Environmental Profile

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

Ecochain v3.5.80

Product:	3072538 - PVCU Reducer BR 400x315 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	1.44E+1	1.95E-1	1.45E-4	1.46E+1	2.46E-1	1.35E+1	6.78E-2	-9.37E+0	1.91E+1
GWP-f	kg CO2 eq	1.98E+1	1.95E-1	1.46E-4	2.00E+1	2.46E-1	7.44E+0	6.78E-2	-1.06E+1	1.71E+1
GWP-b	kg CO2 eq	-5.37E+0	1.18E-4	-1.54E-6	-5.37E+0	1.49E-4	6.10E+0	8.71E-5	1.25E+0	1.99E+0
GWP-luluc	kg CO2 eq	2.36E-2	6.89E-5	1.49E-7	2.37E-2	8.71E-5	2.86E-3	1.84E-6	-1.70E-2	9.65E-3
ODP	kg CFC11 eq	9.39E-6	4.48E-8	8.26E-12	9.44E-6	5.67E-8	7.71E-7	2.80E-9	-4.63E-6	5.64E-6
AP	mol H+ eq	9.14E-2	1.11E-3	1.47E-6	9.25E-2	1.40E-3	1.41E-2	6.67E-5	-4.42E-2	6.40E-2
EP-fw	kg P eq	8.64E-4	1.60E-6	8.24E-9	8.66E-4	2.03E-6	9.50E-5	8.31E-8	-4.67E-4	4.96E-4
EP-m	kg N eq	1.71E-2	3.97E-4	1.55E-7	1.75E-2	5.02E-4	3.59E-3	4.27E-5	-8.50E-3	1.31E-2
EP-T	mol N eq	1.83E-1	4.37E-3	1.85E-6	1.88E-1	5.53E-3	3.96E-2	2.67E-4	-9.39E-2	1.39E-1
POCP	kg NMVOC eq	6.23E-2	1.25E-3	6.28E-7	6.36E-2	1.58E-3	1.18E-2	9.06E-5	-3.06E-2	4.65E-2
ADP-mm	kg Sb eq	7.68E-4	5.03E-6	1.97E-8	7.73E-4	6.37E-6	5.52E-5	6.59E-8	-2.06E-4	6.28E-4
ADP-f	MJ	4.83E+2	2.99E+0	1.36E-3	4.86E+2	3.78E+0	3.80E+1	2.02E-1	-2.44E+2	2.83E+2
WDP	m3 depriv.	2.81E+1	9.17E-3	5.22E-5	2.82E+1	1.16E-2	1.40E+0	1.11E-3	-1.47E+1	1.49E+1
PM	disease inc.	8.13E-7	1.76E-8	9.08E-12	8.31E-7	2.22E-8	1.79E-7	1.38E-9	-4.22E-7	6.12E-7
IR	kBq U-235 eq	1.05E+0	1.31E-2	1.02E-6	1.06E+0	1.65E-2	1.33E-1	9.29E-4	-5.22E-1	6.88E-1
ETP-fw	CTUe	4.85E+2	2.43E+0	1.21E-2	4.88E+2	3.07E+0	2.66E+2	2.89E+0	-2.45E+2	5.15E+2
HTP-c	CTUh	1.47E-8	8.63E-11	6.17E-13	1.48E-8	1.09E-10	4.31E-9	5.17E-12	-7.01E-9	1.22E-8
HTP-nc	CTUh	4.06E-7	2.89E-9	1.57E-11	4.08E-7	3.66E-9	9.76E-8	5.58E-10	-2.02E-7	3.08E-7
SQP	Pt	5.85E+2	2.56E+0	2.24E-3	5.88E+2	3.23E+0	2.39E+1	5.12E-1	-5.77E+2	3.84E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.19E+2	4.29E-2	2.40E-2	1.20E+2	5.42E-2	2.62E+0	7.23E-3	-1.01E+2	2.12E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.19E+2	4.29E-2	2.40E-2	1.20E+2	5.42E-2	2.62E+0	7.23E-3	-1.01E+2	2.12E+1
PENRE	MJ	5.18E+2	3.17E+0	1.44E-3	5.21E+2	4.01E+0	4.04E+1	2.15E-1	-2.63E+2	3.02E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.18E+2	3.17E+0	1.44E-3	5.21E+2	4.01E+0	4.04E+1	2.15E-1	-2.63E+2	3.02E+2
PET	MJ	6.37E+2	3.21E+0	2.55E-2	6.40E+2	4.07E+0	4.30E+1	2.22E-1	-3.64E+2	3.23E+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	3.30E-1	3.38E-4	1.46E-6	3.31E-1	4.28E-4	3.95E-2	2.48E-4	-1.87E-1	1.84E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.10E-4	7.64E-6	2.73E-13	4.17E-4	9.66E-6	6.32E-5	2.43E-7	-2.28E-4	2.62E-4
NHWD	kg	2.15E+0	1.85E-1	1.05E-6	2.34E+0	2.34E-1	1.48E+0	9.48E-1	-9.53E-1	4.05E+0
RWD	kg	9.78E-4	2.03E-5	1.10E-13	9.98E-4	2.57E-5	1.47E-4	1.32E-6	-4.77E-4	6.95E-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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