Environmental Profile

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

Ecochain v3.5.80

Product:	3017573 - PVCU Branch 87° BR 315x250 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	1.99E+1	1.61E-1	5.92E-2	2.01E+1	2.98E-1	1.06E+1	8.33E-2	-1.13E+1	1.97E+1
GWP-f	kg CO2 eq	2.14E+1	1.60E-1	5.98E-2	2.16E+1	2.98E-1	8.91E+0	8.33E-2	-1.12E+1	1.97E+1
GWP-b	kg CO2 eq	-1.52E+0	9.74E-5	-6.31E-4	-1.52E+0	1.81E-4	1.68E+0	1.06E-4	-7.33E-2	8.20E-2
GWP-luluc	kg CO2 eq	1.69E-2	5.68E-5	6.11E-5	1.70E-2	1.05E-4	3.37E-3	2.27E-6	-7.12E-3	1.34E-2
ODP	kg CFC11 eq	1.11E-5	3.70E-8	3.38E-9	1.11E-5	6.86E-8	8.94E-7	3.41E-9	-5.38E-6	6.68E-6
AP	mol H+ eq	9.76E-2	9.14E-4	6.03E-4	9.91E-2	1.70E-3	1.60E-2	8.13E-5	-4.14E-2	7.55E-2
EP-fw	kg P eq	9.01E-4	1.32E-6	3.37E-6	9.06E-4	2.45E-6	1.12E-4	1.02E-7	-3.94E-4	6.26E-4
EP-m	kg N eq	1.65E-2	3.27E-4	6.34E-5	1.69E-2	6.07E-4	3.95E-3	5.30E-5	-7.32E-3	1.42E-2
EP-T	mol N eq	1.80E-1	3.60E-3	7.58E-4	1.85E-1	6.69E-3	4.36E-2	3.26E-4	-7.91E-2	1.56E-1
POCP	kg NMVOC eq	6.40E-2	1.03E-3	2.57E-4	6.53E-2	1.91E-3	1.31E-2	1.10E-4	-2.69E-2	5.35E-2
ADP-mm	kg Sb eq	1.01E-3	4.15E-6	8.04E-6	1.02E-3	7.70E-6	6.23E-5	8.06E-8	-2.31E-4	8.61E-4
ADP-f	MJ	5.46E+2	2.46E+0	5.55E-1	5.49E+2	4.57E+0	4.37E+1	2.46E-1	-2.68E+2	3.29E+2
WDP	m3 depriv.	3.29E+1	7.56E-3	2.13E-2	3.29E+1	1.40E-2	1.67E+0	1.44E-3	-1.53E+1	1.93E+1
PM	disease inc.	7.65E-7	1.45E-8	3.71E-9	7.83E-7	2.69E-8	2.01E-7	1.69E-9	-2.70E-7	7.42E-7
IR	kBq U-235 eq	1.18E+0	1.08E-2	4.16E-4	1.19E+0	2.00E-2	1.52E-1	1.13E-3	-5.00E-1	8.65E-1
ETP-fw	CTUe	3.72E+2	2.00E+0	4.94E+0	3.79E+2	3.71E+0	3.15E+2	3.45E+0	-1.56E+2	5.44E+2
HTP-c	CTUh	1.47E-8	7.11E-11	2.52E-10	1.50E-8	1.32E-10	4.91E-9	6.37E-12	-5.73E-9	1.44E-8
HTP-nc	CTUh	4.48E-7	2.38E-9	6.40E-9	4.57E-7	4.42E-9	1.14E-7	6.69E-10	-1.97E-7	3.79E-7
SQP	Pt	2.26E+2	2.11E+0	9.16E-1	2.29E+2	3.91E+0	2.76E+1	6.23E-1	-6.04E+1	2.01E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.02E+1	3.53E-2	9.83E+0	8.01E+1	6.56E-2	3.08E+0	8.78E-3	-1.77E+1	6.55E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.02E+1	3.53E-2	9.83E+0	8.01E+1	6.56E-2	3.08E+0	8.78E-3	-1.77E+1	6.55E+1
PENRE	MJ	5.86E+2	2.61E+0	5.90E-1	5.89E+2	4.85E+0	4.65E+1	2.62E-1	-2.89E+2	3.51E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.86E+2	2.61E+0	5.90E-1	5.89E+2	4.85E+0	4.65E+1	2.62E-1	-2.89E+2	3.51E+2
PET	MJ	6.56E+2	2.65E+0	1.04E+1	6.69E+2	4.92E+0	4.96E+1	2.70E-1	-3.07E+2	4.17E+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	3.70E-1	2.79E-4	5.97E-4	3.71E-1	5.17E-4	4.69E-2	3.02E-4	-1.61E-1	2.58E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.37E-4	6.30E-6	1.12E-10	4.44E-4	1.17E-5	7.12E-5	2.97E-7	-2.27E-4	2.99E-4
NHWD	kg	2.08E+0	1.53E-1	4.31E-4	2.23E+0	2.83E-1	1.70E+0	1.15E+0	-8.29E-1	4.54E+0
RWD	kg	1.11E-3	1.67E-5	4.48E-11	1.13E-3	3.11E-5	1.64E-4	1.61E-6	-4.44E-4	8.80E-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

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