

# Environmental Profile

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

Ecochain v3.5.80



Product: 3072519 - PVCU Bend 87.5° BR 200 SN4 FIN  
 Unit: 1 piece  
 Manufacturer: Wavin - PL -Buk - Extra products

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



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.

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

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# Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.85E+0	7.22E-2	1.45E-4	3.93E+0	5.06E-2	3.02E+0	1.65E-2	-2.38E+0	4.63E+0
GWP-f	kg CO2 eq	4.88E+0	7.21E-2	1.46E-4	4.95E+0	5.06E-2	1.84E+0	1.65E-2	-2.62E+0	4.24E+0
GWP-b	kg CO2 eq	-1.03E+0	4.38E-5	-1.54E-6	-1.03E+0	3.07E-5	1.17E+0	2.07E-5	2.37E-1	3.85E-1
GWP-luluc	kg CO2 eq	5.80E-3	2.55E-5	1.49E-7	5.82E-3	1.79E-5	6.36E-4	4.29E-7	-3.65E-3	2.83E-3
ODP	kg CFC11 eq	2.25E-6	1.66E-8	8.26E-12	2.26E-6	1.17E-8	1.77E-7	6.10E-10	-1.13E-6	1.32E-6
AP	mol H+ eq	2.35E-2	4.11E-4	1.47E-6	2.40E-2	2.88E-4	3.10E-3	1.48E-5	-1.04E-2	1.70E-2
EP-fw	kg P eq	2.23E-4	5.94E-7	8.24E-9	2.23E-4	4.16E-7	2.13E-5	1.94E-8	-1.07E-4	1.38E-4
EP-m	kg N eq	4.31E-3	1.47E-4	1.55E-7	4.45E-3	1.03E-4	7.77E-4	9.89E-6	-1.98E-3	3.37E-3
EP-T	mol N eq	4.68E-2	1.62E-3	1.85E-6	4.84E-2	1.14E-3	8.57E-3	5.92E-5	-2.16E-2	3.66E-2
POCP	kg NMVOC eq	1.57E-2	4.63E-4	6.28E-7	1.62E-2	3.25E-4	2.55E-3	2.04E-5	-7.23E-3	1.18E-2
ADP-mm	kg Sb eq	3.85E-3	1.87E-6	1.97E-8	3.85E-3	1.31E-6	1.20E-5	1.49E-8	-5.01E-5	3.81E-3
ADP-f	MJ	1.18E+2	1.11E+0	1.36E-3	1.19E+2	7.77E-1	8.19E+0	4.45E-2	-6.02E+1	6.78E+1
WDP	m3 depriv.	6.93E+0	3.40E-3	5.22E-5	6.93E+0	2.38E-3	3.20E-1	2.84E-4	-3.48E+0	3.77E+0
PM	disease inc.	1.86E-7	6.51E-9	9.08E-12	1.92E-7	4.57E-9	3.81E-8	3.07E-10	-9.46E-8	1.40E-7
IR	kBq U-235 eq	2.63E-1	4.84E-3	1.02E-6	2.68E-1	3.39E-3	2.92E-2	2.05E-4	-1.23E-1	1.78E-1
ETP-fw	CTUe	1.45E+2	8.99E-1	1.21E-2	1.46E+2	6.31E-1	6.28E+1	6.90E-1	-5.30E+1	1.57E+2
HTP-c	CTUh	4.27E-9	3.20E-11	6.17E-13	4.30E-9	2.24E-11	9.45E-10	1.23E-12	-1.67E-9	3.60E-9
HTP-nc	CTUh	1.24E-7	1.07E-9	1.57E-11	1.25E-7	7.52E-10	2.21E-8	1.33E-10	-4.74E-8	1.01E-7
SQP	Pt	1.16E+2	9.48E-1	2.24E-3	1.17E+2	6.64E-1	5.01E+0	1.14E-1	-1.25E+2	-2.95E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.18E+1	1.59E-2	2.40E-2	3.18E+1	1.11E-2	5.85E-1	1.68E-3	-2.16E+1	1.08E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.18E+1	1.59E-2	2.40E-2	3.18E+1	1.11E-2	5.85E-1	1.68E-3	-2.16E+1	1.08E+1
PENRE	MJ	1.26E+2	1.18E+0	1.44E-3	1.28E+2	8.25E-1	8.72E+0	4.73E-2	-6.48E+1	7.23E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.26E+2	1.18E+0	1.44E-3	1.28E+2	8.25E-1	8.72E+0	4.73E-2	-6.48E+1	7.23E+1
PET	MJ	1.58E+2	1.19E+0	2.55E-2	1.59E+2	8.36E-1	9.30E+0	4.89E-2	-8.65E+1	8.31E+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	8.41E-2	1.25E-4	1.46E-6	8.42E-2	8.79E-5	9.02E-3	5.46E-5	-4.30E-2	5.04E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.59E-4	2.83E-6	2.73E-13	5.62E-4	1.99E-6	1.37E-5	5.42E-8	-5.61E-5	5.22E-4
NHWD	kg	5.27E-1	6.86E-2	1.05E-6	5.96E-1	4.81E-2	3.12E-1	1.96E-1	-2.26E-1	9.26E-1
RWD	kg	2.42E-4	7.53E-6	1.10E-13	2.49E-4	5.28E-6	3.15E-5	2.90E-7	-1.12E-4	1.74E-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