Environmental Profile

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

Ecochain v3.5.80

Product:	3079257 - Wafix PP Bend 30° BK 90 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	2.73E-1	2.01E-3	1.45E-4	2.76E-1	4.16E-3	3.03E-1	1.96E-3	-2.23E-1	3.62E-1
GWP-f	kg CO2 eq	4.20E-1	2.01E-3	1.46E-4	4.23E-1	4.16E-3	1.47E-1	1.96E-3	-2.37E-1	3.38E-1
GWP-b	kg CO2 eq	-1.47E-1	1.22E-6	-1.54E-6	-1.47E-1	2.53E-6	1.56E-1	1.70E-6	1.44E-2	2.36E-2
GWP-luluc	kg CO2 eq	3.79E-4	7.11E-7	1.49E-7	3.80E-4	1.47E-6	2.45E-5	3.37E-8	-2.31E-4	1.75E-4
ODP	kg CFC11 eq	2.30E-8	4.63E-10	8.26E-12	2.35E-8	9.58E-10	3.55E-9	4.92E-11	-1.39E-8	1.42E-8
AP	mol H+ eq	1.72E-3	1.14E-5	1.47E-6	1.73E-3	2.37E-5	1.48E-4	1.17E-6	-7.76E-4	1.13E-3
EP-fw	kg P eq	9.64E-6	1.65E-8	8.24E-9	9.67E-6	3.42E-8	7.16E-7	1.54E-9	-4.73E-6	5.69E-6
EP-m	kg N eq	3.21E-4	4.10E-6	1.55E-7	3.26E-4	8.48E-6	4.48E-5	7.61E-7	-1.56E-4	2.24E-4
EP-T	mol N eq	3.55E-3	4.51E-5	1.85E-6	3.59E-3	9.34E-5	4.93E-4	4.77E-6	-1.76E-3	2.42E-3
POCP	kg NMVOC eq	1.47E-3	1.29E-5	6.28E-7	1.48E-3	2.67E-5	1.54E-4	1.79E-6	-7.16E-4	9.50E-4
ADP-mm	kg Sb eq	1.56E-5	5.20E-8	1.97E-8	1.57E-5	1.08E-7	5.74E-7	1.19E-9	-1.79E-6	1.46E-5
ADP-f	MJ	1.32E+1	3.08E-2	1.36E-3	1.32E+1	6.38E-2	4.41E-1	3.59E-3	-6.81E+0	6.91E+0
WDP	m3 depriv.	2.65E-1	9.47E-5	5.22E-5	2.65E-1	1.96E-4	8.24E-3	1.93E-5	-1.40E-1	1.33E-1
PM	disease inc.	1.84E-8	1.81E-10	9.08E-12	1.86E-8	3.75E-10	2.37E-9	2.47E-11	-8.97E-9	1.24E-8
IR	kBq U-235 eq	1.20E-2	1.35E-4	1.02E-6	1.21E-2	2.79E-4	1.38E-3	1.66E-5	-5.03E-3	8.75E-3
ETP-fw	CTUe	6.61E+0	2.50E-2	1.21E-2	6.65E+0	5.18E-2	5.15E-1	3.01E-3	-2.76E+0	4.46E+0
HTP-c	CTUh	2.19E-10	8.91E-13	6.17E-13	2.20E-10	1.84E-12	6.39E-11	8.87E-14	-9.76E-11	1.89E-10
HTP-nc	CTUh	4.29E-9	2.99E-11	1.57E-11	4.34E-9	6.18E-11	7.60E-10	1.94E-12	-1.52E-9	3.64E-9
SQP	Pt	1.41E+1	2.64E-2	2.24E-3	1.41E+1	5.46E-2	3.48E-1	9.21E-3	-1.37E+1	8.36E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.16E+0	4.43E-4	2.40E-2	3.19E+0	9.16E-4	2.12E-2	1.38E-4	-2.20E+0	1.01E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.16E+0	4.43E-4	2.40E-2	3.19E+0	9.16E-4	2.12E-2	1.38E-4	-2.20E+0	1.01E+0
PENRE	MJ	1.41E+1	3.28E-2	1.44E-3	1.42E+1	6.78E-2	4.70E-1	3.81E-3	-7.34E+0	7.38E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.41E+1	3.28E-2	1.44E-3	1.42E+1	6.78E-2	4.70E-1	3.81E-3	-7.34E+0	7.38E+0
PET	MJ	1.73E+1	3.32E-2	2.55E-2	1.74E+1	6.87E-2	4.91E-1	3.95E-3	-9.54E+0	8.39E+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	4.71E-3	3.49E-6	1.46E-6	4.71E-3	7.22E-6	2.52E-4	4.42E-6	-2.45E-3	2.53E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.81E-6	7.89E-8	2.73E-13	3.89E-6	1.63E-7	7.53E-7	4.34E-9	-2.91E-6	1.91E-6
NHWD	kg	3.04E-2	1.91E-3	1.05E-6	3.23E-2	3.96E-3	2.26E-2	1.58E-2	-1.24E-2	6.23E-2
RWD	kg	1.27E-5	2.10E-7	1.10E-13	1.29E-5	4.34E-7	1.77E-6	2.34E-8	-4.90E-6	1.02E-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

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