Environmental Profile

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

Ecochain v3.5.80

Product:	3079256 - Wafix PP Bend 15° 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	2.52E-1	2.01E-3	1.45E-4	2.54E-1	3.90E-3	2.95E-1	1.84E-3	-2.11E-1	3.44E-1
GWP-f	kg CO2 eq	3.99E-1	2.01E-3	1.46E-4	4.01E-1	3.90E-3	1.39E-1	1.84E-3	-2.25E-1	3.21E-1
GWP-b	kg CO2 eq	-1.47E-1	1.22E-6	-1.54E-6	-1.47E-1	2.37E-6	1.56E-1	1.60E-6	1.44E-2	2.35E-2
GWP-luluc	kg CO2 eq	3.73E-4	7.11E-7	1.49E-7	3.74E-4	1.38E-6	2.30E-5	3.16E-8	-2.29E-4	1.70E-4
ODP	kg CFC11 eq	2.25E-8	4.63E-10	8.26E-12	2.30E-8	8.98E-10	3.36E-9	4.61E-11	-1.34E-8	1.39E-8
AP	mol H+ eq	1.64E-3	1.14E-5	1.47E-6	1.65E-3	2.22E-5	1.40E-4	1.10E-6	-7.41E-4	1.07E-3
EP-fw	kg P eq	9.29E-6	1.65E-8	8.24E-9	9.31E-6	3.21E-8	6.73E-7	1.44E-9	-4.59E-6	5.43E-6
EP-m	kg N eq	3.08E-4	4.10E-6	1.55E-7	3.13E-4	7.94E-6	4.24E-5	7.13E-7	-1.50E-4	2.14E-4
EP-T	mol N eq	3.40E-3	4.51E-5	1.85E-6	3.44E-3	8.75E-5	4.67E-4	4.47E-6	-1.69E-3	2.31E-3
POCP	kg NMVOC eq	1.40E-3	1.29E-5	6.28E-7	1.42E-3	2.50E-5	1.45E-4	1.68E-6	-6.85E-4	9.03E-4
ADP-mm	kg Sb eq	1.52E-5	5.20E-8	1.97E-8	1.53E-5	1.01E-7	5.42E-7	1.11E-9	-1.71E-6	1.42E-5
ADP-f	MJ	1.24E+1	3.08E-2	1.36E-3	1.25E+1	5.98E-2	4.15E-1	3.37E-3	-6.43E+0	6.53E+0
WDP	m3 depriv.	2.50E-1	9.47E-5	5.22E-5	2.51E-1	1.84E-4	7.74E-3	1.83E-5	-1.33E-1	1.25E-1
PM	disease inc.	1.77E-8	1.81E-10	9.08E-12	1.79E-8	3.52E-10	2.24E-9	2.31E-11	-8.68E-9	1.19E-8
IR	kBq U-235 eq	1.16E-2	1.35E-4	1.02E-6	1.17E-2	2.61E-4	1.30E-3	1.56E-5	-4.85E-3	8.45E-3
ETP-fw	CTUe	6.41E+0	2.50E-2	1.21E-2	6.45E+0	4.86E-2	4.86E-1	2.82E-3	-2.71E+0	4.27E+0
HTP-c	CTUh	2.09E-10	8.91E-13	6.17E-13	2.11E-10	1.73E-12	6.05E-11	8.32E-14	-9.55E-11	1.78E-10
HTP-nc	CTUh	4.04E-9	2.99E-11	1.57E-11	4.09E-9	5.79E-11	7.17E-10	1.82E-12	-1.46E-9	3.40E-9
SQP	Pt	1.40E+1	2.64E-2	2.24E-3	1.40E+1	5.12E-2	3.28E-1	8.63E-3	-1.37E+1	7.79E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.96E+0	4.43E-4	2.40E-2	2.98E+0	8.58E-4	1.99E-2	1.30E-4	-2.20E+0	8.10E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.96E+0	4.43E-4	2.40E-2	2.98E+0	8.58E-4	1.99E-2	1.30E-4	-2.20E+0	8.10E-1
PENRE	MJ	1.33E+1	3.28E-2	1.44E-3	1.34E+1	6.35E-2	4.42E-1	3.57E-3	-6.93E+0	6.97E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.33E+1	3.28E-2	1.44E-3	1.34E+1	6.35E-2	4.42E-1	3.57E-3	-6.93E+0	6.97E+0
PET	MJ	1.63E+1	3.32E-2	2.55E-2	1.64E+1	6.43E-2	4.62E-1	3.70E-3	-9.12E+0	7.78E+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	4.49E-3	3.49E-6	1.46E-6	4.49E-3	6.77E-6	2.37E-4	4.14E-6	-2.35E-3	2.39E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.72E-6	7.89E-8	2.73E-13	3.80E-6	1.53E-7	7.11E-7	4.07E-9	-2.82E-6	1.85E-6
NHWD	kg	2.96E-2	1.91E-3	1.05E-6	3.16E-2	3.71E-3	2.13E-2	1.48E-2	-1.21E-2	5.93E-2
RWD	kg	1.24E-5	2.10E-7	1.10E-13	1.26E-5	4.07E-7	1.67E-6	2.20E-8	-4.74E-6	9.95E-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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