Environmental Profile

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

Ecochain v3.5.80

Product:	3043850 - Wafix PP Pipe GY 50 L=0.25 L/CH
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

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

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	1.42E-1	7.61E-4	1.45E-4	1.43E-1	2.40E-3	1.88E-1	1.13E-3	-1.23E-1	2.12E-1
GWP-f	kg CO2 eq	2.40E-1	7.60E-4	1.46E-4	2.41E-1	2.40E-3	8.01E-2	1.13E-3	-1.40E-1	1.84E-1
GWP-b	kg CO2 eq	-9.78E-2	4.62E-7	-1.54E-6	-9.78E-2	1.46E-6	1.08E-1	9.88E-7	1.76E-2	2.76E-2
GWP-luluc	kg CO2 eq	2.55E-4	2.69E-7	1.49E-7	2.55E-4	8.50E-7	1.43E-5	1.90E-8	-2.06E-4	6.51E-5
ODP	kg CFC11 eq	9.97E-9	1.75E-10	8.26E-12	1.02E-8	5.53E-10	2.17E-9	2.84E-11	-7.65E-9	5.26E-9
AP	mol H+ eq	9.50E-4	4.33E-6	1.47E-6	9.56E-4	1.37E-5	8.92E-5	6.75E-7	-4.97E-4	5.62E-4
EP-fw	kg P eq	5.47E-6	6.25E-9	8.24E-9	5.49E-6	1.98E-8	4.21E-7	8.74E-10	-3.55E-6	2.38E-6
EP-m	kg N eq	1.87E-4	1.55E-6	1.55E-7	1.89E-4	4.89E-6	2.73E-5	4.42E-7	-1.02E-4	1.20E-4
EP-T	mol N eq	2.03E-3	1.71E-5	1.85E-6	2.05E-3	5.39E-5	3.01E-4	2.75E-6	-1.16E-3	1.25E-3
POCP	kg NMVOC eq	8.25E-4	4.88E-6	6.28E-7	8.30E-4	1.54E-5	9.35E-5	1.03E-6	-4.50E-4	4.90E-4
ADP-mm	kg Sb eq	4.51E-6	1.97E-8	1.97E-8	4.55E-6	6.21E-8	3.49E-7	6.78E-10	-1.10E-6	3.87E-6
ADP-f	MJ	7.54E+0	1.17E-2	1.36E-3	7.55E+0	3.69E-2	2.63E-1	2.07E-3	-4.01E+0	3.85E+0
WDP	m3 depriv.	1.51E-1	3.58E-5	5.22E-5	1.51E-1	1.13E-4	4.82E-3	9.47E-6	-9.30E-2	6.27E-2
PM	disease inc.	1.02E-8	6.86E-11	9.08E-12	1.03E-8	2.17E-10	1.43E-9	1.42E-11	-6.26E-9	5.67E-9
IR	kBq U-235 eq	5.77E-3	5.10E-5	1.02E-6	5.83E-3	1.61E-4	8.32E-4	9.62E-6	-3.51E-3	3.32E-3
ETP-fw	CTUe	4.24E+0	9.47E-3	1.21E-2	4.26E+0	2.99E-2	3.12E-1	1.73E-3	-2.32E+0	2.28E+0
HTP-c	CTUh	1.09E-10	3.37E-13	6.17E-13	1.10E-10	1.06E-12	3.68E-11	4.99E-14	-6.56E-11	8.24E-11
HTP-nc	CTUh	2.16E-9	1.13E-11	1.57E-11	2.18E-9	3.57E-11	4.45E-10	1.11E-12	-1.22E-9	1.44E-9
SQP	Pt	9.36E+0	9.98E-3	2.24E-3	9.37E+0	3.15E-2	2.05E-1	5.32E-3	-1.05E+1	-9.03E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.84E+0	1.67E-4	2.40E-2	1.87E+0	5.29E-4	1.24E-2	8.07E-5	-1.72E+0	1.61E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.84E+0	1.67E-4	2.40E-2	1.87E+0	5.29E-4	1.24E-2	8.07E-5	-1.72E+0	1.61E-1
PENRE	MJ	8.09E+0	1.24E-2	1.44E-3	8.10E+0	3.91E-2	2.80E-1	2.20E-3	-4.31E+0	4.11E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.09E+0	1.24E-2	1.44E-3	8.10E+0	3.91E-2	2.80E-1	2.20E-3	-4.31E+0	4.11E+0
PET	MJ	9.93E+0	1.26E-2	2.55E-2	9.97E+0	3.97E-2	2.92E-1	2.28E-3	-6.03E+0	4.27E+0
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	2.60E-3	1.32E-6	1.46E-6	2.60E-3	4.17E-6	1.48E-4	2.56E-6	-1.77E-3	9.93E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.06E-6	2.98E-8	2.73E-13	2.09E-6	9.42E-8	4.55E-7	2.49E-9	-1.69E-6	9.45E-7
NHWD	kg	1.65E-2	7.23E-4	1.05E-6	1.72E-2	2.28E-3	1.31E-2	9.13E-3	-8.25E-3	3.35E-2
RWD	kg	5.68E-6	7.93E-8	1.10E-13	5.76E-6	2.51E-7	1.08E-6	1.35E-8	-3.42E-6	3.68E-6
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