Environmental Profile

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

Ecochain v3.5.80

Product:	3043836 - Wafix PP Branch 45° GY 32x32x32 S/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	1.11E-1	7.28E-4	1.45E-4	1.12E-1	1.21E-3	9.75E-2	5.68E-4	-6.59E-2	1.45E-1
GWP-f	kg CO2 eq	1.60E-1	7.27E-4	1.46E-4	1.61E-1	1.21E-3	4.44E-2	5.68E-4	-7.28E-2	1.34E-1
GWP-b	kg CO2 eq	-4.91E-2	4.42E-7	-1.54E-6	-4.91E-2	7.32E-7	5.31E-2	4.94E-7	6.94E-3	1.09E-2
GWP-luluc	kg CO2 eq	1.48E-4	2.57E-7	1.49E-7	1.49E-4	4.27E-7	7.24E-6	9.80E-9	-8.97E-5	6.68E-5
ODP	kg CFC11 eq	9.75E-9	1.68E-10	8.26E-12	9.93E-9	2.78E-10	1.09E-9	1.43E-11	-4.51E-9	6.80E-9
AP	mol H+ eq	7.10E-4	4.14E-6	1.47E-6	7.15E-4	6.87E-6	4.52E-5	3.41E-7	-2.48E-4	5.20E-4
EP-fw	kg P eq	4.00E-6	5.99E-9	8.24E-9	4.01E-6	9.92E-9	2.13E-7	4.48E-10	-1.69E-6	2.55E-6
EP-m	kg N eq	1.28E-4	1.48E-6	1.55E-7	1.29E-4	2.46E-6	1.38E-5	2.20E-7	-5.06E-5	9.52E-5
EP-T	mol N eq	1.44E-3	1.63E-5	1.85E-6	1.46E-3	2.71E-5	1.52E-4	1.38E-6	-5.73E-4	1.06E-3
POCP	kg NMVOC eq	5.67E-4	4.67E-6	6.28E-7	5.72E-4	7.74E-6	4.72E-5	5.19E-7	-2.28E-4	4.00E-4
ADP-mm	kg Sb eq	8.61E-6	1.88E-8	1.97E-8	8.65E-6	3.12E-8	1.75E-7	3.45E-10	-5.55E-7	8.30E-6
ADP-f	MJ	4.72E+0	1.12E-2	1.36E-3	4.74E+0	1.85E-2	1.32E-1	1.04E-3	-2.04E+0	2.85E+0
WDP	m3 depriv.	1.03E-1	3.43E-5	5.22E-5	1.03E-1	5.68E-5	2.42E-3	5.73E-6	-4.53E-2	6.01E-2
PM	disease inc.	7.32E-9	6.57E-11	9.08E-12	7.39E-9	1.09E-10	7.21E-10	7.16E-12	-3.03E-9	5.20E-9
IR	kBq U-235 eq	4.78E-3	4.88E-5	1.02E-6	4.83E-3	8.09E-5	4.18E-4	4.82E-6	-1.68E-3	3.65E-3
ETP-fw	CTUe	2.87E+0	9.07E-3	1.21E-2	2.89E+0	1.50E-2	1.57E-1	8.72E-4	-1.07E+0	2.00E+0
HTP-c	CTUh	1.01E-10	3.23E-13	6.17E-13	1.02E-10	5.35E-13	1.94E-11	2.58E-14	-3.25E-11	8.94E-11
HTP-nc	CTUh	2.00E-9	1.08E-11	1.57E-11	2.03E-9	1.79E-11	2.29E-10	5.63E-13	-3.94E-10	1.88E-9
SQP	Pt	4.83E+0	9.55E-3	2.24E-3	4.85E+0	1.58E-2	1.04E-1	2.67E-3	-4.93E+0	4.04E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.24E+0	1.60E-4	2.40E-2	1.26E+0	2.65E-4	6.29E-3	4.01E-5	-7.99E-1	4.71E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.24E+0	1.60E-4	2.40E-2	1.26E+0	2.65E-4	6.29E-3	4.01E-5	-7.99E-1	4.71E-1
PENRE	MJ	5.07E+0	1.19E-2	1.44E-3	5.08E+0	1.96E-2	1.41E-1	1.11E-3	-2.19E+0	3.05E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.07E+0	1.19E-2	1.44E-3	5.08E+0	1.96E-2	1.41E-1	1.11E-3	-2.19E+0	3.05E+0
PET	MJ	6.31E+0	1.20E-2	2.55E-2	6.34E+0	1.99E-2	1.47E-1	1.15E-3	-2.99E+0	3.52E+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	1.93E-3	1.26E-6	1.46E-6	1.94E-3	2.09E-6	7.49E-5	1.28E-6	-8.30E-4	1.18E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.70E-6	2.86E-8	2.73E-13	1.72E-6	4.73E-8	2.30E-7	1.26E-9	-1.01E-6	9.90E-7
NHWD	kg	1.40E-2	6.92E-4	1.05E-6	1.47E-2	1.15E-3	6.82E-3	4.58E-3	-4.16E-3	2.31E-2
RWD	kg	5.03E-6	7.59E-8	1.10E-13	5.11E-6	1.26E-7	5.40E-7	6.79E-9	-1.65E-6	4.14E-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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