Environmental Profile

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

Ecochain v3.5.80

Product:	3072516 - PVCU Plug BR 200 UD FIN
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	1.26E+0	2.14E-2	1.45E-4	1.28E+0	1.67E-2	7.19E-1	5.30E-3	-7.41E-1	1.28E+0
GWP-f	kg CO2 eq	1.44E+0	2.14E-2	1.46E-4	1.46E+0	1.67E-2	5.01E-1	5.30E-3	-7.78E-1	1.21E+0
GWP-b	kg CO2 eq	-1.85E-1	1.30E-5	-1.54E-6	-1.85E-1	1.01E-5	2.18E-1	6.69E-6	3.73E-2	7.00E-2
GWP-luluc	kg CO2 eq	1.53E-3	7.56E-6	1.49E-7	1.54E-3	5.91E-6	2.11E-4	1.39E-7	-8.52E-4	9.05E-4
ODP	kg CFC11 eq	7.27E-7	4.92E-9	8.26E-12	7.32E-7	3.84E-9	5.84E-8	1.98E-10	-3.67E-7	4.27E-7
AP	mol H+ eq	6.91E-3	1.22E-4	1.47E-6	7.03E-3	9.50E-5	9.93E-4	4.81E-6	-3.09E-3	5.04E-3
EP-fw	kg P eq	6.69E-5	1.76E-7	8.24E-9	6.71E-5	1.37E-7	7.06E-6	6.30E-9	-3.13E-5	4.31E-5
EP-m	kg N eq	1.22E-3	4.36E-5	1.55E-7	1.27E-3	3.40E-5	2.44E-4	2.98E-6	-5.65E-4	9.84E-4
EP-T	mol N eq	1.33E-2	4.80E-4	1.85E-6	1.38E-2	3.75E-4	2.68E-3	1.92E-5	-6.10E-3	1.08E-2
POCP	kg NMVOC eq	4.39E-3	1.37E-4	6.28E-7	4.53E-3	1.07E-4	8.02E-4	6.60E-6	-2.07E-3	3.37E-3
ADP-mm	kg Sb eq	1.29E-3	5.53E-7	1.97E-8	1.29E-3	4.32E-7	3.90E-6	4.82E-9	-1.53E-5	1.28E-3
ADP-f	MJ	3.50E+1	3.28E-1	1.36E-3	3.53E+1	2.56E-1	2.68E+0	1.44E-2	-1.84E+1	1.98E+1
WDP	m3 depriv.	2.22E+0	1.01E-3	5.22E-5	2.22E+0	7.86E-4	1.06E-1	9.46E-5	-1.10E+0	1.23E+0
PM	disease inc.	4.91E-8	1.93E-9	9.08E-12	5.10E-8	1.51E-9	1.22E-8	9.94E-11	-2.47E-8	4.02E-8
IR	kBq U-235 eq	7.80E-2	1.43E-3	1.02E-6	7.94E-2	1.12E-3	9.48E-3	6.63E-5	-3.72E-2	5.29E-2
ETP-fw	CTUe	4.10E+1	2.66E-1	1.21E-2	4.12E+1	2.08E-1	2.08E+1	2.30E-1	-1.39E+1	4.86E+1
HTP-c	CTUh	1.30E-9	9.48E-12	6.17E-13	1.31E-9	7.40E-12	3.02E-10	4.00E-13	-4.75E-10	1.14E-9
HTP-nc	CTUh	3.95E-8	3.18E-10	1.57E-11	3.98E-8	2.48E-10	7.23E-9	4.41E-11	-1.45E-8	3.28E-8
SQP	Pt	2.33E+1	2.81E-1	2.24E-3	2.36E+1	2.19E-1	1.64E+0	3.70E-2	-2.34E+1	2.09E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.33E+0	4.71E-3	2.40E-2	8.36E+0	3.67E-3	1.94E-1	5.38E-4	-4.22E+0	4.33E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.33E+0	4.71E-3	2.40E-2	8.36E+0	3.67E-3	1.94E-1	5.38E-4	-4.22E+0	4.33E+0
PENRE	MJ	3.75E+1	3.48E-1	1.44E-3	3.79E+1	2.72E-1	2.85E+0	1.53E-2	-1.99E+1	2.12E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.75E+1	3.48E-1	1.44E-3	3.79E+1	2.72E-1	2.85E+0	1.53E-2	-1.99E+1	2.12E+1
PET	MJ	4.59E+1	3.53E-1	2.55E-2	4.62E+1	2.76E-1	3.04E+0	1.59E-2	-2.41E+1	2.55E+1
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	2.54E-2	3.71E-5	1.46E-6	2.55E-2	2.90E-5	2.91E-3	1.77E-5	-1.26E-2	1.59E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.87E-4	8.39E-7	2.73E-13	1.88E-4	6.55E-7	4.37E-6	1.76E-8	-1.63E-5	1.77E-4
NHWD	kg	1.51E-1	2.03E-2	1.05E-6	1.72E-1	1.59E-2	9.83E-2	6.35E-2	-6.60E-2	2.83E-1
RWD	kg	6.86E-5	2.23E-6	1.10E-13	7.08E-5	1.74E-6	1.02E-5	9.39E-8	-3.34E-5	4.94E-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

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