Environmental Profile

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

Ecochain v3.5.80

Product:	3020690 - Wafix PP Exc. Reducer BK 110x90
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	2.92E-1	2.51E-3	1.45E-4	2.95E-1	4.45E-3	3.03E-1	2.10E-3	-2.25E-1	3.80E-1
GWP-f	kg CO2 eq	4.39E-1	2.51E-3	1.46E-4	4.42E-1	4.45E-3	1.41E-1	2.10E-3	-2.48E-1	3.42E-1
GWP-b	kg CO2 eq	-1.47E-1	1.52E-6	-1.54E-6	-1.47E-1	2.70E-6	1.62E-1	1.83E-6	2.34E-2	3.76E-2
GWP-luluc	kg CO2 eq	4.45E-4	8.88E-7	1.49E-7	4.46E-4	1.57E-6	2.63E-5	3.57E-8	-3.01E-4	1.74E-4
ODP	kg CFC11 eq	2.42E-8	5.78E-10	8.26E-12	2.48E-8	1.03E-9	3.88E-9	5.26E-11	-1.36E-8	1.61E-8
AP	mol H+ eq	1.81E-3	1.43E-5	1.47E-6	1.82E-3	2.53E-5	1.60E-4	1.25E-6	-8.56E-4	1.15E-3
EP-fw	kg P eq	1.04E-5	2.06E-8	8.24E-9	1.04E-5	3.66E-8	7.72E-7	1.64E-9	-5.72E-6	5.53E-6
EP-m	kg N eq	3.42E-4	5.11E-6	1.55E-7	3.48E-4	9.07E-6	4.84E-5	8.16E-7	-1.72E-4	2.34E-4
EP-T	mol N eq	3.72E-3	5.63E-5	1.85E-6	3.78E-3	9.99E-5	5.33E-4	5.09E-6	-1.94E-3	2.47E-3
POCP	kg NMVOC eq	1.52E-3	1.61E-5	6.28E-7	1.54E-3	2.86E-5	1.66E-4	1.91E-6	-7.78E-4	9.60E-4
ADP-mm	kg Sb eq	1.51E-5	6.49E-8	1.97E-8	1.52E-5	1.15E-7	6.30E-7	1.26E-9	-1.93E-6	1.40E-5
ADP-f	MJ	1.37E+1	3.85E-2	1.36E-3	1.38E+1	6.83E-2	4.77E-1	3.84E-3	-7.18E+0	7.15E+0
WDP	m3 depriv.	2.72E-1	1.18E-4	5.22E-5	2.73E-1	2.10E-4	8.83E-3	1.95E-5	-1.60E-1	1.22E-1
PM	disease inc.	1.95E-8	2.26E-10	9.08E-12	1.97E-8	4.02E-10	2.58E-9	2.64E-11	-1.02E-8	1.25E-8
IR	kBq U-235 eq	1.24E-2	1.68E-4	1.02E-6	1.25E-2	2.98E-4	1.50E-3	1.78E-5	-5.73E-3	8.61E-3
ETP-fw	CTUe	8.09E+0	3.13E-2	1.21E-2	8.13E+0	5.54E-2	5.62E-1	3.21E-3	-3.57E+0	5.18E+0
HTP-c	CTUh	2.53E-10	1.11E-12	6.17E-13	2.55E-10	1.97E-12	6.68E-11	9.39E-14	-1.05E-10	2.19E-10
HTP-nc	CTUh	5.02E-9	3.73E-11	1.57E-11	5.07E-9	6.61E-11	8.08E-10	2.07E-12	-1.56E-9	4.39E-9
SQP	Pt	1.45E+1	3.29E-2	2.24E-3	1.45E+1	5.84E-2	3.75E-1	9.85E-3	-1.55E+1	-5.20E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.96E+0	5.52E-4	2.40E-2	3.99E+0	9.80E-4	2.28E-2	1.49E-4	-2.53E+0	1.48E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.96E+0	5.52E-4	2.40E-2	3.99E+0	9.80E-4	2.28E-2	1.49E-4	-2.53E+0	1.48E+0
PENRE	MJ	1.47E+1	4.09E-2	1.44E-3	1.48E+1	7.25E-2	5.08E-1	4.07E-3	-7.73E+0	7.63E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.47E+1	4.09E-2	1.44E-3	1.48E+1	7.25E-2	5.08E-1	4.07E-3	-7.73E+0	7.63E+0
PET	MJ	1.87E+1	4.14E-2	2.55E-2	1.88E+1	7.35E-2	5.31E-1	4.22E-3	-1.03E+1	9.12E+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	4.80E-3	4.36E-6	1.46E-6	4.81E-3	7.73E-6	2.69E-4	4.73E-6	-2.91E-3	2.18E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.90E-6	9.85E-8	2.73E-13	4.00E-6	1.75E-7	8.19E-7	4.63E-9	-3.05E-6	1.94E-6
NHWD	kg	3.04E-2	2.39E-3	1.05E-6	3.28E-2	4.23E-3	2.37E-2	1.69E-2	-1.36E-2	6.40E-2
RWD	kg	1.31E-5	2.62E-7	1.10E-13	1.34E-5	4.64E-7	1.93E-6	2.51E-8	-5.56E-6	1.02E-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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