# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3043678 - Angle ext. KANION PVC 100x to order BN |
| 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.

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|---|---|
| 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 | 1.45E+0 | 1.38E-2 | 1.88E-3 | 1.47E+0 | 7.03E-3 | 1.12E+0 | 2.31E-3 | -4.61E-2 | 2.55E+0 |
| GWP-f | kg CO2 eq | 1.69E+0 | 1.38E-2 | 1.90E-3 | 1.71E+0 | 7.03E-3 | 4.57E-1 | 2.31E-3 | -9.50E-1 | 1.22E+0 |
| GWP-b | kg CO2 eq | -2.48E-1 | 8.36E-6 | -2.00E-5 | -2.48E-1 | 4.27E-6 | 6.65E-1 | 2.84E-6 | 9.10E-1 | 1.33E+0 |
| GWP-luluc | kg CO2 eq | 5.85E-3 | 4.87E-6 | 1.94E-6 | 5.85E-3 | 2.49E-6 | 1.12E-4 | 6.17E-8 | -6.67E-3 | -7.03E-4 |
| ODP | kg CFC11 eq | 4.22E-7 | 3.17E-9 | 1.07E-10 | 4.25E-7 | 1.62E-9 | 3.68E-8 | 8.43E-11 | -2.32E-7 | 2.31E-7 |
| AP | mol H+ eq | 8.42E-3 | 7.84E-5 | 1.91E-5 | 8.52E-3 | 4.00E-5 | 8.76E-4 | 2.06E-6 | -5.77E-3 | 3.67E-3 |
| EP-fw | kg P eq | 9.01E-5 | 1.13E-7 | 1.07E-7 | 9.04E-5 | 5.78E-8 | 3.89E-6 | 2.76E-9 | -9.21E-5 | 2.24E-6 |
| EP-m | kg N eq | 2.25E-3 | 2.81E-5 | 2.01E-6 | 2.28E-3 | 1.43E-5 | 2.76E-4 | 1.31E-6 | -1.28E-3 | 1.29E-3 |
| EP-T | mol N eq | 2.24E-2 | 3.09E-4 | 2.41E-5 | 2.27E-2 | 1.58E-4 | 3.02E-3 | 8.20E-6 | -1.47E-2 | 1.13E-2 |
| POCP | kg NMVOC eq | 6.05E-3 | 8.84E-5 | 8.14E-6 | 6.14E-3 | 4.51E-5 | 9.03E-4 | 2.83E-6 | -3.96E-3 | 3.13E-3 |
| ADP-mm | kg Sb eq | 2.05E-4 | 3.56E-7 | 2.55E-7 | 2.05E-4 | 1.82E-7 | 3.53E-6 | 2.09E-9 | -1.30E-5 | 1.96E-4 |
| ADP-f | MJ | 3.32E+1 | 2.11E-1 | 1.76E-2 | 3.35E+1 | 1.08E-1 | 1.97E+0 | 6.17E-3 | -1.82E+1 | 1.74E+1 |
| WDP | m3 depriv. | 1.35E+0 | 6.48E-4 | 6.77E-4 | 1.36E+0 | 3.31E-4 | 5.05E-2 | 4.82E-5 | -1.76E+0 | -3.49E-1 |
| PM | disease inc. | 1.03E-7 | 1.24E-9 | 1.18E-10 | 1.04E-7 | 6.34E-10 | 1.20E-8 | 4.24E-11 | -9.86E-8 | 1.79E-8 |
| IR | kBq U-235 eq | 7.87E-2 | 9.23E-4 | 1.32E-5 | 7.96E-2 | 4.71E-4 | 7.70E-3 | 2.82E-5 | -7.23E-2 | 1.55E-2 |
| ETP-fw | CTUe | 1.29E+2 | 1.72E-1 | 1.57E-1 | 1.29E+2 | 8.76E-2 | 1.01E+1 | 9.30E-2 | -7.46E+1 | 6.49E+1 |
| HTP-c | CTUh | 1.19E-9 | 6.11E-12 | 8.00E-12 | 1.21E-9 | 3.12E-12 | 2.77E-10 | 1.76E-13 | -7.91E-10 | 6.96E-10 |
| HTP-nc | CTUh | 3.00E-8 | 2.05E-10 | 2.03E-10 | 3.04E-8 | 1.04E-10 | 4.60E-9 | 1.80E-11 | -2.27E-8 | 1.25E-8 |
| SQP | Pt | 6.17E+1 | 1.81E-1 | 2.91E-2 | 6.19E+1 | 9.23E-2 | 1.18E+0 | 1.58E-2 | -1.83E+2 | -1.20E+2 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 1.18E+1 | 3.03E-3 | 3.12E-1 | 1.21E+1 | 1.55E-3 | 1.06E-1 | 2.27E-4 | -3.28E+1 | -2.06E+1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.18E+1 | 3.03E-3 | 3.12E-1 | 1.21E+1 | 1.55E-3 | 1.06E-1 | 2.27E-4 | -3.28E+1 | -2.06E+1 |
| PENRE | MJ | 3.57E+1 | 2.24E-1 | 1.87E-2 | 3.60E+1 | 1.15E-1 | 2.09E+0 | 6.54E-3 | -1.95E+1 | 1.87E+1 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 3.57E+1 | 2.24E-1 | 1.87E-2 | 3.60E+1 | 1.15E-1 | 2.09E+0 | 6.54E-3 | -1.95E+1 | 1.87E+1 |
| PET | MJ | 4.75E+1 | 2.27E-1 | 3.31E-1 | 4.81E+1 | 1.16E-1 | 2.20E+0 | 6.77E-3 | -5.23E+1 | -1.90E+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 | 2.51E-2 | 2.39E-5 | 1.89E-5 | 2.52E-2 | 1.22E-5 | 1.57E-3 | 7.52E-6 | -3.91E-2 | -1.23E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 5.45E-5 | 5.40E-7 | 3.54E-12 | 5.50E-5 | 2.76E-7 | 4.16E-6 | 7.58E-9 | -2.22E-5 | 3.73E-5 |
| NHWD | kg | 2.49E-1 | 1.31E-2 | 1.37E-5 | 2.62E-1 | 6.68E-3 | 8.53E-2 | 2.70E-2 | -1.07E-1 | 2.75E-1 |
| RWD | kg | 7.78E-5 | 1.44E-6 | 1.42E-12 | 7.92E-5 | 7.33E-7 | 9.69E-6 | 4.00E-8 | -6.86E-5 | 2.11E-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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