Environmental Profile

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

Ecochain v3.5.80

Product:	3024104 - KANION PVC Pipe Bracket 90 Graphite
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Kanion gutters mean original design, elegance and aesthetics. They are designed to drain 100% of rainwater. It is safe to say that they are intended for the most demanding users.

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	2.20E-1	2.60E-3	1.45E-4	2.23E-1	2.05E-3	1.21E-1	6.67E-4	-1.09E-1	2.38E-1
GWP-f	kg CO2 eq	2.52E-1	2.59E-3	1.46E-4	2.54E-1	2.05E-3	8.25E-2	6.67E-4	-1.20E-1	2.20E-1
GWP-b	kg CO2 eq	-3.15E-2	1.57E-6	-1.54E-6	-3.15E-2	1.24E-6	3.83E-2	8.14E-7	1.09E-2	1.76E-2
GWP-luluc	kg CO2 eq	2.79E-4	9.18E-7	1.49E-7	2.80E-4	7.25E-7	2.57E-5	1.83E-8	-1.48E-4	1.58E-4
ODP	kg CFC11 eq	8.84E-8	5.98E-10	8.26E-12	8.90E-8	4.72E-10	7.09E-9	2.43E-11	-4.71E-8	4.94E-8
AP	mol H+ eq	1.27E-3	1.48E-5	1.47E-6	1.29E-3	1.17E-5	1.29E-4	5.97E-7	-4.55E-4	9.77E-4
EP-fw	kg P eq	1.12E-5	2.13E-8	8.24E-9	1.12E-5	1.69E-8	8.65E-7	8.10E-10	-4.72E-6	7.41E-6
EP-m	kg N eq	2.29E-4	5.28E-6	1.55E-7	2.35E-4	4.18E-6	3.29E-5	3.59E-7	-8.66E-5	1.86E-4
EP-T	mol N eq	2.50E-3	5.82E-5	1.85E-6	2.56E-3	4.60E-5	3.63E-4	2.37E-6	-9.49E-4	2.03E-3
POCP	kg NMVOC eq	8.32E-4	1.66E-5	6.28E-7	8.50E-4	1.32E-5	1.08E-4	8.19E-7	-3.37E-4	6.34E-4
ADP-mm	kg Sb eq	1.99E-4	6.71E-8	1.97E-8	1.99E-4	5.30E-8	5.03E-7	6.09E-10	-1.96E-6	1.98E-4
ADP-f	MJ	5.45E+0	3.98E-2	1.36E-3	5.49E+0	3.15E-2	3.39E-1	1.78E-3	-2.61E+0	3.25E+0
WDP	m3 depriv.	2.90E-1	1.22E-4	5.22E-5	2.90E-1	9.65E-5	1.27E-2	1.57E-5	-1.47E-1	1.56E-1
PM	disease inc.	1.09E-8	2.34E-10	9.08E-12	1.11E-8	1.85E-10	1.62E-9	1.23E-11	-4.25E-9	8.70E-9
IR	kBq U-235 eq	1.19E-2	1.74E-4	1.02E-6	1.21E-2	1.37E-4	1.21E-3	8.12E-6	-4.95E-3	8.46E-3
ETP-fw	CTUe	7.70E+0	3.23E-2	1.21E-2	7.75E+0	2.55E-2	2.46E+0	2.68E-2	-2.48E+0	7.78E+0
HTP-c	CTUh	6.74E-10	1.15E-12	6.17E-13	6.75E-10	9.09E-13	4.30E-11	5.21E-14	-6.70E-11	6.52E-10
HTP-nc	CTUh	6.93E-9	3.85E-11	1.57E-11	6.99E-9	3.05E-11	9.14E-10	5.19E-12	-5.23E-10	7.41E-9
SQP	Pt	4.13E+0	3.41E-2	2.24E-3	4.17E+0	2.69E-2	2.14E-1	4.55E-3	-4.64E+0	-2.24E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.17E+0	5.71E-4	2.40E-2	1.20E+0	4.51E-4	2.38E-2	6.43E-5	-8.14E-1	4.09E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.17E+0	5.71E-4	2.40E-2	1.20E+0	4.51E-4	2.38E-2	6.43E-5	-8.14E-1	4.09E-1
PENRE	MJ	5.84E+0	4.23E-2	1.44E-3	5.89E+0	3.34E-2	3.60E-1	1.89E-3	-2.81E+0	3.47E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.84E+0	4.23E-2	1.44E-3	5.89E+0	3.34E-2	3.60E-1	1.89E-3	-2.81E+0	3.47E+0
PET	MJ	7.02E+0	4.28E-2	2.55E-2	7.08E+0	3.38E-2	3.84E-1	1.96E-3	-3.63E+0	3.88E+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	3.90E-3	4.50E-6	1.46E-6	3.91E-3	3.56E-6	3.53E-4	2.16E-6	-1.83E-3	2.43E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.91E-5	1.02E-7	2.73E-13	2.92E-5	8.04E-8	5.75E-7	2.21E-9	-3.25E-6	2.66E-5
NHWD	kg	5.72E-2	2.47E-3	1.05E-6	5.96E-2	1.95E-3	1.37E-2	7.79E-3	-9.76E-3	7.33E-2
RWD	kg	1.06E-5	2.71E-7	1.10E-13	1.09E-5	2.14E-7	1.32E-6	1.15E-8	-4.58E-6	7.83E-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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