Environmental Profile

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

Ecochain v3.5.80

Product:	3043835 - Wafix PP Bend 88° GY 32 S/S
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	7.88E-2	7.01E-4	1.45E-4	7.97E-2	8.38E-4	8.59E-2	3.94E-4	-4.88E-2	1.18E-1
GWP-f	kg CO2 eq	1.28E-1	7.00E-4	1.46E-4	1.29E-1	8.37E-4	3.36E-2	3.94E-4	-5.48E-2	1.09E-1
GWP-b	kg CO2 eq	-4.91E-2	4.25E-7	-1.54E-6	-4.91E-2	5.08E-7	5.23E-2	3.42E-7	6.13E-3	9.38E-3
GWP-luluc	kg CO2 eq	1.27E-4	2.48E-7	1.49E-7	1.28E-4	2.96E-7	5.12E-6	6.89E-9	-7.85E-5	5.47E-5
ODP	kg CFC11 eq	8.89E-9	1.61E-10	8.26E-12	9.06E-9	1.93E-10	7.98E-10	9.91E-12	-3.79E-9	6.28E-9
AP	mol H+ eq	5.83E-4	3.99E-6	1.47E-6	5.88E-4	4.77E-6	3.30E-5	2.37E-7	-1.93E-4	4.33E-4
EP-fw	kg P eq	3.34E-6	5.76E-9	8.24E-9	3.36E-6	6.89E-9	1.51E-7	3.13E-10	-1.39E-6	2.13E-6
EP-m	kg N eq	1.06E-4	1.43E-6	1.55E-7	1.08E-4	1.71E-6	1.03E-5	1.52E-7	-4.06E-5	7.91E-5
EP-T	mol N eq	1.20E-3	1.57E-5	1.85E-6	1.22E-3	1.88E-5	1.13E-4	9.61E-7	-4.62E-4	8.89E-4
POCP	kg NMVOC eq	4.65E-4	4.49E-6	6.28E-7	4.70E-4	5.37E-6	3.48E-5	3.60E-7	-1.79E-4	3.32E-4
ADP-mm	kg Sb eq	8.02E-6	1.81E-8	1.97E-8	8.06E-6	2.17E-8	1.27E-7	2.40E-10	-4.34E-7	7.78E-6
ADP-f	MJ	3.67E+0	1.07E-2	1.36E-3	3.68E+0	1.28E-2	9.46E-2	7.24E-4	-1.48E+0	2.30E+0
WDP	m3 depriv.	8.18E-2	3.30E-5	5.22E-5	8.19E-2	3.94E-5	1.71E-3	4.27E-6	-3.43E-2	4.94E-2
PM	disease inc.	6.18E-9	6.32E-11	9.08E-12	6.25E-9	7.56E-11	5.23E-10	4.98E-12	-2.50E-9	4.35E-9
IR	kBq U-235 eq	4.17E-3	4.70E-5	1.02E-6	4.22E-3	5.62E-5	3.03E-4	3.35E-6	-1.36E-3	3.22E-3
ETP-fw	CTUe	2.42E+0	8.72E-3	1.21E-2	2.44E+0	1.04E-2	1.14E-1	6.06E-4	-9.04E-1	1.66E+0
HTP-c	CTUh	8.24E-11	3.10E-13	6.17E-13	8.33E-11	3.71E-13	1.43E-11	1.81E-14	-2.89E-11	6.91E-11
HTP-nc	CTUh	1.57E-9	1.04E-11	1.57E-11	1.60E-9	1.24E-11	1.66E-10	3.93E-13	-3.39E-10	1.44E-9
SQP	Pt	4.71E+0	9.19E-3	2.24E-3	4.72E+0	1.10E-2	7.43E-2	1.85E-3	-4.70E+0	1.11E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.44E-1	1.54E-4	2.40E-2	9.68E-1	1.84E-4	4.46E-3	2.77E-5	-7.54E-1	2.19E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.44E-1	1.54E-4	2.40E-2	9.68E-1	1.84E-4	4.46E-3	2.77E-5	-7.54E-1	2.19E-1
PENRE	MJ	3.93E+0	1.14E-2	1.44E-3	3.94E+0	1.36E-2	1.01E-1	7.68E-4	-1.60E+0	2.46E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.93E+0	1.14E-2	1.44E-3	3.94E+0	1.36E-2	1.01E-1	7.68E-4	-1.60E+0	2.46E+0
PET	MJ	4.88E+0	1.16E-2	2.55E-2	4.91E+0	1.38E-2	1.05E-1	7.96E-4	-2.35E+0	2.68E+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	1.60E-3	1.22E-6	1.46E-6	1.60E-3	1.45E-6	5.36E-5	8.90E-7	-6.46E-4	1.01E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.51E-6	2.75E-8	2.73E-13	1.54E-6	3.29E-8	1.67E-7	8.78E-10	-8.43E-7	8.95E-7
NHWD	kg	1.25E-2	6.66E-4	1.05E-6	1.32E-2	7.96E-4	4.99E-3	3.18E-3	-3.60E-3	1.85E-2
RWD	kg	4.50E-6	7.31E-8	1.10E-13	4.57E-6	8.74E-8	3.94E-7	4.72E-9	-1.35E-6	3.70E-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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