Environmental Profile

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

Ecochain v3.5.80

Product:	3020599 - Wafix PP Bend 88° BK 50 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	8.11E-2	6.67E-4	1.45E-4	8.19E-2	1.43E-3	1.52E-1	6.73E-4	-7.67E-2	1.59E-1
GWP-f	kg CO2 eq	1.79E-1	6.67E-4	1.46E-4	1.80E-1	1.43E-3	4.61E-2	6.73E-4	-8.97E-2	1.38E-1
GWP-b	kg CO2 eq	-9.80E-2	4.05E-7	-1.54E-6	-9.80E-2	8.66E-7	1.05E-1	5.87E-7	1.31E-2	2.05E-2
GWP-luluc	kg CO2 eq	2.13E-4	2.36E-7	1.49E-7	2.14E-4	5.05E-7	8.75E-6	1.13E-8	-1.61E-4	6.21E-5
ODP	kg CFC11 eq	1.07E-8	1.54E-10	8.26E-12	1.08E-8	3.29E-10	1.39E-9	1.69E-11	-5.29E-9	7.28E-9
AP	mol H+ eq	7.71E-4	3.80E-6	1.47E-6	7.76E-4	8.13E-6	5.66E-5	4.01E-7	-3.48E-4	4.94E-4
EP-fw	kg P eq	4.55E-6	5.49E-9	8.24E-9	4.57E-6	1.17E-8	2.59E-7	5.19E-10	-2.65E-6	2.19E-6
EP-m	kg N eq	1.59E-4	1.36E-6	1.55E-7	1.60E-4	2.91E-6	1.75E-5	2.63E-7	-7.38E-5	1.07E-4
EP-T	mol N eq	1.74E-3	1.50E-5	1.85E-6	1.76E-3	3.20E-5	1.93E-4	1.63E-6	-8.44E-4	1.14E-3
POCP	kg NMVOC eq	6.65E-4	4.28E-6	6.28E-7	6.70E-4	9.16E-6	5.96E-5	6.13E-7	-3.22E-4	4.17E-4
ADP-mm	kg Sb eq	5.45E-6	1.72E-8	1.97E-8	5.49E-6	3.69E-8	2.22E-7	4.03E-10	-7.63E-7	4.98E-6
ADP-f	MJ	5.12E+0	1.02E-2	1.36E-3	5.13E+0	2.19E-2	1.63E-1	1.23E-3	-2.48E+0	2.83E+0
WDP	m3 depriv.	1.03E-1	3.14E-5	5.22E-5	1.03E-1	6.72E-5	2.90E-3	5.63E-6	-6.11E-2	4.50E-2
PM	disease inc.	8.83E-9	6.02E-11	9.08E-12	8.90E-9	1.29E-10	9.02E-10	8.46E-12	-4.77E-9	5.16E-9
IR	kBq U-235 eq	5.04E-3	4.47E-5	1.02E-6	5.09E-3	9.57E-5	5.27E-4	5.71E-6	-2.50E-3	3.21E-3
ETP-fw	CTUe	3.68E+0	8.31E-3	1.21E-2	3.70E+0	1.78E-2	1.96E-1	1.03E-3	-1.79E+0	2.12E+0
HTP-c	CTUh	1.24E-10	2.96E-13	6.17E-13	1.25E-10	6.33E-13	2.27E-11	2.96E-14	-5.50E-11	9.36E-11
HTP-nc	CTUh	2.22E-9	9.91E-12	1.57E-11	2.24E-9	2.12E-11	2.75E-10	6.60E-13	-7.05E-10	1.84E-9
SQP	Pt	9.23E+0	8.75E-3	2.24E-3	9.24E+0	1.87E-2	1.27E-1	3.16E-3	-9.58E+0	-1.90E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.97E+0	1.47E-4	2.40E-2	1.99E+0	3.14E-4	7.63E-3	4.80E-5	-1.54E+0	4.66E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.97E+0	1.47E-4	2.40E-2	1.99E+0	3.14E-4	7.63E-3	4.80E-5	-1.54E+0	4.66E-1
PENRE	MJ	5.49E+0	1.09E-2	1.44E-3	5.50E+0	2.33E-2	1.74E-1	1.31E-3	-2.67E+0	3.03E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.49E+0	1.09E-2	1.44E-3	5.50E+0	2.33E-2	1.74E-1	1.31E-3	-2.67E+0	3.03E+0
PET	MJ	7.46E+0	1.10E-2	2.55E-2	7.50E+0	2.36E-2	1.81E-1	1.35E-3	-4.21E+0	3.50E+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	1.91E-3	1.16E-6	1.46E-6	1.92E-3	2.48E-6	9.04E-5	1.52E-6	-1.21E-3	8.03E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.24E-6	2.62E-8	2.73E-13	2.26E-6	5.60E-8	2.88E-7	1.48E-9	-1.36E-6	1.25E-6
NHWD	kg	2.17E-2	6.34E-4	1.05E-6	2.23E-2	1.36E-3	8.09E-3	5.43E-3	-6.81E-3	3.04E-2
RWD	kg	5.39E-6	6.96E-8	1.10E-13	5.46E-6	1.49E-7	6.85E-7	8.04E-9	-2.50E-6	3.81E-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

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