Environmental Profile

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

Ecochain v3.5.80

Product:	3072537 - PVCU Reducer BR 315x250 SN4UD 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	7.54E+0	1.45E-1	1.45E-4	7.68E+0	1.41E-1	1.01E+1	3.94E-2	-5.47E+0	1.25E+1
GWP-f	kg CO2 eq	1.24E+1	1.45E-1	1.46E-4	1.26E+1	1.41E-1	4.50E+0	3.94E-2	-6.74E+0	1.05E+1
GWP-b	kg CO2 eq	-4.92E+0	8.78E-5	-1.54E-6	-4.92E+0	8.58E-5	5.60E+0	5.05E-5	1.28E+0	1.95E+0
GWP-luluc	kg CO2 eq	1.79E-2	5.12E-5	1.49E-7	1.79E-2	5.00E-5	1.67E-3	1.06E-6	-1.45E-2	5.10E-3
ODP	kg CFC11 eq	5.56E-6	3.33E-8	8.26E-12	5.59E-6	3.26E-8	4.55E-7	1.61E-9	-2.75E-6	3.33E-6
AP	mol H+ eq	5.82E-2	8.24E-4	1.47E-6	5.91E-2	8.05E-4	8.49E-3	3.85E-5	-2.98E-2	3.86E-2
EP-fw	kg P eq	5.52E-4	1.19E-6	8.24E-9	5.54E-4	1.16E-6	5.55E-5	4.80E-8	-3.29E-4	2.82E-4
EP-m	kg N eq	1.15E-2	2.95E-4	1.55E-7	1.18E-2	2.88E-4	2.21E-3	2.49E-5	-5.96E-3	8.31E-3
EP-T	mol N eq	1.22E-1	3.25E-3	1.85E-6	1.25E-1	3.17E-3	2.43E-2	1.54E-4	-6.66E-2	8.65E-2
POCP	kg NMVOC eq	4.08E-2	9.28E-4	6.28E-7	4.18E-2	9.07E-4	7.26E-3	5.23E-5	-2.13E-2	2.87E-2
ADP-mm	kg Sb eq	4.76E-4	3.74E-6	1.97E-8	4.80E-4	3.65E-6	3.31E-5	3.80E-8	-1.28E-4	3.89E-4
ADP-f	MJ	2.97E+2	2.22E+0	1.36E-3	2.99E+2	2.17E+0	2.25E+1	1.17E-1	-1.52E+2	1.72E+2
WDP	m3 depriv.	1.67E+1	6.81E-3	5.22E-5	1.67E+1	6.65E-3	8.15E-1	6.34E-4	-9.35E+0	8.13E+0
PM	disease inc.	5.61E-7	1.31E-8	9.08E-12	5.74E-7	1.28E-8	1.08E-7	7.99E-10	-3.28E-7	3.68E-7
IR	kBq U-235 eq	6.53E-1	9.70E-3	1.02E-6	6.62E-1	9.48E-3	7.98E-2	5.36E-4	-3.48E-1	4.05E-1
ETP-fw	CTUe	3.59E+2	1.80E+0	1.21E-2	3.61E+2	1.76E+0	1.55E+2	1.67E+0	-1.91E+2	3.29E+2
HTP-c	CTUh	9.58E-9	6.41E-11	6.17E-13	9.65E-9	6.27E-11	2.59E-9	2.99E-12	-5.01E-9	7.29E-9
HTP-nc	CTUh	2.49E-7	2.15E-9	1.57E-11	2.52E-7	2.10E-9	5.74E-8	3.23E-10	-1.33E-7	1.79E-7
SQP	Pt	5.14E+2	1.90E+0	2.24E-3	5.16E+2	1.85E+0	1.41E+1	2.95E-1	-5.57E+2	-2.50E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.54E+1	3.18E-2	2.40E-2	9.55E+1	3.11E-2	1.53E+0	4.19E-3	-9.51E+1	1.92E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.54E+1	3.18E-2	2.40E-2	9.55E+1	3.11E-2	1.53E+0	4.19E-3	-9.51E+1	1.92E+0
PENRE	MJ	3.18E+2	2.36E+0	1.44E-3	3.21E+2	2.30E+0	2.39E+1	1.24E-1	-1.63E+2	1.84E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.18E+2	2.36E+0	1.44E-3	3.21E+2	2.30E+0	2.39E+1	1.24E-1	-1.63E+2	1.84E+2
PET	MJ	4.14E+2	2.39E+0	2.55E-2	4.16E+2	2.33E+0	2.55E+1	1.28E-1	-2.58E+2	1.86E+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	2.03E-1	2.51E-4	1.46E-6	2.03E-1	2.45E-4	2.32E-2	1.43E-4	-1.31E-1	9.59E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.61E-4	5.68E-6	2.73E-13	2.67E-4	5.54E-6	3.82E-5	1.40E-7	-1.50E-4	1.61E-4
NHWD	kg	1.44E+0	1.38E-1	1.05E-6	1.57E+0	1.34E-1	8.88E-1	5.45E-1	-6.64E-1	2.48E+0
RWD	kg	6.19E-4	1.51E-5	1.10E-13	6.34E-4	1.47E-5	8.87E-5	7.64E-7	-3.22E-4	4.16E-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