Environmental Profile

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

Ecochain v3.5.80

Product:	3023396 - KANION PVC Pipe connector 110 Graph. S/S
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	4.41E-1	7.59E-3	1.45E-4	4.49E-1	5.19E-3	3.55E-1	1.67E-3	-2.42E-1	5.68E-1
GWP-f	kg CO2 eq	5.69E-1	7.58E-3	1.46E-4	5.77E-1	5.18E-3	1.94E-1	1.67E-3	-3.03E-1	4.75E-1
GWP-b	kg CO2 eq	-1.29E-1	4.61E-6	-1.54E-6	-1.29E-1	3.15E-6	1.60E-1	2.07E-6	6.10E-2	9.28E-2
GWP-luluc	kg CO2 eq	8.25E-4	2.68E-6	1.49E-7	8.28E-4	1.83E-6	6.64E-5	4.48E-8	-6.40E-4	2.56E-4
ODP	kg CFC11 eq	2.28E-7	1.75E-9	8.26E-12	2.30E-7	1.19E-9	1.86E-8	6.15E-11	-1.21E-7	1.29E-7
AP	mol H+ eq	2.79E-3	4.32E-5	1.47E-6	2.84E-3	2.95E-5	3.39E-4	1.50E-6	-1.29E-3	1.92E-3
EP-fw	kg P eq	2.64E-5	6.24E-8	8.24E-9	2.64E-5	4.26E-8	2.23E-6	2.01E-9	-1.46E-5	1.41E-5
EP-m	kg N eq	5.42E-4	1.55E-5	1.55E-7	5.57E-4	1.06E-5	8.78E-5	9.15E-7	-2.54E-4	4.02E-4
EP-T	mol N eq	5.78E-3	1.70E-4	1.85E-6	5.95E-3	1.16E-4	9.67E-4	5.98E-6	-2.81E-3	4.23E-3
POCP	kg NMVOC eq	1.88E-3	4.87E-5	6.28E-7	1.92E-3	3.33E-5	2.88E-4	2.06E-6	-9.14E-4	1.33E-3
ADP-mm	kg Sb eq	3.99E-4	1.96E-7	1.97E-8	4.00E-4	1.34E-7	1.33E-6	1.52E-9	-5.27E-6	3.96E-4
ADP-f	MJ	1.29E+1	1.16E-1	1.36E-3	1.31E+1	7.95E-2	8.84E-1	4.50E-3	-6.74E+0	7.28E+0
WDP	m3 depriv.	7.26E-1	3.57E-4	5.22E-5	7.26E-1	2.44E-4	3.28E-2	3.48E-5	-4.17E-1	3.42E-1
PM	disease inc.	2.38E-8	6.85E-10	9.08E-12	2.45E-8	4.68E-10	4.26E-9	3.10E-11	-1.39E-8	1.53E-8
IR	kBq U-235 eq	2.78E-2	5.09E-4	1.02E-6	2.84E-2	3.48E-4	3.17E-3	2.06E-5	-1.51E-2	1.68E-2
ETP-fw	CTUe	2.01E+1	9.45E-2	1.21E-2	2.02E+1	6.46E-2	6.41E+0	6.94E-2	-8.49E+0	1.83E+1
HTP-c	CTUh	5.49E-10	3.36E-12	6.17E-13	5.53E-10	2.30E-12	1.09E-10	1.28E-13	-2.04E-10	4.61E-10
HTP-nc	CTUh	1.44E-8	1.13E-10	1.57E-11	1.45E-8	7.70E-11	2.35E-9	1.34E-11	-4.91E-9	1.21E-8
SQP	Pt	1.54E+1	9.96E-2	2.24E-3	1.55E+1	6.80E-2	5.46E-1	1.15E-2	-2.11E+1	-5.02E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.86E+0	1.67E-3	2.40E-2	3.88E+0	1.14E-3	6.12E-2	1.65E-4	-3.66E+0	2.81E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.86E+0	1.67E-3	2.40E-2	3.88E+0	1.14E-3	6.12E-2	1.65E-4	-3.66E+0	2.81E-1
PENRE	MJ	1.39E+1	1.24E-1	1.44E-3	1.40E+1	8.44E-2	9.40E-1	4.77E-3	-7.26E+0	7.77E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.39E+1	1.24E-1	1.44E-3	1.40E+1	8.44E-2	9.40E-1	4.77E-3	-7.26E+0	7.77E+0
PET	MJ	1.77E+1	1.25E-1	2.55E-2	1.79E+1	8.56E-2	1.00E+0	4.94E-3	-1.09E+1	8.06E+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	9.38E-3	1.32E-5	1.46E-6	9.40E-3	9.00E-6	9.15E-4	5.48E-6	-5.88E-3	4.45E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.99E-5	2.98E-7	2.73E-13	6.02E-5	2.03E-7	1.51E-6	5.52E-9	-6.99E-6	5.49E-5
NHWD	kg	6.65E-2	7.22E-3	1.05E-6	7.37E-2	4.93E-3	3.47E-2	1.97E-2	-2.77E-2	1.05E-1
RWD	kg	2.51E-5	7.92E-7	1.10E-13	2.59E-5	5.41E-7	3.51E-6	2.92E-8	-1.39E-5	1.60E-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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