Environmental Profile

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

Ecochain v3.5.80

Product:	3043881 - Wafix PP Branch 45° 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	9.86E-2	1.04E-3	1.45E-4	9.98E-2	1.75E-3	1.66E-1	8.24E-4	-9.50E-2	1.74E-1
GWP-f	kg CO2 eq	1.97E-1	1.04E-3	1.46E-4	1.98E-1	1.75E-3	6.10E-2	8.24E-4	-1.08E-1	1.53E-1
GWP-b	kg CO2 eq	-9.81E-2	6.29E-7	-1.54E-6	-9.81E-2	1.06E-6	1.05E-1	7.17E-7	1.30E-2	2.03E-2
GWP-luluc	kg CO2 eq	2.22E-4	3.67E-7	1.49E-7	2.23E-4	6.19E-7	1.06E-5	1.41E-8	-1.65E-4	6.94E-5
ODP	kg CFC11 eq	1.12E-8	2.39E-10	8.26E-12	1.14E-8	4.03E-10	1.64E-9	2.07E-11	-6.71E-9	6.76E-9
AP	mol H+ eq	8.39E-4	5.90E-6	1.47E-6	8.46E-4	9.96E-6	6.73E-5	4.93E-7	-3.93E-4	5.31E-4
EP-fw	kg P eq	5.00E-6	8.52E-9	8.24E-9	5.02E-6	1.44E-8	3.13E-7	6.45E-10	-2.85E-6	2.49E-6
EP-m	kg N eq	1.62E-4	2.11E-6	1.55E-7	1.64E-4	3.56E-6	2.07E-5	3.20E-7	-8.22E-5	1.07E-4
EP-T	mol N eq	1.79E-3	2.33E-5	1.85E-6	1.81E-3	3.93E-5	2.28E-4	2.00E-6	-9.37E-4	1.15E-3
POCP	kg NMVOC eq	7.09E-4	6.65E-6	6.28E-7	7.16E-4	1.12E-5	7.07E-5	7.51E-7	-3.63E-4	4.36E-4
ADP-mm	kg Sb eq	7.87E-6	2.68E-8	1.97E-8	7.91E-6	4.52E-8	2.62E-7	4.98E-10	-8.79E-7	7.34E-6
ADP-f	MJ	5.86E+0	1.59E-2	1.36E-3	5.88E+0	2.68E-2	1.95E-1	1.51E-3	-3.00E+0	3.10E+0
WDP	m3 depriv.	1.21E-1	4.88E-5	5.22E-5	1.22E-1	8.23E-5	3.53E-3	7.86E-6	-7.04E-2	5.48E-2
PM	disease inc.	9.28E-9	9.35E-11	9.08E-12	9.38E-9	1.58E-10	1.07E-9	1.04E-11	-5.13E-9	5.49E-9
IR	kBq U-235 eq	5.65E-3	6.95E-5	1.02E-6	5.72E-3	1.17E-4	6.25E-4	6.99E-6	-2.78E-3	3.69E-3
ETP-fw	CTUe	3.81E+0	1.29E-2	1.21E-2	3.84E+0	2.18E-2	2.33E-1	1.26E-3	-1.87E+0	2.23E+0
HTP-c	CTUh	1.25E-10	4.59E-13	6.17E-13	1.26E-10	7.75E-13	2.82E-11	3.71E-14	-5.81E-11	9.71E-11
HTP-nc	CTUh	2.26E-9	1.54E-11	1.57E-11	2.29E-9	2.60E-11	3.35E-10	8.14E-13	-7.95E-10	1.85E-9
SQP	Pt	9.19E+0	1.36E-2	2.24E-3	9.21E+0	2.30E-2	1.53E-1	3.87E-3	-9.59E+0	-2.05E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.84E+0	2.28E-4	2.40E-2	1.87E+0	3.85E-4	9.22E-3	5.83E-5	-1.54E+0	3.33E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.84E+0	2.28E-4	2.40E-2	1.87E+0	3.85E-4	9.22E-3	5.83E-5	-1.54E+0	3.33E-1
PENRE	MJ	6.29E+0	1.69E-2	1.44E-3	6.31E+0	2.85E-2	2.08E-1	1.60E-3	-3.23E+0	3.31E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.29E+0	1.69E-2	1.44E-3	6.31E+0	2.85E-2	2.08E-1	1.60E-3	-3.23E+0	3.31E+0
PET	MJ	8.13E+0	1.71E-2	2.55E-2	8.17E+0	2.89E-2	2.17E-1	1.66E-3	-4.77E+0	3.65E+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	2.25E-3	1.80E-6	1.46E-6	2.25E-3	3.04E-6	1.10E-4	1.86E-6	-1.34E-3	1.02E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.15E-6	4.07E-8	2.73E-13	2.19E-6	6.86E-8	3.42E-7	1.82E-9	-1.55E-6	1.05E-6
NHWD	kg	1.69E-2	9.85E-4	1.05E-6	1.79E-2	1.66E-3	9.91E-3	6.65E-3	-7.25E-3	2.89E-2
RWD	kg	5.90E-6	1.08E-7	1.10E-13	6.01E-6	1.82E-7	8.10E-7	9.85E-9	-2.75E-6	4.26E-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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