Environmental Profile

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

Ecochain v3.5.80

Product:	3020601 - Wafix PP Bend 88° WT 50 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	7.20E-2	6.94E-4	1.45E-4	7.28E-2	1.29E-3	1.51E-1	6.10E-4	-7.28E-2	1.53E-1
GWP-f	kg CO2 eq	1.70E-1	6.94E-4	1.46E-4	1.71E-1	1.29E-3	4.58E-2	6.10E-4	-8.57E-2	1.33E-1
GWP-b	kg CO2 eq	-9.81E-2	4.21E-7	-1.54E-6	-9.81E-2	7.85E-7	1.05E-1	5.32E-7	1.31E-2	2.04E-2
GWP-luluc	kg CO2 eq	2.14E-4	2.46E-7	1.49E-7	2.14E-4	4.57E-7	8.03E-6	1.02E-8	-1.60E-4	6.29E-5
ODP	kg CFC11 eq	1.01E-8	1.60E-10	8.26E-12	1.03E-8	2.98E-10	1.30E-9	1.53E-11	-5.29E-9	6.65E-9
AP	mol H+ eq	7.50E-4	3.95E-6	1.47E-6	7.56E-4	7.36E-6	5.30E-5	3.63E-7	-3.32E-4	4.85E-4
EP-fw	kg P eq	4.52E-6	5.71E-9	8.24E-9	4.53E-6	1.06E-8	2.38E-7	4.71E-10	-2.59E-6	2.19E-6
EP-m	kg N eq	1.54E-4	1.41E-6	1.55E-7	1.55E-4	2.63E-6	1.66E-5	2.38E-7	-7.13E-5	1.03E-4
EP-T	mol N eq	1.70E-3	1.56E-5	1.85E-6	1.71E-3	2.90E-5	1.82E-4	1.48E-6	-8.16E-4	1.11E-3
POCP	kg NMVOC eq	6.37E-4	4.45E-6	6.28E-7	6.42E-4	8.30E-6	5.62E-5	5.55E-7	-3.08E-4	3.99E-4
ADP-mm	kg Sb eq	4.97E-6	1.79E-8	1.97E-8	5.01E-6	3.34E-8	2.06E-7	3.65E-10	-7.24E-7	4.53E-6
ADP-f	MJ	4.73E+0	1.06E-2	1.36E-3	4.75E+0	1.98E-2	1.51E-1	1.11E-3	-2.33E+0	2.59E+0
WDP	m3 depriv.	9.77E-2	3.27E-5	5.22E-5	9.78E-2	6.09E-5	2.66E-3	5.10E-6	-5.78E-2	4.27E-2
PM	disease inc.	8.55E-9	6.26E-11	9.08E-12	8.62E-9	1.17E-10	8.40E-10	7.66E-12	-4.63E-9	4.96E-9
IR	kBq U-235 eq	4.75E-3	4.65E-5	1.02E-6	4.79E-3	8.67E-5	4.90E-4	5.18E-6	-2.43E-3	2.95E-3
ETP-fw	CTUe	3.73E+0	8.65E-3	1.21E-2	3.75E+0	1.61E-2	1.82E-1	9.33E-4	-1.77E+0	2.18E+0
HTP-c	CTUh	1.26E-10	3.08E-13	6.17E-13	1.27E-10	5.73E-13	2.14E-11	2.68E-14	-5.41E-11	9.45E-11
HTP-nc	CTUh	2.25E-9	1.03E-11	1.57E-11	2.27E-9	1.92E-11	2.57E-10	5.98E-13	-6.79E-10	1.87E-9
SQP	Pt	9.23E+0	9.11E-3	2.24E-3	9.24E+0	1.70E-2	1.17E-1	2.86E-3	-9.57E+0	-1.99E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.07E+0	1.53E-4	2.40E-2	2.09E+0	2.85E-4	7.01E-3	4.34E-5	-1.53E+0	5.66E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.07E+0	1.53E-4	2.40E-2	2.09E+0	2.85E-4	7.01E-3	4.34E-5	-1.53E+0	5.66E-1
PENRE	MJ	5.08E+0	1.13E-2	1.44E-3	5.09E+0	2.11E-2	1.60E-1	1.18E-3	-2.50E+0	2.77E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.08E+0	1.13E-2	1.44E-3	5.09E+0	2.11E-2	1.60E-1	1.18E-3	-2.50E+0	2.77E+0
PET	MJ	7.15E+0	1.15E-2	2.55E-2	7.18E+0	2.13E-2	1.67E-1	1.23E-3	-4.04E+0	3.34E+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	1.86E-3	1.20E-6	1.46E-6	1.86E-3	2.25E-6	8.37E-5	1.38E-6	-1.16E-3	7.89E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.18E-6	2.72E-8	2.73E-13	2.21E-6	5.07E-8	2.69E-7	1.34E-9	-1.36E-6	1.18E-6
NHWD	kg	2.10E-2	6.60E-4	1.05E-6	2.16E-2	1.23E-3	7.63E-3	4.92E-3	-6.67E-3	2.87E-2
RWD	kg	5.02E-6	7.24E-8	1.10E-13	5.09E-6	1.35E-7	6.39E-7	7.28E-9	-2.43E-6	3.44E-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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