Environmental Profile

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

Ecochain v3.5.80

Product:	3017594 - PVCU Reducer BR 250x200 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	4.61E+0	3.88E-2	4.26E-1	5.08E+0	6.91E-2	2.32E+0	1.91E-2	-2.61E+0	4.88E+0
GWP-f	kg CO2 eq	4.91E+0	3.88E-2	4.30E-1	5.38E+0	6.90E-2	1.98E+0	1.91E-2	-2.59E+0	4.86E+0
GWP-b	kg CO2 eq	-3.05E-1	2.35E-5	-4.54E-3	-3.10E-1	4.19E-5	3.44E-1	2.46E-5	-1.72E-2	1.73E-2
GWP-luluc	kg CO2 eq	3.88E-3	1.37E-5	4.40E-4	4.33E-3	2.44E-5	7.92E-4	5.19E-7	-1.66E-3	3.48E-3
ODP	kg CFC11 eq	2.58E-6	8.93E-9	2.43E-8	2.61E-6	1.59E-8	2.11E-7	7.86E-10	-1.26E-6	1.58E-6
AP	mol H+ eq	2.22E-2	2.21E-4	4.34E-3	2.68E-2	3.93E-4	3.73E-3	1.88E-5	-9.64E-3	2.13E-2
EP-fw	kg P eq	2.09E-4	3.19E-7	2.42E-5	2.33E-4	5.68E-7	2.63E-5	2.34E-8	-9.22E-5	1.68E-4
EP-m	kg N eq	3.76E-3	7.90E-5	4.57E-4	4.29E-3	1.41E-4	9.19E-4	1.20E-5	-1.70E-3	3.67E-3
EP-T	mol N eq	4.09E-2	8.71E-4	5.46E-3	4.73E-2	1.55E-3	1.01E-2	7.51E-5	-1.83E-2	4.07E-2
POCP	kg NMVOC eq	1.44E-2	2.49E-4	1.85E-3	1.65E-2	4.43E-4	3.04E-3	2.55E-5	-6.24E-3	1.38E-2
ADP-mm	kg Sb eq	2.04E-4	1.00E-6	5.79E-5	2.63E-4	1.79E-6	1.46E-5	1.85E-8	-5.30E-5	2.26E-4
ADP-f	MJ	1.25E+2	5.95E-1	3.99E+0	1.29E+2	1.06E+0	1.02E+1	5.69E-2	-6.21E+1	7.85E+1
WDP	m3 depriv.	7.70E+0	1.83E-3	1.54E-1	7.86E+0	3.25E-3	3.92E-1	3.10E-4	-3.58E+0	4.68E+0
PM	disease inc.	1.70E-7	3.50E-9	2.67E-8	2.00E-7	6.23E-9	4.70E-8	3.89E-10	-6.27E-8	1.91E-7
IR	kBq U-235 eq	2.66E-1	2.60E-3	3.00E-3	2.72E-1	4.63E-3	3.56E-2	2.61E-4	-1.17E-1	1.95E-1
ETP-fw	CTUe	8.45E+1	4.83E-1	3.56E+1	1.21E+2	8.60E-1	7.45E+1	8.17E-1	-3.64E+1	1.60E+2
HTP-c	CTUh	3.38E-9	1.72E-11	1.82E-9	5.21E-9	3.06E-11	1.13E-9	1.46E-12	-1.34E-9	5.03E-9
HTP-nc	CTUh	1.04E-7	5.76E-10	4.61E-8	1.51E-7	1.03E-9	2.67E-8	1.58E-10	-4.60E-8	1.33E-7
SQP	Pt	4.78E+1	5.09E-1	6.59E+0	5.49E+1	9.07E-1	6.45E+0	1.44E-1	-1.32E+1	4.92E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.55E+1	8.54E-3	7.07E+1	8.62E+1	1.52E-2	7.24E-1	2.04E-3	-3.96E+0	8.30E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.55E+1	8.54E-3	7.07E+1	8.62E+1	1.52E-2	7.24E-1	2.04E-3	-3.96E+0	8.30E+1
PENRE	MJ	1.34E+2	6.32E-1	4.25E+0	1.39E+2	1.12E+0	1.09E+1	6.03E-2	-6.69E+1	8.37E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.34E+2	6.32E-1	4.25E+0	1.39E+2	1.12E+0	1.09E+1	6.03E-2	-6.69E+1	8.37E+1
PET	MJ	1.49E+2	6.40E-1	7.50E+1	2.25E+2	1.14E+0	1.16E+1	6.24E-2	-7.09E+1	1.67E+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	8.52E-2	6.74E-5	4.30E-3	8.96E-2	1.20E-4	1.09E-2	6.97E-5	-3.76E-2	6.31E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.92E-5	1.52E-6	8.04E-10	1.01E-4	2.71E-6	1.66E-5	6.83E-8	-5.24E-5	6.77E-5
NHWD	kg	4.77E-1	3.69E-2	3.10E-3	5.17E-1	6.57E-2	3.92E-1	2.66E-1	-1.94E-1	1.05E+0
RWD	kg	2.44E-4	4.05E-6	3.23E-10	2.48E-4	7.21E-6	3.84E-5	3.72E-7	-1.04E-4	1.90E-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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