Environmental Profile

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

Ecochain v3.5.80

Product:	3020584 - Wafix PP Bend 88° WT 32 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	5.51E-2	4.42E-4	1.45E-4	5.57E-2	7.22E-4	8.44E-2	3.40E-4	-4.45E-2	9.66E-2
GWP-f	kg CO2 eq	1.04E-1	4.42E-4	1.46E-4	1.05E-1	7.21E-4	3.21E-2	3.40E-4	-5.06E-2	8.73E-2
GWP-b	kg CO2 eq	-4.91E-2	2.68E-7	-1.54E-6	-4.91E-2	4.38E-7	5.23E-2	2.95E-7	6.15E-3	9.34E-3
GWP-luluc	kg CO2 eq	1.15E-4	1.56E-7	1.49E-7	1.15E-4	2.55E-7	4.48E-6	5.98E-9	-7.75E-5	4.21E-5
ODP	kg CFC11 eq	6.32E-9	1.02E-10	8.26E-12	6.43E-9	1.66E-10	7.19E-10	8.54E-12	-3.71E-9	3.61E-9
AP	mol H+ eq	4.64E-4	2.52E-6	1.47E-6	4.68E-4	4.11E-6	2.98E-5	2.04E-7	-1.79E-4	3.23E-4
EP-fw	kg P eq	2.78E-6	3.64E-9	8.24E-9	2.79E-6	5.93E-9	1.33E-7	2.71E-10	-1.33E-6	1.60E-6
EP-m	kg N eq	8.78E-5	9.01E-7	1.55E-7	8.88E-5	1.47E-6	9.34E-6	1.31E-7	-3.82E-5	6.15E-5
EP-T	mol N eq	9.80E-4	9.92E-6	1.85E-6	9.92E-4	1.62E-5	1.03E-4	8.28E-7	-4.35E-4	6.77E-4
POCP	kg NMVOC eq	3.82E-4	2.84E-6	6.28E-7	3.85E-4	4.63E-6	3.16E-5	3.11E-7	-1.67E-4	2.55E-4
ADP-mm	kg Sb eq	4.66E-6	1.14E-8	1.97E-8	4.69E-6	1.87E-8	1.13E-7	2.08E-10	-3.99E-7	4.43E-6
ADP-f	MJ	2.98E+0	6.78E-3	1.36E-3	2.99E+0	1.11E-2	8.37E-2	6.24E-4	-1.34E+0	1.75E+0
WDP	m3 depriv.	6.54E-2	2.08E-5	5.22E-5	6.55E-2	3.40E-5	1.49E-3	3.81E-6	-3.14E-2	3.56E-2
PM	disease inc.	5.02E-9	3.99E-11	9.08E-12	5.07E-9	6.51E-11	4.68E-10	4.29E-12	-2.37E-9	3.23E-9
IR	kBq U-235 eq	3.11E-3	2.96E-5	1.02E-6	3.14E-3	4.84E-5	2.71E-4	2.88E-6	-1.29E-3	2.18E-3
ETP-fw	CTUe	2.05E+0	5.51E-3	1.21E-2	2.07E+0	8.99E-3	1.02E-1	5.22E-4	-8.85E-1	1.30E+0
HTP-c	CTUh	7.09E-11	1.96E-13	6.17E-13	7.17E-11	3.20E-13	1.31E-11	1.57E-14	-2.81E-11	5.70E-11
HTP-nc	CTUh	1.28E-9	6.57E-12	1.57E-11	1.30E-9	1.07E-11	1.49E-10	3.39E-13	-3.15E-10	1.14E-9
SQP	Pt	4.62E+0	5.80E-3	2.24E-3	4.63E+0	9.47E-3	6.56E-2	1.60E-3	-4.70E+0	8.71E-3
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.90E-1	9.73E-5	2.40E-2	9.14E-1	1.59E-4	3.92E-3	2.38E-5	-7.52E-1	1.67E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.90E-1	9.73E-5	2.40E-2	9.14E-1	1.59E-4	3.92E-3	2.38E-5	-7.52E-1	1.67E-1
PENRE	MJ	3.20E+0	7.20E-3	1.44E-3	3.20E+0	1.18E-2	8.92E-2	6.62E-4	-1.44E+0	1.87E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.20E+0	7.20E-3	1.44E-3	3.20E+0	1.18E-2	8.92E-2	6.62E-4	-1.44E+0	1.87E+0
PET	MJ	4.09E+0	7.30E-3	2.55E-2	4.12E+0	1.19E-2	9.31E-2	6.86E-4	-2.19E+0	2.03E+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	1.27E-3	7.68E-7	1.46E-6	1.27E-3	1.25E-6	4.75E-5	7.66E-7	-6.04E-4	7.19E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.21E-6	1.73E-8	2.73E-13	1.23E-6	2.83E-8	1.50E-7	7.58E-10	-8.26E-7	5.78E-7
NHWD	kg	9.96E-3	4.20E-4	1.05E-6	1.04E-2	6.86E-4	4.54E-3	2.74E-3	-3.48E-3	1.49E-2
RWD	kg	3.24E-6	4.61E-8	1.10E-13	3.29E-6	7.53E-8	3.52E-7	4.06E-9	-1.29E-6	2.43E-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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