Environmental Profile

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

Ecochain v3.5.80

Product:	3020662 - Wafix PP Branch 88° BK 90x90x90 S/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	6.16E-1	6.85E-3	1.45E-4	6.23E-1	8.72E-3	5.48E-1	4.11E-3	-4.36E-1	7.48E-1
GWP-f	kg CO2 eq	8.61E-1	6.84E-3	1.46E-4	8.68E-1	8.71E-3	2.78E-1	4.11E-3	-4.78E-1	6.79E-1
GWP-b	kg CO2 eq	-2.45E-1	4.15E-6	-1.54E-6	-2.45E-1	5.29E-6	2.71E-1	3.57E-6	4.26E-2	6.82E-2
GWP-luluc	kg CO2 eq	8.49E-4	2.42E-6	1.49E-7	8.52E-4	3.08E-6	5.13E-5	6.99E-8	-5.39E-4	3.68E-4
ODP	kg CFC11 eq	5.21E-8	1.58E-9	8.26E-12	5.37E-8	2.01E-9	7.49E-9	1.03E-10	-2.58E-8	3.75E-8
AP	mol H+ eq	3.57E-3	3.90E-5	1.47E-6	3.61E-3	4.96E-5	3.09E-4	2.46E-6	-1.62E-3	2.35E-3
EP-fw	kg P eq	2.06E-5	5.63E-8	8.24E-9	2.07E-5	7.17E-8	1.50E-6	3.20E-9	-1.06E-5	1.17E-5
EP-m	kg N eq	6.72E-4	1.39E-5	1.55E-7	6.87E-4	1.78E-5	9.34E-5	1.60E-6	-3.21E-4	4.78E-4
EP-T	mol N eq	7.37E-3	1.54E-4	1.85E-6	7.52E-3	1.96E-4	1.03E-3	9.97E-6	-3.63E-3	5.13E-3
POCP	kg NMVOC eq	3.00E-3	4.39E-5	6.28E-7	3.05E-3	5.59E-5	3.21E-4	3.74E-6	-1.47E-3	1.96E-3
ADP-mm	kg Sb eq	4.09E-5	1.77E-7	1.97E-8	4.11E-5	2.25E-7	1.22E-6	2.48E-9	-3.64E-6	3.89E-5
ADP-f	MJ	2.69E+1	1.05E-1	1.36E-3	2.70E+1	1.34E-1	9.26E-1	7.52E-3	-1.39E+1	1.41E+1
WDP	m3 depriv.	5.38E-1	3.22E-4	5.22E-5	5.38E-1	4.10E-4	1.72E-2	3.81E-5	-3.06E-1	2.50E-1
PM	disease inc.	3.85E-8	6.18E-10	9.08E-12	3.91E-8	7.86E-10	5.00E-9	5.17E-11	-1.89E-8	2.60E-8
IR	kBq U-235 eq	2.61E-2	4.59E-4	1.02E-6	2.66E-2	5.84E-4	2.90E-3	3.49E-5	-1.07E-2	1.94E-2
ETP-fw	CTUe	1.58E+1	8.53E-2	1.21E-2	1.59E+1	1.09E-1	1.09E+0	6.29E-3	-6.51E+0	1.06E+1
HTP-c	CTUh	4.78E-10	3.03E-12	6.17E-13	4.82E-10	3.86E-12	1.30E-10	1.84E-13	-1.87E-10	4.29E-10
HTP-nc	CTUh	9.50E-9	1.02E-10	1.57E-11	9.62E-9	1.29E-10	1.57E-9	4.05E-12	-2.82E-9	8.50E-9
SQP	Pt	2.49E+1	8.98E-2	2.24E-3	2.50E+1	1.14E-1	7.30E-1	1.93E-2	-2.65E+1	-6.38E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.25E+0	1.51E-3	2.40E-2	6.28E+0	1.92E-3	4.44E-2	2.91E-4	-4.36E+0	1.96E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.25E+0	1.51E-3	2.40E-2	6.28E+0	1.92E-3	4.44E-2	2.91E-4	-4.36E+0	1.96E+0
PENRE	MJ	2.88E+1	1.11E-1	1.44E-3	2.89E+1	1.42E-1	9.87E-1	7.98E-3	-1.50E+1	1.50E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.88E+1	1.11E-1	1.44E-3	2.89E+1	1.42E-1	9.87E-1	7.98E-3	-1.50E+1	1.50E+1
PET	MJ	3.51E+1	1.13E-1	2.55E-2	3.52E+1	1.44E-1	1.03E+0	8.27E-3	-1.94E+1	1.70E+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	9.66E-3	1.19E-5	1.46E-6	9.68E-3	1.51E-5	5.23E-4	9.27E-6	-5.49E-3	4.73E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.22E-6	2.69E-7	2.73E-13	8.49E-6	3.42E-7	1.58E-6	9.06E-9	-5.73E-6	4.69E-6
NHWD	kg	6.50E-2	6.51E-3	1.05E-6	7.15E-2	8.29E-3	4.61E-2	3.31E-2	-2.45E-2	1.34E-1
RWD	kg	2.82E-5	7.14E-7	1.10E-13	2.90E-5	9.09E-7	3.74E-6	4.91E-8	-1.03E-5	2.33E-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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