Environmental Profile

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

Ecochain v3.5.80

Product:	3020629 - Wafix PP Branch 45° WT 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	1.12E-1	7.47E-4	1.45E-4	1.13E-1	1.18E-3	9.92E-2	5.56E-4	-6.63E-2	1.48E-1
GWP-f	kg CO2 eq	1.61E-1	7.47E-4	1.46E-4	1.62E-1	1.18E-3	4.61E-2	5.56E-4	-7.32E-2	1.37E-1
GWP-b	kg CO2 eq	-4.92E-2	4.53E-7	-1.54E-6	-4.92E-2	7.16E-7	5.31E-2	4.83E-7	6.95E-3	1.08E-2
GWP-luluc	kg CO2 eq	1.51E-4	2.64E-7	1.49E-7	1.51E-4	4.17E-7	7.11E-6	9.60E-9	-8.95E-5	6.91E-5
ODP	kg CFC11 eq	9.83E-9	1.72E-10	8.26E-12	1.00E-8	2.72E-10	1.08E-9	1.40E-11	-4.63E-9	6.74E-9
AP	mol H+ eq	7.20E-4	4.25E-6	1.47E-6	7.25E-4	6.72E-6	4.48E-5	3.33E-7	-2.45E-4	5.32E-4
EP-fw	kg P eq	4.08E-6	6.15E-9	8.24E-9	4.10E-6	9.70E-9	2.10E-7	4.38E-10	-1.68E-6	2.64E-6
EP-m	kg N eq	1.29E-4	1.52E-6	1.55E-7	1.31E-4	2.40E-6	1.38E-5	2.16E-7	-5.04E-5	9.70E-5
EP-T	mol N eq	1.46E-3	1.68E-5	1.85E-6	1.48E-3	2.65E-5	1.52E-4	1.35E-6	-5.71E-4	1.08E-3
POCP	kg NMVOC eq	5.74E-4	4.80E-6	6.28E-7	5.80E-4	7.57E-6	4.69E-5	5.07E-7	-2.26E-4	4.08E-4
ADP-mm	kg Sb eq	8.67E-6	1.93E-8	1.97E-8	8.70E-6	3.05E-8	1.73E-7	3.37E-10	-5.48E-7	8.36E-6
ADP-f	MJ	4.74E+0	1.15E-2	1.36E-3	4.75E+0	1.81E-2	1.30E-1	1.02E-3	-2.03E+0	2.87E+0
WDP	m3 depriv.	1.04E-1	3.52E-5	5.22E-5	1.04E-1	5.56E-5	2.38E-3	5.62E-6	-4.48E-2	6.15E-2
PM	disease inc.	7.39E-9	6.74E-11	9.08E-12	7.46E-9	1.06E-10	7.13E-10	7.01E-12	-3.00E-9	5.29E-9
IR	kBq U-235 eq	4.83E-3	5.01E-5	1.02E-6	4.88E-3	7.91E-5	4.12E-4	4.72E-6	-1.67E-3	3.71E-3
ETP-fw	CTUe	2.93E+0	9.31E-3	1.21E-2	2.95E+0	1.47E-2	1.55E-1	8.53E-4	-1.07E+0	2.06E+0
HTP-c	CTUh	1.03E-10	3.31E-13	6.17E-13	1.04E-10	5.23E-13	1.93E-11	2.53E-14	-3.24E-11	9.14E-11
HTP-nc	CTUh	2.05E-9	1.11E-11	1.57E-11	2.07E-9	1.75E-11	2.28E-10	5.51E-13	-3.90E-10	1.93E-9
SQP	Pt	4.85E+0	9.81E-3	2.24E-3	4.86E+0	1.55E-2	1.02E-1	2.61E-3	-4.93E+0	5.47E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.30E+0	1.64E-4	2.40E-2	1.32E+0	2.60E-4	6.18E-3	3.92E-5	-7.99E-1	5.29E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.30E+0	1.64E-4	2.40E-2	1.32E+0	2.60E-4	6.18E-3	3.92E-5	-7.99E-1	5.29E-1
PENRE	MJ	5.08E+0	1.22E-2	1.44E-3	5.09E+0	1.92E-2	1.38E-1	1.08E-3	-2.18E+0	3.07E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.08E+0	1.22E-2	1.44E-3	5.09E+0	1.92E-2	1.38E-1	1.08E-3	-2.18E+0	3.07E+0
PET	MJ	6.38E+0	1.23E-2	2.55E-2	6.42E+0	1.95E-2	1.45E-1	1.12E-3	-2.98E+0	3.60E+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	1.97E-3	1.30E-6	1.46E-6	1.97E-3	2.05E-6	7.40E-5	1.25E-6	-8.22E-4	1.23E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.70E-6	2.93E-8	2.73E-13	1.73E-6	4.63E-8	2.27E-7	1.23E-9	-1.04E-6	9.72E-7
NHWD	kg	1.42E-2	7.10E-4	1.05E-6	1.49E-2	1.12E-3	6.83E-3	4.48E-3	-4.14E-3	2.32E-2
RWD	kg	5.07E-6	7.80E-8	1.10E-13	5.15E-6	1.23E-7	5.33E-7	6.65E-9	-1.64E-6	4.17E-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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