Environmental Profile

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

Ecochain v3.5.64

Product:	3062144 - Wafix PP ML Pipe RD 160 SN8 L=1 S/CH
Unit:	1 piece
Manufacturer:	Wavin - SE - Eskilstuna

Wafix PP is a versatile, uncomplicated solution for your indoor drain. You can install the impact-resistant pipes even in frost. Their excellent chemical resistance makes them ideal for embedment applications.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	20-06-2022
End of validity:	20-06-2027
Verifier:	Harry van Ewijk - 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 - SE - Eskilstuna (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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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	4.82E+0	4.87E-1	2.10E-1	5.52E+0	8.54E-2	2.01E+0	2.89E-2	-2.84E+0	4.80E+0
GWP-f	kg CO2 eq	4.80E+0	4.87E-1	1.52E-1	5.44E+0	8.54E-2	2.01E+0	2.89E-2	-2.83E+0	4.73E+0
GWP-b	kg CO2 eq	1.80E-2	1.96E-4	4.01E-2	5.83E-2	5.18E-5	3.90E-3	2.61E-5	-9.77E-3	5.25E-2
GWP-luluc	kg CO2 eq	5.67E-3	1.89E-4	1.77E-2	2.36E-2	3.02E-5	4.81E-4	5.67E-7	-5.41E-4	2.36E-2
ODP	kg CFC11 eq	1.20E-7	1.07E-7	1.73E-8	2.44E-7	1.97E-8	6.30E-8	9.12E-10	-1.05E-7	2.23E-7
AP	mol H+ eq	1.78E-2	3.97E-3	1.29E-3	2.31E-2	4.86E-4	2.59E-3	2.10E-5	-8.05E-3	1.81E-2
EP-fw	kg P eq	7.81E-5	4.65E-6	2.81E-6	8.56E-5	7.02E-7	1.39E-5	2.53E-8	-3.25E-5	6.77E-5
EP-m	kg N eq	3.03E-3	1.25E-3	3.83E-4	4.67E-3	1.74E-4	7.43E-4	1.26E-5	-1.42E-3	4.17E-3
EP-T	mol N eq	3.41E-2	1.39E-2	4.20E-3	5.22E-2	1.92E-3	8.17E-3	8.56E-5	-1.58E-2	4.65E-2
POCP	kg NMVOC eq	1.52E-2	3.85E-3	1.17E-3	2.02E-2	5.48E-4	2.60E-3	3.07E-5	-7.29E-3	1.61E-2
ADP-mm	kg Sb eq	1.04E-4	1.15E-5	4.59E-6	1.20E-4	2.21E-6	1.05E-5	2.08E-8	-1.86E-5	1.14E-4
ADP-f	MJ	1.67E+2	7.25E+0	1.52E+0	1.75E+2	1.31E+0	8.38E+0	6.53E-2	-8.88E+1	9.63E+1
WDP	m3 depriv.	3.34E+0	2.47E-2	9.76E-1	4.34E+0	4.02E-3	1.61E-1	3.12E-4	-1.56E+0	2.95E+0
PM	disease inc.	1.61E-7	4.12E-8	2.18E-8	2.24E-7	7.71E-9	4.35E-8	4.43E-10	-6.79E-8	2.08E-7
IR	kBq U-235 eq	9.99E-2	3.04E-2	4.51E-3	1.35E-1	5.73E-3	2.53E-2	2.99E-4	-4.18E-2	1.24E-1
ETP-fw	CTUe	3.35E+1	6.32E+0	4.22E+0	4.41E+1	1.06E+0	9.39E+0	5.09E-2	-1.28E+1	4.17E+1
HTP-c	CTUh	1.70E-9	2.16E-10	1.67E-10	2.09E-9	3.79E-11	1.07E-9	1.43E-12	-4.74E-10	2.72E-9
HTP-nc	CTUh	3.95E-8	6.81E-9	4.55E-9	5.08E-8	1.27E-9	1.36E-8	3.21E-11	-8.92E-9	5.68E-8
SQP	Pt	8.01E+0	5.89E+0	1.99E-1	1.41E+1	1.12E+0	6.76E+0	1.63E-1	-2.48E+0	1.97E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.76E+0	8.73E-2	9.56E+0	1.54E+1	1.88E-2	4.12E-1	2.22E-3	-1.12E+0	1.47E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.76E+0	8.73E-2	9.56E+0	1.54E+1	1.88E-2	4.12E-1	2.22E-3	-1.12E+0	1.47E+1
PENRE	MJ	1.79E+2	7.69E+0	1.61E+0	1.88E+2	1.39E+0	8.93E+0	6.93E-2	-9.57E+1	1.03E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.79E+2	7.69E+0	1.61E+0	1.88E+2	1.39E+0	8.93E+0	6.93E-2	-9.57E+1	1.03E+2
PET	MJ	1.84E+2	7.78E+0	1.12E+1	2.03E+2	1.41E+0	9.34E+0	7.15E-2	-9.68E+1	1.17E+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	5.21E-2	8.43E-4	2.32E-2	7.62E-2	1.48E-4	4.68E-3	7.99E-5	-2.35E-2	5.75E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.75E-5	1.75E-5	2.31E-6	4.72E-5	3.35E-6	1.36E-5	7.76E-8	-2.31E-5	4.11E-5
NHWD	kg	2.58E-1	4.26E-1	7.07E-3	6.91E-1	8.12E-2	4.09E-1	3.24E-1	-7.09E-2	1.44E+0
RWD	kg	9.17E-5	4.78E-5	6.41E-6	1.46E-4	8.91E-6	3.22E-5	4.30E-7	-3.78E-5	1.50E-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