Environmental Profile

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

Ecochain v3.5.80

Product:	3043866 - Wafix PP Branch 45° GY 50x50x50 S/S/S
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	1.64E-1	1.43E-3	1.45E-4	1.65E-1	2.60E-3	1.92E-1	1.22E-3	-1.34E-1	2.27E-1
GWP-f	kg CO2 eq	2.62E-1	1.43E-3	1.46E-4	2.63E-1	2.60E-3	8.57E-2	1.22E-3	-1.48E-1	2.05E-1
GWP-b	kg CO2 eq	-9.81E-2	8.68E-7	-1.54E-6	-9.81E-2	1.58E-6	1.07E-1	1.07E-6	1.40E-2	2.25E-2
GWP-luluc	kg CO2 eq	2.58E-4	5.06E-7	1.49E-7	2.58E-4	9.19E-7	1.54E-5	2.08E-8	-1.84E-4	9.07E-5
ODP	kg CFC11 eq	1.24E-8	3.29E-10	8.26E-12	1.28E-8	5.98E-10	2.29E-9	3.07E-11	-8.30E-9	7.41E-9
AP	mol H+ eq	1.08E-3	8.14E-6	1.47E-6	1.09E-3	1.48E-5	9.44E-5	7.32E-7	-5.12E-4	6.86E-4
EP-fw	kg P eq	6.13E-6	1.18E-8	8.24E-9	6.15E-6	2.14E-8	4.52E-7	9.54E-10	-3.43E-6	3.19E-6
EP-m	kg N eq	2.03E-4	2.91E-6	1.55E-7	2.06E-4	5.29E-6	2.87E-5	4.77E-7	-1.04E-4	1.37E-4
EP-T	mol N eq	2.24E-3	3.21E-5	1.85E-6	2.28E-3	5.83E-5	3.16E-4	2.97E-6	-1.18E-3	1.48E-3
POCP	kg NMVOC eq	9.09E-4	9.18E-6	6.28E-7	9.19E-4	1.67E-5	9.83E-5	1.12E-6	-4.68E-4	5.67E-4
ADP-mm	kg Sb eq	8.34E-6	3.70E-8	1.97E-8	8.40E-6	6.71E-8	3.70E-7	7.37E-10	-1.15E-6	7.68E-6
ADP-f	MJ	8.09E+0	2.19E-2	1.36E-3	8.11E+0	3.98E-2	2.80E-1	2.24E-3	-4.26E+0	4.18E+0
WDP	m3 depriv.	1.65E-1	6.73E-5	5.22E-5	1.65E-1	1.22E-4	5.17E-3	1.12E-5	-9.43E-2	7.61E-2
PM	disease inc.	1.14E-8	1.29E-10	9.08E-12	1.15E-8	2.34E-10	1.52E-9	1.54E-11	-6.22E-9	7.06E-9
IR	kBq U-235 eq	6.76E-3	9.59E-5	1.02E-6	6.85E-3	1.74E-4	8.83E-4	1.04E-5	-3.46E-3	4.46E-3
ETP-fw	CTUe	4.45E+0	1.78E-2	1.21E-2	4.48E+0	3.24E-2	3.30E-1	1.87E-3	-2.15E+0	2.70E+0
HTP-c	CTUh	1.47E-10	6.34E-13	6.17E-13	1.48E-10	1.15E-12	3.95E-11	5.47E-14	-6.57E-11	1.23E-10
HTP-nc	CTUh	2.85E-9	2.12E-11	1.57E-11	2.89E-9	3.86E-11	4.76E-10	1.21E-12	-1.02E-9	2.39E-9
SQP	Pt	9.37E+0	1.88E-2	2.24E-3	9.39E+0	3.41E-2	2.20E-1	5.75E-3	-9.94E+0	-2.85E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.21E+0	3.15E-4	2.40E-2	2.24E+0	5.72E-4	1.33E-2	8.68E-5	-1.62E+0	6.36E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.21E+0	3.15E-4	2.40E-2	2.24E+0	5.72E-4	1.33E-2	8.68E-5	-1.62E+0	6.36E-1
PENRE	MJ	8.68E+0	2.33E-2	1.44E-3	8.70E+0	4.23E-2	2.98E-1	2.38E-3	-4.59E+0	4.46E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.68E+0	2.33E-2	1.44E-3	8.70E+0	4.23E-2	2.98E-1	2.38E-3	-4.59E+0	4.46E+0
PET	MJ	1.09E+1	2.36E-2	2.55E-2	1.09E+1	4.29E-2	3.11E-1	2.46E-3	-6.20E+0	5.10E+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	2.91E-3	2.48E-6	1.46E-6	2.92E-3	4.51E-6	1.58E-4	2.76E-6	-1.73E-3	1.36E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.43E-6	5.61E-8	2.73E-13	2.48E-6	1.02E-7	4.82E-7	2.70E-9	-1.85E-6	1.22E-6
NHWD	kg	1.94E-2	1.36E-3	1.05E-6	2.07E-2	2.47E-3	1.40E-2	9.87E-3	-8.39E-3	3.87E-2
RWD	kg	6.84E-6	1.49E-7	1.10E-13	6.99E-6	2.71E-7	1.14E-6	1.46E-8	-3.37E-6	5.05E-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