Environmental Profile

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

Ecochain v3.5.80

Product:	3072521 - PVCU Reducer BR 200x160 SN4 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	2.33E+0	3.60E-2	1.45E-4	2.37E+0	2.91E-2	1.44E+0	9.58E-3	-1.35E+0	2.50E+0
GWP-f	kg CO2 eq	2.67E+0	3.60E-2	1.46E-4	2.71E+0	2.91E-2	1.04E+0	9.58E-3	-1.42E+0	2.36E+0
GWP-b	kg CO2 eq	-3.45E-1	2.18E-5	-1.54E-6	-3.45E-1	1.77E-5	4.03E-1	1.20E-5	7.60E-2	1.34E-1
GWP-luluc	kg CO2 eq	2.83E-3	1.27E-5	1.49E-7	2.85E-3	1.03E-5	3.62E-4	2.47E-7	-1.56E-3	1.66E-3
ODP	kg CFC11 eq	1.28E-6	8.29E-9	8.26E-12	1.29E-6	6.71E-9	1.01E-7	3.52E-10	-6.37E-7	7.59E-7
AP	mol H+ eq	1.28E-2	2.05E-4	1.47E-6	1.30E-2	1.66E-4	1.73E-3	8.57E-6	-5.43E-3	9.53E-3
EP-fw	kg P eq	1.21E-4	2.96E-7	8.24E-9	1.21E-4	2.40E-7	1.21E-5	1.12E-8	-5.48E-5	7.90E-5
EP-m	kg N eq	2.28E-3	7.33E-5	1.55E-7	2.35E-3	5.93E-5	4.30E-4	5.80E-6	-1.01E-3	1.84E-3
EP-T	mol N eq	2.48E-2	8.08E-4	1.85E-6	2.56E-2	6.54E-4	4.74E-3	3.42E-5	-1.09E-2	2.02E-2
POCP	kg NMVOC eq	8.40E-3	2.31E-4	6.28E-7	8.63E-3	1.87E-4	1.41E-3	1.18E-5	-3.69E-3	6.55E-3
ADP-mm	kg Sb eq	2.14E-3	9.30E-7	1.97E-8	2.14E-3	7.53E-7	6.74E-6	8.58E-9	-2.81E-5	2.12E-3
ADP-f	MJ	6.55E+1	5.52E-1	1.36E-3	6.60E+1	4.47E-1	4.62E+0	2.57E-2	-3.31E+1	3.80E+1
WDP	m3 depriv.	3.92E+0	1.69E-3	5.22E-5	3.92E+0	1.37E-3	1.83E-1	1.63E-4	-1.90E+0	2.21E+0
PM	disease inc.	9.65E-8	3.25E-9	9.08E-12	9.98E-8	2.63E-9	2.12E-8	1.77E-10	-4.42E-8	7.96E-8
IR	kBq U-235 eq	1.47E-1	2.41E-3	1.02E-6	1.50E-1	1.95E-3	1.64E-2	1.19E-4	-6.52E-2	1.03E-1
ETP-fw	CTUe	7.39E+1	4.48E-1	1.21E-2	7.44E+1	3.63E-1	3.59E+1	3.96E-1	-2.49E+1	8.61E+1
HTP-c	CTUh	2.28E-9	1.60E-11	6.17E-13	2.30E-9	1.29E-11	5.25E-10	7.08E-13	-8.34E-10	2.00E-9
HTP-nc	CTUh	6.88E-8	5.34E-10	1.57E-11	6.94E-8	4.33E-10	1.25E-8	7.64E-11	-2.52E-8	5.72E-8
SQP	Pt	4.34E+1	4.72E-1	2.24E-3	4.39E+1	3.82E-1	2.82E+0	6.59E-2	-4.41E+1	3.10E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.43E+1	7.92E-3	2.40E-2	1.43E+1	6.41E-3	3.33E-1	9.72E-4	-7.88E+0	6.77E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.43E+1	7.92E-3	2.40E-2	1.43E+1	6.41E-3	3.33E-1	9.72E-4	-7.88E+0	6.77E+0
PENRE	MJ	7.02E+1	5.86E-1	1.44E-3	7.08E+1	4.74E-1	4.92E+0	2.73E-2	-3.57E+1	4.05E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.02E+1	5.86E-1	1.44E-3	7.08E+1	4.74E-1	4.92E+0	2.73E-2	-3.57E+1	4.05E+1
PET	MJ	8.45E+1	5.94E-1	2.55E-2	8.51E+1	4.81E-1	5.25E+0	2.83E-2	-4.36E+1	4.73E+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	4.67E-2	6.25E-5	1.46E-6	4.67E-2	5.06E-5	5.17E-3	3.16E-5	-2.21E-2	2.99E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.08E-4	1.41E-6	2.73E-13	3.10E-4	1.14E-6	7.65E-6	3.13E-8	-2.98E-5	2.89E-4
NHWD	kg	2.78E-1	3.42E-2	1.05E-6	3.12E-1	2.77E-2	1.74E-1	1.13E-1	-1.15E-1	5.12E-1
RWD	kg	1.35E-4	3.75E-6	1.10E-13	1.39E-4	3.04E-6	1.76E-5	1.67E-7	-5.89E-5	1.01E-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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