# Environmental Profile

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

Ecochain v3.5.80

| | |
|---|---|
| Product: | 3020719 - Wafix PP Repair Socket WT 40 |
| 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 | 7.09E-2 | 8.97E-4 | 1.45E-4 | 7.19E-2 | 8.48E-4 | 8.20E-2 | 4.00E-4 | -4.72E-2 | 1.08E-1 |
| GWP-f | kg CO2 eq | 1.20E-1 | 8.96E-4 | 1.46E-4 | 1.21E-1 | 8.48E-4 | 2.97E-2 | 4.00E-4 | -5.32E-2 | 9.85E-2 |
| GWP-b | kg CO2 eq | -4.90E-2 | 5.44E-7 | -1.54E-6 | -4.90E-2 | 5.15E-7 | 5.23E-2 | 3.49E-7 | 6.10E-3 | 9.37E-3 |
| GWP-luluc | kg CO2 eq | 1.21E-4 | 3.17E-7 | 1.49E-7 | 1.22E-4 | 3.00E-7 | 5.17E-6 | 6.70E-9 | -7.73E-5 | 5.01E-5 |
| ODP | kg CFC11 eq | 8.73E-9 | 2.07E-10 | 8.26E-12 | 8.95E-9 | 1.95E-10 | 8.01E-10 | 1.00E-11 | -3.02E-9 | 6.93E-9 |
| AP | mol H+ eq | 5.42E-4 | 5.10E-6 | 1.47E-6 | 5.49E-4 | 4.83E-6 | 3.30E-5 | 2.38E-7 | -1.93E-4 | 3.94E-4 |
| EP-fw | kg P eq | 3.16E-6 | 7.37E-9 | 8.24E-9 | 3.18E-6 | 6.97E-9 | 1.53E-7 | 3.09E-10 | -1.38E-6 | 1.96E-6 |
| EP-m | kg N eq | 1.04E-4 | 1.83E-6 | 1.55E-7 | 1.06E-4 | 1.73E-6 | 1.01E-5 | 1.56E-7 | -4.03E-5 | 7.78E-5 |
| EP-T | mol N eq | 1.17E-3 | 2.01E-5 | 1.85E-6 | 1.19E-3 | 1.90E-5 | 1.12E-4 | 9.69E-7 | -4.60E-4 | 8.62E-4 |
| POCP | kg NMVOC eq | 4.50E-4 | 5.75E-6 | 6.28E-7 | 4.57E-4 | 5.44E-6 | 3.45E-5 | 3.64E-7 | -1.81E-4 | 3.16E-4 |
| ADP-mm | kg Sb eq | 7.10E-6 | 2.32E-8 | 1.97E-8 | 7.15E-6 | 2.19E-8 | 1.29E-7 | 2.40E-10 | -4.20E-7 | 6.88E-6 |
| ADP-f | MJ | 3.37E+0 | 1.38E-2 | 1.36E-3 | 3.38E+0 | 1.30E-2 | 9.53E-2 | 7.31E-4 | -1.47E+0 | 2.03E+0 |
| WDP | m3 depriv. | 7.18E-2 | 4.22E-5 | 5.22E-5 | 7.19E-2 | 3.99E-5 | 1.72E-3 | 3.34E-6 | -3.34E-2 | 4.02E-2 |
| PM | disease inc. | 5.98E-9 | 8.09E-11 | 9.08E-12 | 6.07E-9 | 7.65E-11 | 5.25E-10 | 5.02E-12 | -2.53E-9 | 4.15E-9 |
| IR | kBq U-235 eq | 3.98E-3 | 6.01E-5 | 1.02E-6 | 4.04E-3 | 5.69E-5 | 3.06E-4 | 3.39E-6 | -1.30E-3 | 3.10E-3 |
| ETP-fw | CTUe | 2.35E+0 | 1.12E-2 | 1.21E-2 | 2.37E+0 | 1.06E-2 | 1.14E-1 | 6.12E-4 | -9.05E-1 | 1.59E+0 |
| HTP-c | CTUh | 9.14E-11 | 3.98E-13 | 6.17E-13 | 9.24E-11 | 3.76E-13 | 1.34E-11 | 1.76E-14 | -2.84E-11 | 7.78E-11 |
| HTP-nc | CTUh | 1.66E-9 | 1.33E-11 | 1.57E-11 | 1.69E-9 | 1.26E-11 | 1.63E-10 | 3.92E-13 | -2.24E-10 | 1.64E-9 |
| SQP | Pt | 4.73E+0 | 1.18E-2 | 2.24E-3 | 4.75E+0 | 1.11E-2 | 7.51E-2 | 1.88E-3 | -4.69E+0 | 1.42E-1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 1.09E+0 | 1.97E-4 | 2.40E-2 | 1.11E+0 | 1.87E-4 | 4.52E-3 | 2.85E-5 | -7.52E-1 | 3.64E-1 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.09E+0 | 1.97E-4 | 2.40E-2 | 1.11E+0 | 1.87E-4 | 4.52E-3 | 2.85E-5 | -7.52E-1 | 3.64E-1 |
| PENRE | MJ | 3.61E+0 | 1.46E-2 | 1.44E-3 | 3.63E+0 | 1.38E-2 | 1.01E-1 | 7.75E-4 | -1.58E+0 | 2.16E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 3.61E+0 | 1.46E-2 | 1.44E-3 | 3.63E+0 | 1.38E-2 | 1.01E-1 | 7.75E-4 | -1.58E+0 | 2.16E+0 |
| PET | MJ | 4.70E+0 | 1.48E-2 | 2.55E-2 | 4.74E+0 | 1.40E-2 | 1.06E-1 | 8.04E-4 | -2.33E+0 | 2.53E+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 | 1.41E-3 | 1.56E-6 | 1.46E-6 | 1.41E-3 | 1.47E-6 | 5.33E-5 | 9.03E-7 | -6.39E-4 | 8.30E-4 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 1.57E-6 | 3.52E-8 | 2.73E-13 | 1.60E-6 | 3.33E-8 | 1.67E-7 | 8.78E-10 | -8.41E-7 | 9.64E-7 |
| NHWD | kg | 1.48E-2 | 8.53E-4 | 1.05E-6 | 1.57E-2 | 8.06E-4 | 4.85E-3 | 3.22E-3 | -3.58E-3 | 2.10E-2 |
| RWD | kg | 4.40E-6 | 9.36E-8 | 1.10E-13 | 4.49E-6 | 8.85E-8 | 3.96E-7 | 4.78E-9 | -1.30E-6 | 3.68E-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 |

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777