Environmental Profile

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

Ecochain v3.5.80

Product:	3043880 - Wafix PP Bend 88° GY 40 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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.27E-2	5.37E-4	1.45E-4	8.33E-2	1.06E-3	8.80E-2	5.00E-4	-5.57E-2	1.17E-1
GWP-f	kg CO2 eq	1.32E-1	5.36E-4	1.46E-4	1.32E-1	1.06E-3	3.49E-2	5.00E-4	-6.26E-2	1.06E-1
GWP-b	kg CO2 eq	-4.90E-2	3.26E-7	-1.54E-6	-4.90E-2	6.43E-7	5.31E-2	4.36E-7	6.97E-3	1.10E-2
GWP-luluc	kg CO2 eq	1.31E-4	1.90E-7	1.49E-7	1.31E-4	3.75E-7	6.36E-6	8.37E-9	-8.79E-5	4.97E-5
ODP	kg CFC11 eq	7.73E-9	1.24E-10	8.26E-12	7.86E-9	2.44E-10	9.67E-10	1.25E-11	-3.41E-9	5.68E-9
AP	mol H+ eq	5.62E-4	3.05E-6	1.47E-6	5.66E-4	6.03E-6	3.97E-5	2.98E-7	-2.24E-4	3.88E-4
EP-fw	kg P eq	3.18E-6	4.41E-9	8.24E-9	3.19E-6	8.72E-9	1.87E-7	3.86E-10	-1.57E-6	1.82E-6
EP-m	kg N eq	1.11E-4	1.09E-6	1.55E-7	1.12E-4	2.16E-6	1.21E-5	1.95E-7	-4.61E-5	8.03E-5
EP-T	mol N eq	1.23E-3	1.20E-5	1.85E-6	1.24E-3	2.38E-5	1.34E-4	1.21E-6	-5.24E-4	8.78E-4
POCP	kg NMVOC eq	4.77E-4	3.44E-6	6.28E-7	4.81E-4	6.80E-6	4.15E-5	4.55E-7	-2.06E-4	3.23E-4
ADP-mm	kg Sb eq	4.85E-6	1.39E-8	1.97E-8	4.88E-6	2.74E-8	1.56E-7	2.99E-10	-4.93E-7	4.57E-6
ADP-f	MJ	3.84E+0	8.23E-3	1.36E-3	3.85E+0	1.63E-2	1.16E-1	9.13E-4	-1.77E+0	2.21E+0
WDP	m3 depriv.	7.91E-2	2.53E-5	5.22E-5	7.91E-2	4.99E-5	2.13E-3	4.18E-6	-4.03E-2	4.10E-2
PM	disease inc.	6.10E-9	4.84E-11	9.08E-12	6.16E-9	9.56E-11	6.36E-10	6.28E-12	-2.84E-9	4.06E-9
IR	kBq U-235 eq	3.74E-3	3.60E-5	1.02E-6	3.77E-3	7.11E-5	3.70E-4	4.24E-6	-1.53E-3	2.69E-3
ETP-fw	CTUe	2.34E+0	6.68E-3	1.21E-2	2.36E+0	1.32E-2	1.38E-1	7.64E-4	-1.02E+0	1.50E+0
HTP-c	CTUh	8.08E-11	2.38E-13	6.17E-13	8.16E-11	4.70E-13	1.62E-11	2.20E-14	-3.07E-11	6.77E-11
HTP-nc	CTUh	1.53E-9	7.97E-12	1.57E-11	1.56E-9	1.57E-11	1.98E-10	4.90E-13	-3.93E-10	1.38E-9
SQP	Pt	4.77E+0	7.04E-3	2.24E-3	4.78E+0	1.39E-2	9.15E-2	2.35E-3	-4.92E+0	-3.42E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.04E+0	1.18E-4	2.40E-2	1.06E+0	2.33E-4	5.53E-3	3.56E-5	-7.96E-1	2.70E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.04E+0	1.18E-4	2.40E-2	1.06E+0	2.33E-4	5.53E-3	3.56E-5	-7.96E-1	2.70E-1
PENRE	MJ	4.12E+0	8.74E-3	1.44E-3	4.13E+0	1.73E-2	1.24E-1	9.69E-4	-1.91E+0	2.36E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.12E+0	8.74E-3	1.44E-3	4.13E+0	1.73E-2	1.24E-1	9.69E-4	-1.91E+0	2.36E+0
PET	MJ	5.16E+0	8.86E-3	2.55E-2	5.19E+0	1.75E-2	1.30E-1	1.00E-3	-2.71E+0	2.63E+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	1.46E-3	9.31E-7	1.46E-6	1.46E-3	1.84E-6	6.54E-5	1.13E-6	-7.61E-4	7.70E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.52E-6	2.10E-8	2.73E-13	1.54E-6	4.16E-8	2.02E-7	1.10E-9	-8.56E-7	9.30E-7
NHWD	kg	1.51E-2	5.10E-4	1.05E-6	1.56E-2	1.01E-3	5.83E-3	4.03E-3	-3.89E-3	2.26E-2
RWD	kg	3.99E-6	5.60E-8	1.10E-13	4.05E-6	1.11E-7	4.79E-7	5.97E-9	-1.50E-6	3.14E-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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