Environmental Profile

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

Ecochain v3.5.80

Product:	3043882 - Wafix PP Branch 88° GY 40x40x40 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	8.41E-2	1.03E-3	1.45E-4	8.52E-2	1.56E-3	1.61E-1	7.37E-4	-8.62E-2	1.62E-1
GWP-f	kg CO2 eq	1.82E-1	1.03E-3	1.46E-4	1.83E-1	1.56E-3	5.56E-2	7.37E-4	-9.91E-2	1.42E-1
GWP-b	kg CO2 eq	-9.82E-2	6.25E-7	-1.54E-6	-9.82E-2	9.49E-7	1.05E-1	6.41E-7	1.30E-2	2.02E-2
GWP-luluc	kg CO2 eq	2.19E-4	3.64E-7	1.49E-7	2.19E-4	5.53E-7	9.55E-6	1.26E-8	-1.63E-4	6.63E-5
ODP	kg CFC11 eq	1.09E-8	2.37E-10	8.26E-12	1.11E-8	3.60E-10	1.50E-9	1.85E-11	-6.39E-9	6.61E-9
AP	mol H+ eq	7.91E-4	5.86E-6	1.47E-6	7.98E-4	8.91E-6	6.15E-5	4.41E-7	-3.68E-4	5.01E-4
EP-fw	kg P eq	4.79E-6	8.47E-9	8.24E-9	4.81E-6	1.29E-8	2.82E-7	5.78E-10	-2.75E-6	2.36E-6
EP-m	kg N eq	1.54E-4	2.10E-6	1.55E-7	1.56E-4	3.19E-6	1.91E-5	2.86E-7	-7.78E-5	1.01E-4
EP-T	mol N eq	1.70E-3	2.31E-5	1.85E-6	1.72E-3	3.51E-5	2.10E-4	1.79E-6	-8.87E-4	1.08E-3
POCP	kg NMVOC eq	6.65E-4	6.61E-6	6.28E-7	6.72E-4	1.00E-5	6.49E-5	6.72E-7	-3.40E-4	4.08E-4
ADP-mm	kg Sb eq	7.75E-6	2.66E-8	1.97E-8	7.79E-6	4.04E-8	2.39E-7	4.46E-10	-8.22E-7	7.25E-6
ADP-f	MJ	5.35E+0	1.58E-2	1.36E-3	5.37E+0	2.40E-2	1.77E-1	1.35E-3	-2.73E+0	2.84E+0
WDP	m3 depriv.	1.12E-1	4.85E-5	5.22E-5	1.12E-1	7.37E-5	3.18E-3	7.14E-6	-6.57E-2	4.94E-2
PM	disease inc.	8.82E-9	9.29E-11	9.08E-12	8.93E-9	1.41E-10	9.78E-10	9.28E-12	-4.92E-9	5.14E-9
IR	kBq U-235 eq	5.38E-3	6.91E-5	1.02E-6	5.45E-3	1.05E-4	5.70E-4	6.26E-6	-2.66E-3	3.48E-3
ETP-fw	CTUe	3.76E+0	1.28E-2	1.21E-2	3.78E+0	1.95E-2	2.12E-1	1.13E-3	-1.82E+0	2.19E+0
HTP-c	CTUh	1.19E-10	4.57E-13	6.17E-13	1.20E-10	6.94E-13	2.58E-11	3.32E-14	-5.67E-11	9.02E-11
HTP-nc	CTUh	2.16E-9	1.53E-11	1.57E-11	2.19E-9	2.32E-11	3.04E-10	7.29E-13	-8.04E-10	1.71E-9
SQP	Pt	9.18E+0	1.35E-2	2.24E-3	9.20E+0	2.05E-2	1.38E-1	3.46E-3	-9.59E+0	-2.27E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.91E+0	2.27E-4	2.40E-2	1.94E+0	3.44E-4	8.31E-3	5.21E-5	-1.54E+0	4.05E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.91E+0	2.27E-4	2.40E-2	1.94E+0	3.44E-4	8.31E-3	5.21E-5	-1.54E+0	4.05E-1
PENRE	MJ	5.74E+0	1.68E-2	1.44E-3	5.76E+0	2.55E-2	1.89E-1	1.43E-3	-2.94E+0	3.03E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.74E+0	1.68E-2	1.44E-3	5.76E+0	2.55E-2	1.89E-1	1.43E-3	-2.94E+0	3.03E+0
PET	MJ	7.65E+0	1.70E-2	2.55E-2	7.69E+0	2.58E-2	1.97E-1	1.48E-3	-4.48E+0	3.44E+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	2.10E-3	1.79E-6	1.46E-6	2.11E-3	2.72E-6	9.93E-5	1.66E-6	-1.27E-3	9.39E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.05E-6	4.04E-8	2.73E-13	2.09E-6	6.14E-8	3.13E-7	1.63E-9	-1.45E-6	1.02E-6
NHWD	kg	1.62E-2	9.79E-4	1.05E-6	1.71E-2	1.49E-3	9.02E-3	5.95E-3	-7.02E-3	2.66E-2
RWD	kg	5.66E-6	1.07E-7	1.10E-13	5.76E-6	1.63E-7	7.40E-7	8.81E-9	-2.64E-6	4.04E-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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