Environmental Profile

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

Ecochain v3.5.80

Product:	3020586 - Wafix PP Bend 45° WT 40 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	8.42E-2	9.19E-4	1.45E-4	8.53E-2	9.77E-4	8.82E-2	4.61E-4	-5.35E-2	1.21E-1
GWP-f	kg CO2 eq	1.33E-1	9.18E-4	1.46E-4	1.34E-1	9.76E-4	3.51E-2	4.61E-4	-6.04E-2	1.10E-1
GWP-b	kg CO2 eq	-4.92E-2	5.58E-7	-1.54E-6	-4.92E-2	5.93E-7	5.31E-2	4.02E-7	6.98E-3	1.08E-2
GWP-luluc	kg CO2 eq	1.37E-4	3.25E-7	1.49E-7	1.38E-4	3.46E-7	5.92E-6	7.72E-9	-8.72E-5	5.69E-5
ODP	kg CFC11 eq	9.24E-9	2.12E-10	8.26E-12	9.46E-9	2.25E-10	9.13E-10	1.15E-11	-3.43E-9	7.18E-9
AP	mol H+ eq	5.95E-4	5.23E-6	1.47E-6	6.01E-4	5.56E-6	3.76E-5	2.75E-7	-2.15E-4	4.30E-4
EP-fw	kg P eq	3.45E-6	7.56E-9	8.24E-9	3.47E-6	8.04E-9	1.75E-7	3.56E-10	-1.53E-6	2.12E-6
EP-m	kg N eq	1.14E-4	1.87E-6	1.55E-7	1.16E-4	1.99E-6	1.16E-5	1.80E-7	-4.46E-5	8.55E-5
EP-T	mol N eq	1.28E-3	2.06E-5	1.85E-6	1.30E-3	2.19E-5	1.27E-4	1.12E-6	-5.07E-4	9.46E-4
POCP	kg NMVOC eq	4.93E-4	5.90E-6	6.28E-7	5.00E-4	6.27E-6	3.95E-5	4.19E-7	-1.98E-4	3.48E-4
ADP-mm	kg Sb eq	7.36E-6	2.38E-8	1.97E-8	7.40E-6	2.53E-8	1.46E-7	2.76E-10	-4.69E-7	7.11E-6
ADP-f	MJ	3.80E+0	1.41E-2	1.36E-3	3.82E+0	1.50E-2	1.09E-1	8.42E-4	-1.68E+0	2.26E+0
WDP	m3 depriv.	8.09E-2	4.33E-5	5.22E-5	8.09E-2	4.60E-5	1.98E-3	3.85E-6	-3.84E-2	4.46E-2
PM	disease inc.	6.45E-9	8.29E-11	9.08E-12	6.54E-9	8.82E-11	5.99E-10	5.79E-12	-2.76E-9	4.47E-9
IR	kBq U-235 eq	4.29E-3	6.16E-5	1.02E-6	4.35E-3	6.55E-5	3.48E-4	3.91E-6	-1.48E-3	3.29E-3
ETP-fw	CTUe	2.55E+0	1.14E-2	1.21E-2	2.58E+0	1.22E-2	1.30E-1	7.05E-4	-1.00E+0	1.72E+0
HTP-c	CTUh	8.65E-11	4.07E-13	6.17E-13	8.75E-11	4.33E-13	1.55E-11	2.03E-14	-3.01E-11	7.33E-11
HTP-nc	CTUh	1.67E-9	1.36E-11	1.57E-11	1.70E-9	1.45E-11	1.87E-10	4.52E-13	-3.77E-10	1.52E-9
SQP	Pt	4.82E+0	1.21E-2	2.24E-3	4.84E+0	1.28E-2	8.55E-2	2.16E-3	-4.92E+0	2.00E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.12E+0	2.02E-4	2.40E-2	1.14E+0	2.15E-4	5.15E-3	3.28E-5	-7.94E-1	3.56E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.12E+0	2.02E-4	2.40E-2	1.14E+0	2.15E-4	5.15E-3	3.28E-5	-7.94E-1	3.56E-1
PENRE	MJ	4.08E+0	1.50E-2	1.44E-3	4.09E+0	1.59E-2	1.16E-1	8.93E-4	-1.81E+0	2.42E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.08E+0	1.50E-2	1.44E-3	4.09E+0	1.59E-2	1.16E-1	8.93E-4	-1.81E+0	2.42E+0
PET	MJ	5.20E+0	1.52E-2	2.55E-2	5.24E+0	1.61E-2	1.21E-1	9.26E-4	-2.61E+0	2.77E+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	1.57E-3	1.59E-6	1.46E-6	1.57E-3	1.70E-6	6.14E-5	1.04E-6	-7.32E-4	9.04E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.63E-6	3.60E-8	2.73E-13	1.67E-6	3.83E-8	1.91E-7	1.01E-9	-8.60E-7	1.04E-6
NHWD	kg	1.57E-2	8.74E-4	1.05E-6	1.65E-2	9.29E-4	5.57E-3	3.71E-3	-3.81E-3	2.29E-2
RWD	kg	4.70E-6	9.59E-8	1.10E-13	4.79E-6	1.02E-7	4.51E-7	5.50E-9	-1.47E-6	3.88E-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