Environmental Profile

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

Ecochain v3.5.80

Product:	3043815 - Wafix PP Bend 67° GY 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	4.99E-2	3.96E-4	1.45E-4	5.04E-2	6.96E-4	8.10E-2	3.27E-4	-4.25E-2	9.00E-2
GWP-f	kg CO2 eq	9.89E-2	3.95E-4	1.46E-4	9.95E-2	6.95E-4	2.93E-2	3.27E-4	-4.72E-2	8.26E-2
GWP-b	kg CO2 eq	-4.91E-2	2.40E-7	-1.54E-6	-4.91E-2	4.22E-7	5.17E-2	2.84E-7	4.78E-3	7.38E-3
GWP-luluc	kg CO2 eq	1.05E-4	1.40E-7	1.49E-7	1.06E-4	2.46E-7	4.27E-6	5.77E-9	-6.79E-5	4.22E-5
ODP	kg CFC11 eq	6.05E-9	9.11E-11	8.26E-12	6.15E-9	1.60E-10	6.72E-10	8.23E-12	-3.43E-9	3.56E-9
AP	mol H+ eq	4.46E-4	2.25E-6	1.47E-6	4.50E-4	3.96E-6	2.79E-5	1.97E-7	-1.67E-4	3.15E-4
EP-fw	kg P eq	2.61E-6	3.25E-9	8.24E-9	2.62E-6	5.72E-9	1.26E-7	2.62E-10	-1.19E-6	1.56E-6
EP-m	kg N eq	8.28E-5	8.06E-7	1.55E-7	8.38E-5	1.42E-6	8.69E-6	1.26E-7	-3.56E-5	5.84E-5
EP-T	mol N eq	9.30E-4	8.88E-6	1.85E-6	9.41E-4	1.56E-5	9.58E-5	7.98E-7	-4.06E-4	6.47E-4
POCP	kg NMVOC eq	3.63E-4	2.54E-6	6.28E-7	3.66E-4	4.46E-6	2.95E-5	2.99E-7	-1.57E-4	2.44E-4
ADP-mm	kg Sb eq	4.73E-6	1.02E-8	1.97E-8	4.76E-6	1.80E-8	1.06E-7	2.00E-10	-3.81E-7	4.50E-6
ADP-f	MJ	2.83E+0	6.07E-3	1.36E-3	2.84E+0	1.07E-2	7.93E-2	6.01E-4	-1.26E+0	1.67E+0
WDP	m3 depriv.	6.21E-2	1.86E-5	5.22E-5	6.22E-2	3.27E-5	1.42E-3	3.71E-6	-2.87E-2	3.50E-2
PM	disease inc.	4.78E-9	3.57E-11	9.08E-12	4.83E-9	6.27E-11	4.39E-10	4.13E-12	-2.20E-9	3.13E-9
IR	kBq U-235 eq	2.95E-3	2.65E-5	1.02E-6	2.98E-3	4.66E-5	2.55E-4	2.78E-6	-1.18E-3	2.10E-3
ETP-fw	CTUe	1.89E+0	4.93E-3	1.21E-2	1.91E+0	8.66E-3	9.49E-2	5.03E-4	-7.66E-1	1.25E+0
HTP-c	CTUh	6.82E-11	1.75E-13	6.17E-13	6.90E-11	3.08E-13	1.23E-11	1.52E-14	-2.70E-11	5.46E-11
HTP-nc	CTUh	1.27E-9	5.88E-12	1.57E-11	1.29E-9	1.03E-11	1.40E-10	3.27E-13	-3.31E-10	1.11E-9
SQP	Pt	4.57E+0	5.19E-3	2.24E-3	4.57E+0	9.13E-3	6.22E-2	1.54E-3	-4.45E+0	1.97E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.03E+0	8.71E-5	2.40E-2	1.05E+0	1.53E-4	3.72E-3	2.29E-5	-7.07E-1	3.47E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.03E+0	8.71E-5	2.40E-2	1.05E+0	1.53E-4	3.72E-3	2.29E-5	-7.07E-1	3.47E-1
PENRE	MJ	3.03E+0	6.44E-3	1.44E-3	3.04E+0	1.13E-2	8.44E-2	6.38E-4	-1.36E+0	1.78E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.03E+0	6.44E-3	1.44E-3	3.04E+0	1.13E-2	8.44E-2	6.38E-4	-1.36E+0	1.78E+0
PET	MJ	4.06E+0	6.53E-3	2.55E-2	4.09E+0	1.15E-2	8.81E-2	6.61E-4	-2.07E+0	2.13E+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	1.20E-3	6.87E-7	1.46E-6	1.20E-3	1.21E-6	4.50E-5	7.38E-7	-5.40E-4	7.09E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.13E-6	1.55E-8	2.73E-13	1.15E-6	2.73E-8	1.41E-7	7.30E-10	-7.46E-7	5.70E-7
NHWD	kg	9.27E-3	3.76E-4	1.05E-6	9.65E-3	6.61E-4	4.24E-3	2.64E-3	-3.31E-3	1.39E-2
RWD	kg	3.08E-6	4.13E-8	1.10E-13	3.12E-6	7.25E-8	3.31E-7	3.92E-9	-1.19E-6	2.34E-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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