Environmental Profile

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

Ecochain v3.5.80

Product:	3017570 - PVCU Branch 87° BR 315x110 SN4 UD
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

PVC external sewage pipes with a solid wall are produced in two classes of circumferential stiffness (SN8, SN4), which enables optimal selection depending on the load conditions. A wide portfolio of system fittings facilitates the construction of many schemes of sewage networks, as well as connections with systems made of other materials. Diameter range DN/OD 110-500mm. The pipes meet the requirements of the PN-EN 1401-1 standard.

LCA standard:	EN15804+A2 (2019)
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 - PL -Buk - Extra products (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

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	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.43E+1	1.17E-1	5.92E-2	1.45E+1	2.12E-1	7.38E+0	6.00E-2	-8.12E+0	1.40E+1
GWP-f	kg CO2 eq	1.52E+1	1.17E-1	5.98E-2	1.54E+1	2.12E-1	6.29E+0	5.99E-2	-8.07E+0	1.39E+1
GWP-b	kg CO2 eq	-9.73E-1	7.08E-5	-6.31E-4	-9.73E-1	1.29E-4	1.09E+0	7.61E-5	-5.31E-2	6.17E-2
GWP-luluc	kg CO2 eq	1.21E-2	4.13E-5	6.11E-5	1.22E-2	7.51E-5	2.42E-3	1.63E-6	-5.13E-3	9.53E-3
ODP	kg CFC11 eq	7.96E-6	2.69E-8	3.38E-9	8.00E-6	4.89E-8	6.42E-7	2.43E-9	-3.88E-6	4.81E-6
AP	mol H+ eq	6.96E-2	6.64E-4	6.03E-4	7.09E-2	1.21E-3	1.14E-2	5.82E-5	-2.98E-2	5.38E-2
EP-fw	kg P eq	6.45E-4	9.60E-7	3.37E-6	6.50E-4	1.75E-6	8.01E-5	7.33E-8	-2.85E-4	4.47E-4
EP-m	kg N eq	1.18E-2	2.38E-4	6.34E-5	1.21E-2	4.32E-4	2.82E-3	3.76E-5	-5.26E-3	1.01E-2
EP-T	mol N eq	1.28E-1	2.62E-3	7.58E-4	1.32E-1	4.77E-3	3.11E-2	2.33E-4	-5.68E-2	1.11E-1
POCP	kg NMVOC eq	4.55E-2	7.49E-4	2.57E-4	4.65E-2	1.36E-3	9.32E-3	7.91E-5	-1.93E-2	3.80E-2
ADP-mm	kg Sb eq	1.17E-3	3.02E-6	8.04E-6	1.18E-3	5.49E-6	4.46E-5	5.77E-8	-1.66E-4	1.06E-3
ADP-f	MJ	3.90E+2	1.79E+0	5.55E-1	3.93E+2	3.26E+0	3.13E+1	1.76E-1	-1.93E+2	2.34E+2
WDP	m3 depriv.	2.36E+1	5.49E-3	2.13E-2	2.36E+1	9.99E-3	1.20E+0	1.05E-3	-1.10E+1	1.38E+1
PM	disease inc.	5.36E-7	1.05E-8	3.71E-9	5.50E-7	1.92E-8	1.44E-7	1.20E-9	-1.94E-7	5.20E-7
IR	kBq U-235 eq	8.47E-1	7.83E-3	4.16E-4	8.55E-1	1.42E-2	1.09E-1	8.07E-4	-3.61E-1	6.19E-1
ETP-fw	CTUe	2.69E+2	1.45E+0	4.94E+0	2.75E+2	2.64E+0	2.27E+2	2.48E+0	-1.12E+2	3.95E+2
HTP-c	CTUh	1.05E-8	5.17E-11	2.52E-10	1.08E-8	9.41E-11	3.52E-9	4.59E-12	-4.13E-9	1.03E-8
HTP-nc	CTUh	3.23E-7	1.73E-9	6.40E-9	3.31E-7	3.15E-9	8.17E-8	4.82E-10	-1.42E-7	2.75E-7
SQP	Pt	1.51E+2	1.53E+0	9.16E-1	1.53E+2	2.79E+0	1.97E+1	4.45E-1	-4.12E+1	1.35E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.76E+1	2.57E-2	9.83E+0	5.74E+1	4.67E-2	2.21E+0	6.29E-3	-1.23E+1	4.74E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.76E+1	2.57E-2	9.83E+0	5.74E+1	4.67E-2	2.21E+0	6.29E-3	-1.23E+1	4.74E+1
PENRE	MJ	4.19E+2	1.90E+0	5.90E-1	4.21E+2	3.46E+0	3.33E+1	1.87E-1	-2.08E+2	2.50E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.19E+2	1.90E+0	5.90E-1	4.21E+2	3.46E+0	3.33E+1	1.87E-1	-2.08E+2	2.50E+2
PET	MJ	4.66E+2	1.93E+0	1.04E+1	4.78E+2	3.50E+0	3.55E+1	1.93E-1	-2.20E+2	2.97E+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	2.64E-1	2.03E-4	5.97E-4	2.65E-1	3.69E-4	3.36E-2	2.15E-4	-1.16E-1	1.83E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.75E-4	4.58E-6	1.12E-10	3.80E-4	8.33E-6	5.09E-5	2.12E-7	-1.63E-4	2.76E-4
NHWD	kg	1.48E+0	1.11E-1	4.31E-4	1.59E+0	2.02E-1	1.21E+0	8.20E-1	-5.98E-1	3.22E+0
RWD	kg	7.97E-4	1.22E-5	4.48E-11	8.09E-4	2.21E-5	1.17E-4	1.15E-6	-3.20E-4	6.30E-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

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