Environmental Profile

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

Ecochain v3.5.80

Product:	3020572 - Wafix PP Bend 45° BK 125 SN4 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	5.24E-1	1.19E-3	1.45E-4	5.26E-1	7.55E-3	6.57E-1	3.74E-3	-4.04E-1	7.90E-1
GWP-f	kg CO2 eq	8.20E-1	1.19E-3	1.46E-4	8.21E-1	7.54E-3	3.34E-1	3.74E-3	-4.52E-1	7.14E-1
GWP-b	kg CO2 eq	-2.97E-1	7.20E-7	-1.54E-6	-2.97E-1	4.58E-6	3.23E-1	3.31E-6	4.87E-2	7.57E-2
GWP-luluc	kg CO2 eq	8.62E-4	4.20E-7	1.49E-7	8.62E-4	2.67E-6	4.31E-5	6.49E-8	-6.00E-4	3.08E-4
ODP	kg CFC11 eq	5.56E-8	2.73E-10	8.26E-12	5.58E-8	1.74E-9	6.67E-9	9.48E-11	-2.92E-8	3.52E-8
AP	mol H+ eq	3.50E-3	6.75E-6	1.47E-6	3.51E-3	4.30E-5	2.79E-4	2.27E-6	-1.51E-3	2.32E-3
EP-fw	kg P eq	2.03E-5	9.76E-9	8.24E-9	2.03E-5	6.21E-8	1.27E-6	2.97E-9	-1.07E-5	1.10E-5
EP-m	kg N eq	6.55E-4	2.42E-6	1.55E-7	6.57E-4	1.54E-5	8.65E-5	1.83E-6	-3.12E-4	4.49E-4
EP-T	mol N eq	7.18E-3	2.66E-5	1.85E-6	7.21E-3	1.69E-4	9.52E-4	9.20E-6	-3.54E-3	4.80E-3
POCP	kg NMVOC eq	2.94E-3	7.61E-6	6.28E-7	2.94E-3	4.84E-5	2.92E-4	3.44E-6	-1.38E-3	1.91E-3
ADP-mm	kg Sb eq	5.01E-5	3.07E-8	1.97E-8	5.02E-5	1.95E-7	1.05E-6	2.28E-9	-4.58E-6	4.68E-5
ADP-f	MJ	2.51E+1	1.82E-2	1.36E-3	2.51E+1	1.16E-1	7.94E-1	6.93E-3	-1.24E+1	1.36E+1
WDP	m3 depriv.	5.05E-1	5.59E-5	5.22E-5	5.05E-1	3.55E-4	1.54E-2	3.54E-5	-2.78E-1	2.42E-1
PM	disease inc.	3.84E-8	1.07E-10	9.08E-12	3.85E-8	6.81E-10	4.33E-9	4.76E-11	-1.87E-8	2.48E-8
IR	kBq U-235 eq	2.59E-2	7.95E-5	1.02E-6	2.60E-2	5.06E-4	2.51E-3	3.23E-5	-1.09E-2	1.82E-2
ETP-fw	CTUe	1.56E+1	1.48E-2	1.21E-2	1.56E+1	9.40E-2	1.09E+0	6.86E-3	-6.93E+0	9.88E+0
HTP-c	CTUh	4.54E-10	5.26E-13	6.17E-13	4.55E-10	3.35E-12	1.12E-10	1.72E-13	-2.00E-10	3.70E-10
HTP-nc	CTUh	9.21E-9	1.76E-11	1.57E-11	9.24E-9	1.12E-10	1.39E-9	4.00E-12	-3.41E-9	7.34E-9
SQP	Pt	2.88E+1	1.56E-2	2.24E-3	2.88E+1	9.91E-2	6.15E-1	1.77E-2	-3.11E+1	-1.57E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.58E+0	2.61E-4	2.40E-2	7.60E+0	1.66E-3	3.76E-2	2.74E-4	-5.07E+0	2.57E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.58E+0	2.61E-4	2.40E-2	7.60E+0	1.66E-3	3.76E-2	2.74E-4	-5.07E+0	2.57E+0
PENRE	MJ	2.69E+1	1.93E-2	1.44E-3	2.69E+1	1.23E-1	8.45E-1	7.35E-3	-1.34E+1	1.45E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.69E+1	1.93E-2	1.44E-3	2.69E+1	1.23E-1	8.45E-1	7.35E-3	-1.34E+1	1.45E+1
PET	MJ	3.45E+1	1.96E-2	2.55E-2	3.45E+1	1.25E-1	8.83E-1	7.62E-3	-1.85E+1	1.71E+1
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	9.28E-3	2.06E-6	1.46E-6	9.28E-3	1.31E-5	5.65E-4	8.55E-6	-5.26E-3	4.61E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.94E-6	4.65E-8	2.73E-13	7.98E-6	2.96E-7	1.43E-6	8.34E-9	-6.02E-6	3.70E-6
NHWD	kg	5.89E-2	1.13E-3	1.05E-6	6.00E-2	7.18E-3	4.14E-2	3.05E-2	-2.53E-2	1.14E-1
RWD	kg	2.89E-5	1.24E-7	1.10E-13	2.90E-5	7.87E-7	3.24E-6	4.53E-8	-1.08E-5	2.23E-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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