Environmental Profile

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

Ecochain v3.5.80

Product:	3020598 - Wafix PP Bend 88° BK 50 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	1.06E-1	1.03E-3	1.45E-4	1.07E-1	1.70E-3	1.60E-1	7.99E-4	-8.95E-2	1.80E-1
GWP-f	kg CO2 eq	2.04E-1	1.03E-3	1.46E-4	2.05E-1	1.70E-3	5.43E-2	8.00E-4	-1.02E-1	1.59E-1
GWP-b	kg CO2 eq	-9.79E-2	6.27E-7	-1.54E-6	-9.79E-2	1.03E-6	1.05E-1	6.97E-7	1.30E-2	2.05E-2
GWP-luluc	kg CO2 eq	2.24E-4	3.65E-7	1.49E-7	2.24E-4	6.00E-7	1.03E-5	1.34E-8	-1.63E-4	7.16E-5
ODP	kg CFC11 eq	1.28E-8	2.38E-10	8.26E-12	1.30E-8	3.91E-10	1.59E-9	2.00E-11	-5.77E-9	9.25E-9
AP	mol H+ eq	8.80E-4	5.88E-6	1.47E-6	8.87E-4	9.66E-6	6.49E-5	4.77E-7	-3.83E-4	5.79E-4
EP-fw	kg P eq	5.07E-6	8.49E-9	8.24E-9	5.09E-6	1.39E-8	3.03E-7	6.17E-10	-2.79E-6	2.62E-6
EP-m	kg N eq	1.77E-4	2.10E-6	1.55E-7	1.79E-4	3.46E-6	1.99E-5	3.12E-7	-8.01E-5	1.22E-4
EP-T	mol N eq	1.95E-3	2.32E-5	1.85E-6	1.98E-3	3.81E-5	2.19E-4	1.94E-6	-9.13E-4	1.33E-3
POCP	kg NMVOC eq	7.52E-4	6.63E-6	6.28E-7	7.59E-4	1.09E-5	6.80E-5	7.28E-7	-3.54E-4	4.85E-4
ADP-mm	kg Sb eq	8.01E-6	2.67E-8	1.97E-8	8.06E-6	4.39E-8	2.54E-7	4.79E-10	-8.46E-7	7.51E-6
ADP-f	MJ	5.89E+0	1.58E-2	1.36E-3	5.91E+0	2.60E-2	1.89E-1	1.46E-3	-2.88E+0	3.25E+0
WDP	m3 depriv.	1.19E-1	4.86E-5	5.22E-5	1.19E-1	7.99E-5	3.42E-3	6.69E-6	-6.79E-2	5.48E-2
PM	disease inc.	9.89E-9	9.32E-11	9.08E-12	9.99E-9	1.53E-10	1.04E-9	1.00E-11	-5.06E-9	6.13E-9
IR	kBq U-235 eq	5.99E-3	6.92E-5	1.02E-6	6.06E-3	1.14E-4	6.06E-4	6.79E-6	-2.69E-3	4.10E-3
ETP-fw	CTUe	3.97E+0	1.29E-2	1.21E-2	3.99E+0	2.11E-2	2.25E-1	1.22E-3	-1.84E+0	2.40E+0
HTP-c	CTUh	1.35E-10	4.58E-13	6.17E-13	1.36E-10	7.52E-13	2.63E-11	3.52E-14	-5.71E-11	1.06E-10
HTP-nc	CTUh	2.50E-9	1.53E-11	1.57E-11	2.53E-9	2.52E-11	3.19E-10	7.84E-13	-7.64E-10	2.11E-9
SQP	Pt	9.31E+0	1.36E-2	2.24E-3	9.33E+0	2.23E-2	1.48E-1	3.75E-3	-9.59E+0	-8.53E-2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.08E+0	2.27E-4	2.40E-2	2.11E+0	3.73E-4	8.93E-3	5.70E-5	-1.54E+0	5.73E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.08E+0	2.27E-4	2.40E-2	2.11E+0	3.73E-4	8.93E-3	5.70E-5	-1.54E+0	5.73E-1
PENRE	MJ	6.32E+0	1.68E-2	1.44E-3	6.34E+0	2.76E-2	2.01E-1	1.55E-3	-3.10E+0	3.47E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.32E+0	1.68E-2	1.44E-3	6.34E+0	2.76E-2	2.01E-1	1.55E-3	-3.10E+0	3.47E+0
PET	MJ	8.40E+0	1.70E-2	2.55E-2	8.45E+0	2.80E-2	2.10E-1	1.61E-3	-4.64E+0	4.05E+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	2.21E-3	1.79E-6	1.46E-6	2.21E-3	2.94E-6	1.06E-4	1.81E-6	-1.31E-3	1.02E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.49E-6	4.05E-8	2.73E-13	2.53E-6	6.65E-8	3.31E-7	1.76E-9	-1.45E-6	1.48E-6
NHWD	kg	2.42E-2	9.82E-4	1.05E-6	2.51E-2	1.61E-3	9.39E-3	6.45E-3	-7.11E-3	3.55E-2
RWD	kg	6.50E-6	1.08E-7	1.10E-13	6.61E-6	1.77E-7	7.85E-7	9.55E-9	-2.66E-6	4.92E-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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