Environmental Profile

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

Ecochain v3.5.80

Product:	3020622 - Wafix PP Branch 45° BK 125 SN4 2S/SP
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	1.21E+0	3.70E-3	1.45E-4	1.21E+0	1.87E-2	1.71E+0	9.16E-3	-1.00E+0	1.95E+0
GWP-f	kg CO2 eq	2.05E+0	3.70E-3	1.46E-4	2.05E+0	1.86E-2	7.88E-1	9.16E-3	-1.15E+0	1.72E+0
GWP-b	kg CO2 eq	-8.40E-1	2.25E-6	-1.54E-6	-8.40E-1	1.13E-5	9.21E-1	8.09E-6	1.46E-1	2.28E-1
GWP-luluc	kg CO2 eq	2.36E-3	1.31E-6	1.49E-7	2.36E-3	6.60E-6	1.09E-4	1.58E-7	-1.73E-3	7.52E-4
ODP	kg CFC11 eq	1.32E-7	8.52E-10	8.26E-12	1.33E-7	4.30E-9	1.72E-8	2.32E-10	-7.34E-8	8.09E-8
AP	mol H+ eq	8.61E-3	2.11E-5	1.47E-6	8.63E-3	1.06E-4	7.15E-4	5.54E-6	-4.01E-3	5.45E-3
EP-fw	kg P eq	5.19E-5	3.04E-8	8.24E-9	5.19E-5	1.53E-7	3.23E-6	7.25E-9	-2.98E-5	2.55E-5
EP-m	kg N eq	1.67E-3	7.54E-6	1.55E-7	1.68E-3	3.80E-5	2.22E-4	4.31E-6	-8.35E-4	1.11E-3
EP-T	mol N eq	1.82E-2	8.31E-5	1.85E-6	1.83E-2	4.19E-4	2.44E-3	2.25E-5	-9.50E-3	1.17E-2
POCP	kg NMVOC eq	7.34E-3	2.37E-5	6.28E-7	7.37E-3	1.20E-4	7.50E-4	8.41E-6	-3.66E-3	4.59E-3
ADP-mm	kg Sb eq	1.05E-4	9.57E-8	1.97E-8	1.06E-4	4.82E-7	2.73E-6	5.57E-9	-1.12E-5	9.75E-5
ADP-f	MJ	6.22E+1	5.68E-2	1.36E-3	6.22E+1	2.86E-1	2.02E+0	1.69E-2	-3.13E+1	3.32E+1
WDP	m3 depriv.	1.24E+0	1.74E-4	5.22E-5	1.24E+0	8.78E-4	3.83E-2	8.50E-5	-7.38E-1	5.45E-1
PM	disease inc.	9.75E-8	3.34E-10	9.08E-12	9.79E-8	1.68E-9	1.11E-8	1.16E-10	-5.16E-8	5.92E-8
IR	kBq U-235 eq	6.28E-2	2.48E-4	1.02E-6	6.30E-2	1.25E-3	6.46E-3	7.88E-5	-2.91E-2	4.18E-2
ETP-fw	CTUe	4.08E+1	4.61E-2	1.21E-2	4.09E+1	2.32E-1	2.72E+0	1.63E-2	-2.00E+1	2.38E+1
HTP-c	CTUh	1.25E-9	1.64E-12	6.17E-13	1.25E-9	8.27E-12	2.84E-10	4.17E-13	-5.49E-10	9.94E-10
HTP-nc	CTUh	2.29E-8	5.49E-11	1.57E-11	2.30E-8	2.77E-10	3.53E-9	9.64E-12	-7.57E-9	1.92E-8
SQP	Pt	8.09E+1	4.86E-2	2.24E-3	8.10E+1	2.45E-1	1.57E+0	4.34E-2	-8.96E+1	-6.78E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.67E+1	8.14E-4	2.40E-2	1.67E+1	4.11E-3	9.54E-2	6.67E-4	-1.46E+1	2.21E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.67E+1	8.14E-4	2.40E-2	1.67E+1	4.11E-3	9.54E-2	6.67E-4	-1.46E+1	2.21E+0
PENRE	MJ	6.67E+1	6.03E-2	1.44E-3	6.67E+1	3.04E-1	2.15E+0	1.80E-2	-3.38E+1	3.54E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.67E+1	6.03E-2	1.44E-3	6.67E+1	3.04E-1	2.15E+0	1.80E-2	-3.38E+1	3.54E+1
PET	MJ	8.34E+1	6.11E-2	2.55E-2	8.34E+1	3.08E-1	2.25E+0	1.86E-2	-4.84E+1	3.76E+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	2.28E-2	6.42E-6	1.46E-6	2.29E-2	3.24E-5	1.37E-3	2.09E-5	-1.43E-2	1.00E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.16E-5	1.45E-7	2.73E-13	2.18E-5	7.32E-7	3.66E-6	2.04E-8	-1.66E-5	9.60E-6
NHWD	kg	1.63E-1	3.52E-3	1.05E-6	1.66E-1	1.77E-2	1.04E-1	7.45E-2	-7.00E-2	2.93E-1
RWD	kg	6.90E-5	3.86E-7	1.10E-13	6.94E-5	1.95E-6	8.37E-6	1.11E-7	-2.89E-5	5.09E-5
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