Environmental Profile

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

Ecochain v3.5.80

Product:	3020661 - Wafix PP Branch 88° BK 90x90x90 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	5.41E-1	4.92E-3	1.45E-4	5.46E-1	7.95E-3	5.26E-1	3.75E-3	-4.01E-1	6.83E-1
GWP-f	kg CO2 eq	7.85E-1	4.91E-3	1.46E-4	7.90E-1	7.94E-3	2.55E-1	3.75E-3	-4.43E-1	6.14E-1
GWP-b	kg CO2 eq	-2.45E-1	2.98E-6	-1.54E-6	-2.45E-1	4.82E-6	2.71E-1	3.26E-6	4.27E-2	6.82E-2
GWP-luluc	kg CO2 eq	7.90E-4	1.74E-6	1.49E-7	7.92E-4	2.81E-6	4.70E-5	6.39E-8	-5.32E-4	3.10E-4
ODP	kg CFC11 eq	4.39E-8	1.13E-9	8.26E-12	4.50E-8	1.83E-9	6.94E-9	9.40E-11	-2.45E-8	2.94E-8
AP	mol H+ eq	3.21E-3	2.80E-5	1.47E-6	3.24E-3	4.53E-5	2.86E-4	2.24E-6	-1.52E-3	2.06E-3
EP-fw	kg P eq	1.86E-5	4.04E-8	8.24E-9	1.86E-5	6.54E-8	1.38E-6	2.93E-9	-1.02E-5	9.90E-6
EP-m	kg N eq	6.12E-4	1.00E-5	1.55E-7	6.23E-4	1.62E-5	8.66E-5	1.46E-6	-3.04E-4	4.23E-4
EP-T	mol N eq	6.70E-3	1.10E-4	1.85E-6	6.81E-3	1.78E-4	9.53E-4	9.10E-6	-3.44E-3	4.51E-3
POCP	kg NMVOC eq	2.72E-3	3.16E-5	6.28E-7	2.76E-3	5.10E-5	2.97E-4	3.42E-6	-1.38E-3	1.73E-3
ADP-mm	kg Sb eq	3.01E-5	1.27E-7	1.97E-8	3.03E-5	2.06E-7	1.13E-6	2.26E-9	-3.41E-6	2.82E-5
ADP-f	MJ	2.46E+1	7.54E-2	1.36E-3	2.46E+1	1.22E-1	8.52E-1	6.86E-3	-1.28E+1	1.28E+1
WDP	m3 depriv.	4.89E-1	2.32E-4	5.22E-5	4.90E-1	3.74E-4	1.58E-2	3.51E-5	-2.87E-1	2.19E-1
PM	disease inc.	3.48E-8	4.44E-10	9.08E-12	3.53E-8	7.17E-10	4.61E-9	4.72E-11	-1.81E-8	2.26E-8
IR	kBq U-235 eq	2.25E-2	3.30E-4	1.02E-6	2.28E-2	5.33E-4	2.68E-3	3.18E-5	-1.02E-2	1.59E-2
ETP-fw	CTUe	1.42E+1	6.13E-2	1.21E-2	1.43E+1	9.90E-2	1.01E+0	5.74E-3	-6.37E+0	9.04E+0
HTP-c	CTUh	4.37E-10	2.18E-12	6.17E-13	4.40E-10	3.52E-12	1.20E-10	1.68E-13	-1.81E-10	3.82E-10
HTP-nc	CTUh	8.44E-9	7.30E-11	1.57E-11	8.53E-9	1.18E-10	1.45E-9	3.70E-12	-2.65E-9	7.45E-9
SQP	Pt	2.44E+1	6.45E-2	2.24E-3	2.45E+1	1.04E-1	6.71E-1	1.76E-2	-2.65E+1	-1.17E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.59E+0	1.08E-3	2.40E-2	5.61E+0	1.75E-3	4.08E-2	2.65E-4	-4.35E+0	1.31E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.59E+0	1.08E-3	2.40E-2	5.61E+0	1.75E-3	4.08E-2	2.65E-4	-4.35E+0	1.31E+0
PENRE	MJ	2.64E+1	8.01E-2	1.44E-3	2.64E+1	1.29E-1	9.07E-1	7.28E-3	-1.38E+1	1.37E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.64E+1	8.01E-2	1.44E-3	2.64E+1	1.29E-1	9.07E-1	7.28E-3	-1.38E+1	1.37E+1
PET	MJ	3.19E+1	8.12E-2	2.55E-2	3.20E+1	1.31E-1	9.48E-1	7.54E-3	-1.82E+1	1.50E+1
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	8.68E-3	8.54E-6	1.46E-6	8.69E-3	1.38E-5	4.80E-4	8.45E-6	-5.20E-3	3.99E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.42E-6	1.93E-7	2.73E-13	7.62E-6	3.12E-7	1.46E-6	8.27E-9	-5.47E-6	3.93E-6
NHWD	kg	5.86E-2	4.68E-3	1.05E-6	6.33E-2	7.56E-3	4.24E-2	3.02E-2	-2.36E-2	1.20E-1
RWD	kg	2.39E-5	5.13E-7	1.10E-13	2.45E-5	8.29E-7	3.45E-6	4.48E-8	-9.84E-6	1.89E-5
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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