Environmental Profile

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

Ecochain v3.5.80

Product:	3052458 - WfxPVC Coupler BR/GY 110 SN8
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	0.05	0	0	0.06	0	0.02	0	-0.03	0.05
ADPE	kg Sb-eq	3.81E-4	1.82E-7	9.03E-7	3.83E-4	1.59E-7	1.28E-6	1.77E-9	-4.94E-6	3.79E-4
ADPF	kg Sb-eq	6.32E-3	5.24E-5	1.55E-4	6.53E-3	4.47E-5	4.47E-4	2.45E-6	-3.34E-3	3.69E-3
GWP	kg CO2-eq	4.82E-1	7.13E-3	2.94E-2	5.19E-1	6.08E-3	1.75E-1	1.86E-3	-2.71E-1	4.31E-1
ODP	kg CFC-11-eq	2.12E-7	1.27E-9	2.33E-9	2.16E-7	1.13E-9	1.66E-8	5.85E-11	-1.14E-7	1.19E-7
POCP	kg ethene-eq	3.32E-4	4.30E-6	1.28E-5	3.49E-4	3.65E-6	3.69E-5	4.64E-7	-1.48E-4	2.42E-4
AP	kg SO2-eq	1.91E-3	3.14E-5	1.27E-4	2.07E-3	2.62E-5	2.56E-4	1.32E-6	-8.83E-4	1.47E-3
EP	kg PO4 3−-eq	2.37E-4	6.16E-6	1.63E-5	2.60E-4	5.23E-6	3.99E-5	6.19E-7	-1.17E-4	1.89E-4
HTP	kg 1,4-DB-eq	1.74E-1	3.00E-3	1.37E-2	1.90E-1	2.60E-3	7.15E-2	1.48E-4	-7.88E-2	1.86E-1
FAETP	kg 1,4-DB-eq	5.13E-3	8.76E-5	4.67E-4	5.69E-3	7.62E-5	1.14E-3	7.11E-5	-2.24E-3	4.73E-3
MAETP	kg 1,4-DB-eq	1.23E+1	3.15E-1	1.84E+0	1.45E+1	2.72E-1	3.63E+0	7.86E-2	-5.08E+0	1.34E+1
TETP	kg 1,4-DB-eq	1.17E-3	1.06E-5	1.02E-3	2.20E-3	9.22E-6	2.48E-4	4.43E-7	-7.35E-4	1.72E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	4.98E-1	7.20E-3	3.37E-2	5.39E-1	6.14E-3	1.86E-1	2.17E-3	-2.56E-1	4.78E-1
GWP-f	kg CO2 eq	4.95E-1	7.19E-3	2.59E-2	5.28E-1	6.13E-3	1.76E-1	2.17E-3	-2.77E-1	4.35E-1
GWP-b	kg CO2 eq	3.19E-3	3.32E-6	5.34E-3	8.54E-3	3.72E-6	1.01E-2	2.49E-6	2.19E-2	4.06E-2
GWP-luluc	kg CO2 eq	4.99E-4	2.64E-6	2.46E-3	2.96E-3	2.17E-6	6.66E-5	5.08E-8	-3.15E-4	2.71E-3
ODP	kg CFC11 eq	2.11E-7	1.59E-9	2.74E-9	2.16E-7	1.41E-9	1.72E-8	7.26E-11	-1.13E-7	1.21E-7
AP	mol H+ eq	2.32E-3	4.17E-5	1.58E-4	2.52E-3	3.49E-5	3.22E-4	1.76E-6	-1.07E-3	1.81E-3
EP-fw	kg P eq	2.10E-5	7.25E-8	4.54E-7	2.15E-5	5.05E-8	2.19E-6	2.31E-9	-1.06E-5	1.31E-5
EP-m	kg N eq	4.05E-4	1.47E-5	3.73E-5	4.57E-4	1.25E-5	8.13E-5	1.31E-6	-1.92E-4	3.61E-4
EP-T	mol N eq	4.42E-3	1.62E-4	4.11E-4	4.99E-3	1.38E-4	8.95E-4	7.05E-6	-2.07E-3	3.96E-3
POCP	kg NMVOC eq	1.56E-3	4.63E-5	1.17E-4	1.72E-3	3.94E-5	2.70E-4	2.48E-6	-7.20E-4	1.31E-3
ADP-mm	kg Sb eq	3.81E-4	1.82E-7	9.03E-7	3.83E-4	1.59E-7	1.28E-6	1.77E-9	-4.94E-6	3.79E-4
ADP-f	MJ	1.34E+1	1.08E-1	2.89E-1	1.38E+1	9.41E-2	8.90E-1	5.31E-3	-7.00E+0	7.83E+0
WDP	m3 depriv.	6.87E-1	3.88E-4	2.24E-1	9.11E-1	2.89E-4	3.22E-2	3.21E-5	-3.75E-1	5.69E-1
PM	disease inc.	1.79E-8	6.46E-10	1.95E-9	2.05E-8	5.54E-10	4.18E-9	3.65E-11	-8.56E-9	1.67E-8
IR	kBq U-235 eq	2.78E-2	4.54E-4	4.60E-4	2.87E-2	4.11E-4	3.08E-3	2.45E-5	-1.23E-2	1.99E-2
ETP-fw	CTUe	1.32E+1	9.67E-2	6.72E-1	1.40E+1	7.64E-2	5.90E+0	6.46E-2	-4.99E+0	1.50E+1
HTP-c	CTUh	3.48E-10	3.14E-12	2.33E-11	3.75E-10	2.72E-12	1.01E-10	1.43E-13	-1.37E-10	3.42E-10
HTP-nc	CTUh	1.11E-8	1.06E-10	7.27E-10	1.20E-8	9.11E-11	2.23E-9	1.29E-11	-4.68E-9	9.61E-9
SQP	Pt	2.54E+0	9.41E-2	2.16E-2	2.66E+0	8.05E-2	5.71E-1	1.36E-2	-4.83E+0	-1.50E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.56E-1	1.36E-3	1.41E+0	2.16E+0	1.35E-3	6.07E-2	2.04E-4	-1.01E+0	1.21E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.56E-1	1.36E-3	1.41E+0	2.16E+0	1.35E-3	6.07E-2	2.04E-4	-1.01E+0	1.21E+0
PENRE	MJ	1.44E+1	1.15E-1	3.13E-1	1.48E+1	1.00E-1	9.48E-1	5.63E-3	-7.54E+0	8.35E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.44E+1	1.15E-1	3.13E-1	1.48E+1	1.00E-1	9.48E-1	5.63E-3	-7.54E+0	8.35E+0
PET	MJ	1.52E+1	1.17E-1	1.72E+0	1.70E+1	1.01E-1	1.01E+0	5.84E-3	-8.55E+0	9.56E+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	8.54E-3	1.32E-5	5.30E-3	1.38E-2	1.07E-5	8.98E-4	6.52E-6	-4.55E-3	1.02E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.29E-5	2.75E-7	3.07E-7	5.35E-5	2.41E-7	1.47E-6	6.44E-9	-5.02E-6	5.02E-5
NHWD	kg	4.58E-2	6.88E-3	4.75E-4	5.32E-2	5.84E-3	3.43E-2	2.33E-2	-1.98E-2	9.69E-2
RWD	kg	2.65E-5	7.12E-7	5.70E-7	2.78E-5	6.40E-7	3.39E-6	3.46E-8	-1.09E-5	2.09E-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

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