3 depriv.	5.53E-1	2.60E-4	1.26E-1	6.80E-1	1.98E-4	2.69E-2	2.36E-5	-3.00E-1	4.07E-1
PM	disease inc.	1.16E-8	4.32E-10	1.10E-9	1.31E-8	3.80E-10	3.18E-9	2.51E-11	-6.95E-9	9.78E-9
IR	kBq U-235 eq	1.95E-2	3.04E-4	2.59E-4	2.00E-2	2.83E-4	2.44E-3	1.67E-5	-1.01E-2	1.27E-2
ETP-fw	CTUe	1.16E+1	6.47E-2	3.79E-1	1.21E+1	5.25E-2	5.29E+0	5.82E-2	-4.62E+0	1.29E+1
HTP-c	CTUh	2.82E-10	2.10E-12	1.31E-11	2.97E-10	1.87E-12	7.66E-11	1.01E-13	-1.11E-10	2.64E-10
HTP-nc	CTUh	9.29E-9	7.08E-11	4.10E-10	9.77E-9	6.26E-11	1.84E-9	1.11E-11	-3.85E-9	7.84E-9
SQP	Pt	2.20E+0	6.30E-2	1.22E-2	2.28E+0	5.53E-2	4.18E-1	9.33E-3	-5.50E+0	-2.73E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.47E-1	9.09E-4	7.93E-1	1.44E+0	9.27E-4	4.92E-2	1.36E-4	-1.10E+0	3.90E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.47E-1	9.09E-4	7.93E-1	1.44E+0	9.27E-4	4.92E-2	1.36E-4	-1.10E+0	3.90E-1
PENRE	MJ	9.05E+0	7.71E-2	1.76E-1	9.30E+0	6.86E-2	7.30E-1	3.87E-3	-4.95E+0	5.15E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.05E+0	7.71E-2	1.76E-1	9.30E+0	6.86E-2	7.30E-1	3.87E-3	-4.95E+0	5.15E+0
PET	MJ	9.69E+0	7.80E-2	9.70E-1	1.07E+1	6.96E-2	7.79E-1	4.00E-3	-6.05E+0	5.54E+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	6.30E-3	8.84E-6	2.99E-3	9.29E-3	7.32E-6	7.38E-4	4.46E-6	-3.76E-3	6.29E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.79E-5	1.84E-7	1.73E-7	4.83E-5	1.65E-7	1.13E-6	4.44E-9	-3.95E-6	4.56E-5
NHWD	kg	3.67E-2	4.61E-3	2.68E-4	4.15E-2	4.01E-3	2.48E-2	1.60E-2	-1.60E-2	7.03E-2
RWD	kg	1.70E-5	4.77E-7	3.21E-7	1.78E-5	4.40E-7	2.63E-6	2.37E-8	-9.02E-6	1.19E-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



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