Environmental Profile

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

Ecochain v3.5.80

Product:	3004151 - PVC RWA Tee 45° GY 60 S/RSP
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	0.02	0	0	0.03	0	0.01	0	-0.01	0.02
ADPE	kg Sb-eq	2.14E-4	7.76E-8	3.25E-7	2.14E-4	7.01E-8	6.49E-7	7.83E-10	-2.48E-6	2.12E-4
ADPF	kg Sb-eq	2.54E-3	2.23E-5	5.59E-5	2.62E-3	1.97E-5	2.22E-4	1.08E-6	-1.39E-3	1.47E-3
GWP	kg CO2-eq	2.15E-1	3.04E-3	1.06E-2	2.28E-1	2.69E-3	7.57E-2	7.38E-4	-1.21E-1	1.87E-1
ODP	kg CFC-11-eq	1.19E-7	5.39E-10	8.38E-10	1.20E-7	4.99E-10	9.30E-9	2.59E-11	-6.01E-8	7.00E-8
POCP	kg ethene-eq	1.22E-4	1.83E-6	4.61E-6	1.29E-4	1.61E-6	1.78E-5	1.92E-7	-6.35E-5	8.50E-5
AP	kg SO2-eq	8.60E-4	1.33E-5	4.56E-5	9.19E-4	1.16E-5	1.30E-4	5.84E-7	-4.23E-4	6.39E-4
EP	kg PO4 3−-eq	1.14E-4	2.62E-6	5.86E-6	1.22E-4	2.31E-6	1.99E-5	2.30E-7	-6.03E-5	8.45E-5
HTP	kg 1,4-DB-eq	8.36E-2	1.28E-3	4.93E-3	8.98E-2	1.15E-3	3.38E-2	6.13E-5	-4.00E-2	8.49E-2
FAETP	kg 1,4-DB-eq	2.68E-3	3.73E-5	1.68E-4	2.89E-3	3.37E-5	5.18E-4	1.89E-5	-1.24E-3	2.23E-3
MAETP	kg 1,4-DB-eq	5.93E+0	1.34E-1	6.63E-1	6.73E+0	1.20E-1	1.81E+0	2.31E-2	-2.59E+0	6.09E+0
TETP	kg 1,4-DB-eq	6.29E-4	4.52E-6	3.66E-4	1.00E-3	4.08E-6	1.20E-4	2.06E-7	-4.13E-4	7.10E-4
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.22E-1	3.06E-3	1.21E-2	2.37E-1	2.71E-3	8.32E-2	8.61E-4	-1.08E-1	2.16E-1
GWP-f	kg CO2 eq	2.20E-1	3.06E-3	9.33E-3	2.32E-1	2.71E-3	7.62E-2	8.60E-4	-1.23E-1	1.88E-1
GWP-b	kg CO2 eq	2.22E-3	1.41E-6	1.92E-3	4.14E-3	1.65E-6	6.94E-3	1.09E-6	1.53E-2	2.63E-2
GWP-luluc	kg CO2 eq	2.73E-4	1.12E-6	8.85E-4	1.16E-3	9.60E-7	3.44E-5	2.26E-8	-1.87E-4	1.01E-3
ODP	kg CFC11 eq	1.17E-7	6.76E-10	9.85E-10	1.19E-7	6.25E-10	9.58E-9	3.21E-11	-5.94E-8	6.98E-8
AP	mol H+ eq	1.05E-3	1.78E-5	5.69E-5	1.13E-3	1.54E-5	1.64E-4	7.81E-7	-5.13E-4	7.92E-4
EP-fw	kg P eq	1.07E-5	3.09E-8	1.63E-7	1.09E-5	2.23E-8	1.15E-6	1.02E-9	-5.66E-6	6.44E-6
EP-m	kg N eq	1.93E-4	6.26E-6	1.34E-5	2.13E-4	5.53E-6	4.03E-5	4.84E-7	-9.30E-5	1.66E-4
EP-T	mol N eq	2.07E-3	6.90E-5	1.48E-4	2.28E-3	6.09E-5	4.44E-4	3.12E-6	-1.01E-3	1.79E-3
POCP	kg NMVOC eq	6.52E-4	1.97E-5	4.21E-5	7.14E-4	1.74E-5	1.33E-4	1.07E-6	-3.29E-4	5.36E-4
ADP-mm	kg Sb eq	2.14E-4	7.76E-8	3.25E-7	2.14E-4	7.01E-8	6.49E-7	7.83E-10	-2.48E-6	2.12E-4
ADP-f	MJ	5.41E+0	4.62E-2	1.04E-1	5.56E+0	4.16E-2	4.40E-1	2.35E-3	-2.94E+0	3.10E+0
WDP	m3 depriv.	3.55E-1	1.65E-4	8.07E-2	4.36E-1	1.28E-4	1.73E-2	1.52E-5	-1.90E-1	2.64E-1
PM	disease inc.	7.33E-9	2.75E-10	7.02E-10	8.31E-9	2.45E-10	2.03E-9	1.61E-11	-4.28E-9	6.32E-9
IR	kBq U-235 eq	1.24E-2	1.93E-4	1.66E-4	1.28E-2	1.82E-4	1.56E-3	1.08E-5	-6.38E-3	8.19E-3
ETP-fw	CTUe	7.25E+0	4.12E-2	2.42E-1	7.53E+0	3.38E-2	3.40E+0	3.75E-2	-2.82E+0	8.18E+0
HTP-c	CTUh	1.80E-10	1.34E-12	8.38E-12	1.90E-10	1.20E-12	4.91E-11	6.48E-14	-7.05E-11	1.70E-10
HTP-nc	CTUh	5.96E-9	4.50E-11	2.62E-10	6.26E-9	4.03E-11	1.18E-9	7.18E-12	-2.44E-9	5.05E-9
SQP	Pt	1.34E+0	4.01E-2	7.79E-3	1.39E+0	3.56E-2	2.68E-1	6.01E-3	-3.18E+0	-1.48E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.00E-1	5.78E-4	5.07E-1	9.07E-1	5.97E-4	3.16E-2	8.76E-5	-6.43E-1	2.96E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.00E-1	5.78E-4	5.07E-1	9.07E-1	5.97E-4	3.16E-2	8.76E-5	-6.43E-1	2.96E-1
PENRE	MJ	5.80E+0	4.90E-2	1.13E-1	5.96E+0	4.42E-2	4.68E-1	2.49E-3	-3.17E+0	3.31E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.80E+0	4.90E-2	1.13E-1	5.96E+0	4.42E-2	4.68E-1	2.49E-3	-3.17E+0	3.31E+0
PET	MJ	6.20E+0	4.96E-2	6.20E-1	6.87E+0	4.48E-2	4.99E-1	2.58E-3	-3.81E+0	3.60E+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	4.03E-3	5.62E-6	1.91E-3	5.95E-3	4.71E-6	4.74E-4	2.87E-6	-2.34E-3	4.09E-3
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.08E-5	1.17E-7	1.11E-7	3.10E-5	1.06E-7	7.24E-7	2.86E-9	-2.52E-6	2.93E-5
NHWD	kg	2.33E-2	2.93E-3	1.71E-4	2.64E-2	2.58E-3	1.59E-2	1.03E-2	-1.02E-2	4.50E-2
RWD	kg	1.09E-5	3.03E-7	2.05E-7	1.14E-5	2.83E-7	1.68E-6	1.53E-8	-5.69E-6	7.66E-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