Environmental Profile

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

Ecochain v3.5.80

Product:	3072515 - PVCU Reducer BR 250x200 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	4.08E+0	5.36E-2	1.45E-4	4.13E+0	6.91E-2	3.60E+0	1.91E-2	-2.68E+0	5.14E+0
GWP-f	kg CO2 eq	5.44E+0	5.36E-2	1.46E-4	5.49E+0	6.90E-2	2.08E+0	1.91E-2	-2.91E+0	4.75E+0
GWP-b	kg CO2 eq	-1.37E+0	3.25E-5	-1.54E-6	-1.37E+0	4.19E-5	1.52E+0	2.46E-5	2.34E-1	3.88E-1
GWP-luluc	kg CO2 eq	5.92E-3	1.90E-5	1.49E-7	5.94E-3	2.44E-5	8.02E-4	5.19E-7	-3.92E-3	2.85E-3
ODP	kg CFC11 eq	2.64E-6	1.23E-8	8.26E-12	2.65E-6	1.59E-8	2.16E-7	7.86E-10	-1.30E-6	1.58E-6
AP	mol H+ eq	2.50E-2	3.05E-4	1.47E-6	2.53E-2	3.93E-4	3.91E-3	1.88E-5	-1.18E-2	1.78E-2
EP-fw	kg P eq	2.35E-4	4.41E-7	8.24E-9	2.36E-4	5.68E-7	2.66E-5	2.34E-8	-1.21E-4	1.42E-4
EP-m	kg N eq	4.56E-3	1.09E-4	1.55E-7	4.67E-3	1.41E-4	9.86E-4	1.20E-5	-2.24E-3	3.57E-3
EP-T	mol N eq	4.92E-2	1.20E-3	1.85E-6	5.04E-2	1.55E-3	1.09E-2	7.51E-5	-2.46E-2	3.83E-2
POCP	kg NMVOC eq	1.69E-2	3.44E-4	6.28E-7	1.73E-2	4.43E-4	3.25E-3	2.55E-5	-8.15E-3	1.29E-2
ADP-mm	kg Sb eq	2.11E-4	1.39E-6	1.97E-8	2.12E-4	1.79E-6	1.53E-5	1.85E-8	-5.72E-5	1.72E-4
ADP-f	MJ	1.34E+2	8.22E-1	1.36E-3	1.35E+2	1.06E+0	1.06E+1	5.69E-2	-6.76E+1	7.88E+1
WDP	m3 depriv.	7.90E+0	2.52E-3	5.22E-5	7.91E+0	3.25E-3	3.95E-1	3.10E-4	-3.98E+0	4.32E+0
PM	disease inc.	2.15E-7	4.83E-9	9.08E-12	2.20E-7	6.23E-9	4.95E-8	3.89E-10	-1.06E-7	1.71E-7
IR	kBq U-235 eq	2.88E-1	3.59E-3	1.02E-6	2.92E-1	4.63E-3	3.70E-2	2.61E-4	-1.39E-1	1.95E-1
ETP-fw	CTUe	1.21E+2	6.68E-1	1.21E-2	1.22E+2	8.60E-1	7.50E+1	8.17E-1	-5.96E+1	1.39E+2
HTP-c	CTUh	4.00E-9	2.38E-11	6.17E-13	4.03E-9	3.06E-11	1.19E-9	1.46E-12	-1.87E-9	3.38E-9
HTP-nc	CTUh	1.12E-7	7.96E-10	1.57E-11	1.13E-7	1.03E-9	2.73E-8	1.58E-10	-5.42E-8	8.71E-8
SQP	Pt	1.47E+2	7.03E-1	2.24E-3	1.48E+2	9.07E-1	6.65E+0	1.44E-1	-1.33E+2	2.27E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.06E+1	1.18E-2	2.40E-2	3.06E+1	1.52E-2	7.34E-1	2.04E-3	-2.33E+1	8.05E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.06E+1	1.18E-2	2.40E-2	3.06E+1	1.52E-2	7.34E-1	2.04E-3	-2.33E+1	8.05E+0
PENRE	MJ	1.44E+2	8.73E-1	1.44E-3	1.45E+2	1.12E+0	1.12E+1	6.03E-2	-7.29E+1	8.41E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.44E+2	8.73E-1	1.44E-3	1.45E+2	1.12E+0	1.12E+1	6.03E-2	-7.29E+1	8.41E+1
PET	MJ	1.74E+2	8.85E-1	2.55E-2	1.75E+2	1.14E+0	1.20E+1	6.24E-2	-9.62E+1	9.21E+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	9.14E-2	9.30E-5	1.46E-6	9.15E-2	1.20E-4	1.11E-2	6.97E-5	-4.83E-2	5.45E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.12E-4	2.10E-6	2.73E-13	1.14E-4	2.71E-6	1.75E-5	6.83E-8	-6.23E-5	7.22E-5
NHWD	kg	5.79E-1	5.10E-2	1.05E-6	6.30E-1	6.57E-2	4.10E-1	2.66E-1	-2.55E-1	1.12E+0
RWD	kg	2.68E-4	5.59E-6	1.10E-13	2.74E-4	7.21E-6	4.05E-5	3.72E-7	-1.27E-4	1.95E-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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