Environmental Profile

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

Ecochain v3.5.80

Product:	3020592 - Wafix PP Bend 88° WT 40 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	7.74E-2	5.61E-4	1.45E-4	7.81E-2	9.80E-4	8.89E-2	4.62E-4	-5.40E-2	1.14E-1
GWP-f	kg CO2 eq	1.26E-1	5.60E-4	1.46E-4	1.27E-1	9.79E-4	3.58E-2	4.62E-4	-6.09E-2	1.03E-1
GWP-b	kg CO2 eq	-4.92E-2	3.40E-7	-1.54E-6	-4.92E-2	5.95E-7	5.31E-2	4.03E-7	6.98E-3	1.09E-2
GWP-luluc	kg CO2 eq	1.31E-4	1.98E-7	1.49E-7	1.31E-4	3.47E-7	5.94E-6	7.74E-9	-8.73E-5	5.00E-5
ODP	kg CFC11 eq	7.56E-9	1.29E-10	8.26E-12	7.69E-9	2.26E-10	9.16E-10	1.16E-11	-3.48E-9	5.37E-9
AP	mol H+ eq	5.43E-4	3.19E-6	1.47E-6	5.48E-4	5.58E-6	3.78E-5	2.75E-7	-2.15E-4	3.76E-4
EP-fw	kg P eq	3.15E-6	4.61E-9	8.24E-9	3.16E-6	8.06E-9	1.75E-7	3.57E-10	-1.53E-6	1.81E-6
EP-m	kg N eq	1.08E-4	1.14E-6	1.55E-7	1.09E-4	2.00E-6	1.16E-5	1.80E-7	-4.47E-5	7.80E-5
EP-T	mol N eq	1.20E-3	1.26E-5	1.85E-6	1.21E-3	2.20E-5	1.28E-4	1.12E-6	-5.09E-4	8.52E-4
POCP	kg NMVOC eq	4.63E-4	3.60E-6	6.28E-7	4.67E-4	6.29E-6	3.97E-5	4.20E-7	-1.99E-4	3.14E-4
ADP-mm	kg Sb eq	4.71E-6	1.45E-8	1.97E-8	4.74E-6	2.53E-8	1.47E-7	2.77E-10	-4.70E-7	4.45E-6
ADP-f	MJ	3.65E+0	8.60E-3	1.36E-3	3.66E+0	1.50E-2	1.09E-1	8.44E-4	-1.69E+0	2.09E+0
WDP	m3 depriv.	7.60E-2	2.64E-5	5.22E-5	7.61E-2	4.61E-5	1.98E-3	3.86E-6	-3.85E-2	3.97E-2
PM	disease inc.	5.93E-9	5.06E-11	9.08E-12	5.99E-9	8.84E-11	6.02E-10	5.80E-12	-2.76E-9	3.92E-9
IR	kBq U-235 eq	3.66E-3	3.76E-5	1.02E-6	3.70E-3	6.57E-5	3.49E-4	3.92E-6	-1.49E-3	2.63E-3
ETP-fw	CTUe	2.31E+0	6.99E-3	1.21E-2	2.33E+0	1.22E-2	1.31E-1	7.07E-4	-1.01E+0	1.47E+0
HTP-c	CTUh	7.83E-11	2.49E-13	6.17E-13	7.92E-11	4.34E-13	1.56E-11	2.03E-14	-3.02E-11	6.50E-11
HTP-nc	CTUh	1.47E-9	8.33E-12	1.57E-11	1.49E-9	1.46E-11	1.88E-10	4.53E-13	-3.78E-10	1.32E-9
SQP	Pt	4.76E+0	7.36E-3	2.24E-3	4.77E+0	1.29E-2	8.58E-2	2.17E-3	-4.92E+0	-4.42E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.78E-1	1.23E-4	2.40E-2	1.00E+0	2.16E-4	5.17E-3	3.29E-5	-7.94E-1	2.13E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.78E-1	1.23E-4	2.40E-2	1.00E+0	2.16E-4	5.17E-3	3.29E-5	-7.94E-1	2.13E-1
PENRE	MJ	3.92E+0	9.13E-3	1.44E-3	3.93E+0	1.60E-2	1.16E-1	8.96E-4	-1.82E+0	2.24E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.92E+0	9.13E-3	1.44E-3	3.93E+0	1.60E-2	1.16E-1	8.96E-4	-1.82E+0	2.24E+0
PET	MJ	4.89E+0	9.26E-3	2.55E-2	4.93E+0	1.62E-2	1.22E-1	9.29E-4	-2.62E+0	2.45E+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	1.43E-3	9.74E-7	1.46E-6	1.44E-3	1.70E-6	6.17E-5	1.04E-6	-7.34E-4	7.65E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.49E-6	2.20E-8	2.73E-13	1.51E-6	3.84E-8	1.91E-7	1.01E-9	-8.69E-7	8.70E-7
NHWD	kg	1.48E-2	5.33E-4	1.05E-6	1.53E-2	9.32E-4	5.61E-3	3.72E-3	-3.81E-3	2.17E-2
RWD	kg	3.90E-6	5.85E-8	1.10E-13	3.96E-6	1.02E-7	4.53E-7	5.52E-9	-1.47E-6	3.05E-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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