Environmental Profile

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

Ecochain v3.5.80

Product:	3020574 - Wafix PP Bend 88° BK 125 SN4 S/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	6.33E-1	1.83E-3	1.45E-4	6.35E-1	9.84E-3	8.97E-1	4.82E-3	-5.30E-1	1.02E+0
GWP-f	kg CO2 eq	1.08E+0	1.83E-3	1.46E-4	1.08E+0	9.83E-3	4.12E-1	4.82E-3	-6.02E-1	9.02E-1
GWP-b	kg CO2 eq	-4.44E-1	1.11E-6	-1.54E-6	-4.44E-1	5.97E-6	4.85E-1	4.25E-6	7.30E-2	1.14E-1
GWP-luluc	kg CO2 eq	1.22E-3	6.48E-7	1.49E-7	1.22E-3	3.48E-6	5.74E-5	8.33E-8	-8.81E-4	3.97E-4
ODP	kg CFC11 eq	6.83E-8	4.22E-10	8.26E-12	6.87E-8	2.27E-9	9.01E-9	1.22E-10	-3.86E-8	4.15E-8
AP	mol H+ eq	4.55E-3	1.04E-5	1.47E-6	4.56E-3	5.60E-5	3.75E-4	2.92E-6	-2.10E-3	2.90E-3
EP-fw	kg P eq	2.72E-5	1.51E-8	8.24E-9	2.72E-5	8.09E-8	1.70E-6	3.82E-9	-1.54E-5	1.36E-5
EP-m	kg N eq	8.75E-4	3.73E-6	1.55E-7	8.79E-4	2.00E-5	1.16E-4	2.25E-6	-4.36E-4	5.81E-4
EP-T	mol N eq	9.54E-3	4.12E-5	1.85E-6	9.59E-3	2.21E-4	1.28E-3	1.18E-5	-4.96E-3	6.14E-3
POCP	kg NMVOC eq	3.86E-3	1.18E-5	6.28E-7	3.87E-3	6.31E-5	3.93E-4	4.42E-6	-1.92E-3	2.41E-3
ADP-mm	kg Sb eq	5.34E-5	4.74E-8	1.97E-8	5.34E-5	2.54E-7	1.43E-6	2.93E-9	-5.83E-6	4.93E-5
ADP-f	MJ	3.27E+1	2.81E-2	1.36E-3	3.27E+1	1.51E-1	1.06E+0	8.90E-3	-1.65E+1	1.75E+1
WDP	m3 depriv.	6.54E-1	8.63E-5	5.22E-5	6.54E-1	4.63E-4	2.01E-2	4.54E-5	-3.84E-1	2.91E-1
PM	disease inc.	5.10E-8	1.65E-10	9.08E-12	5.12E-8	8.88E-10	5.84E-9	6.12E-11	-2.68E-8	3.12E-8
IR	kBq U-235 eq	3.26E-2	1.23E-4	1.02E-6	3.27E-2	6.60E-4	3.39E-3	4.14E-5	-1.51E-2	2.17E-2
ETP-fw	CTUe	2.13E+1	2.28E-2	1.21E-2	2.14E+1	1.23E-1	1.42E+0	8.52E-3	-1.02E+1	1.27E+1
HTP-c	CTUh	6.70E-10	8.13E-13	6.17E-13	6.71E-10	4.36E-12	1.50E-10	2.20E-13	-2.88E-10	5.38E-10
HTP-nc	CTUh	1.25E-8	2.72E-11	1.57E-11	1.26E-8	1.46E-10	1.86E-9	5.06E-12	-3.99E-9	1.06E-8
SQP	Pt	4.26E+1	2.41E-2	2.24E-3	4.27E+1	1.29E-1	8.26E-1	2.28E-2	-4.65E+1	-2.90E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.84E+0	4.03E-4	2.40E-2	9.87E+0	2.17E-3	5.02E-2	3.50E-4	-7.57E+0	2.35E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.84E+0	4.03E-4	2.40E-2	9.87E+0	2.17E-3	5.02E-2	3.50E-4	-7.57E+0	2.35E+0
PENRE	MJ	3.51E+1	2.99E-2	1.44E-3	3.51E+1	1.60E-1	1.13E+0	9.45E-3	-1.78E+1	1.86E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.51E+1	2.99E-2	1.44E-3	3.51E+1	1.60E-1	1.13E+0	9.45E-3	-1.78E+1	1.86E+1
PET	MJ	4.49E+1	3.03E-2	2.55E-2	4.50E+1	1.62E-1	1.18E+0	9.80E-3	-2.53E+1	2.10E+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	1.20E-2	3.18E-6	1.46E-6	1.20E-2	1.71E-5	7.13E-4	1.10E-5	-7.36E-3	5.37E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.10E-5	7.19E-8	2.73E-13	1.11E-5	3.86E-7	1.92E-6	1.07E-8	-8.64E-6	4.77E-6
NHWD	kg	8.27E-2	1.74E-3	1.05E-6	8.45E-2	9.36E-3	5.49E-2	3.92E-2	-3.66E-2	1.51E-1
RWD	kg	3.57E-5	1.91E-7	1.10E-13	3.59E-5	1.03E-6	4.39E-6	5.82E-8	-1.50E-5	2.64E-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