# Environmental Profile

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

Ecochain v3.5.64

| | |
|---|---|
| Product: | 3011046 - Ed Tech PP Reducer 50x40 |
| Unit: | 1 piece |
| Manufacturer: | Wavin - IT - SM Maddalena |

PP SWR (ED Tech) products made of PP for waste water discharge are the ideal solution for anyone who wants a quick and easy connection system. A push-fit system, made watertight using elastomeric seals. Triple-layer pipes, with a white inner layer for easier inspection. Low linear expansion.

| | |
|---|---|
| LCA standard: | EN15804+A2 (2019) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 24-11-2022 |
| End of validity: | 24-11-2027 |
| 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 - IT - SM Maddalena (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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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 | 5.22E-2 | 4.07E-3 | 3.15E-3 | 5.94E-2 | 6.61E-4 | 4.99E-2 | 3.41E-4 | -3.34E-2 | 7.69E-2 |
| GWP-f | kg CO2 eq | 6.69E-2 | 4.07E-3 | 2.70E-3 | 7.37E-2 | 6.60E-4 | 3.34E-2 | 3.41E-4 | -3.74E-2 | 7.07E-2 |
| GWP-b | kg CO2 eq | -1.48E-2 | 2.47E-6 | 2.28E-4 | -1.45E-2 | 4.01E-7 | 1.65E-2 | 3.05E-7 | 4.01E-3 | 5.97E-3 |
| GWP-luluc | kg CO2 eq | 5.64E-5 | 1.44E-6 | 2.28E-4 | 2.86E-4 | 2.34E-7 | 3.53E-6 | 6.19E-9 | -4.13E-5 | 2.48E-4 |
| ODP | kg CFC11 eq | 5.68E-9 | 9.37E-10 | 2.71E-10 | 6.89E-9 | 1.52E-10 | 5.38E-10 | 8.73E-12 | -2.27E-9 | 5.32E-9 |
| AP | mol H+ eq | 2.94E-4 | 2.32E-5 | 1.09E-5 | 3.28E-4 | 3.76E-6 | 2.30E-5 | 2.11E-7 | -1.15E-4 | 2.41E-4 |
| EP-fw | kg P eq | 1.60E-6 | 3.35E-8 | 4.19E-8 | 1.67E-6 | 5.43E-9 | 1.04E-7 | 2.81E-10 | -7.68E-7 | 1.02E-6 |
| EP-m | kg N eq | 5.24E-5 | 8.29E-6 | 1.84E-6 | 6.25E-5 | 1.35E-6 | 7.09E-6 | 1.93E-7 | -2.31E-5 | 4.81E-5 |
| EP-T | mol N eq | 5.87E-4 | 9.14E-5 | 2.06E-5 | 6.99E-4 | 1.48E-5 | 7.81E-5 | 8.51E-7 | -2.60E-4 | 5.32E-4 |
| POCP | kg NMVOC eq | 2.44E-4 | 2.61E-5 | 6.41E-6 | 2.77E-4 | 4.24E-6 | 2.38E-5 | 3.17E-7 | -1.03E-4 | 2.02E-4 |
| ADP-mm | kg Sb eq | 7.29E-6 | 1.05E-7 | 6.57E-8 | 7.46E-6 | 1.71E-8 | 8.44E-8 | 2.13E-10 | -4.51E-7 | 7.11E-6 |
| ADP-f | MJ | 2.10E+0 | 6.24E-2 | 3.55E-2 | 2.20E+0 | 1.01E-2 | 6.46E-2 | 6.39E-4 | -1.03E+0 | 1.24E+0 |
| WDP | m3 depriv. | 4.37E-2 | 1.92E-4 | 1.26E-2 | 5.65E-2 | 3.11E-5 | 1.35E-3 | 3.89E-6 | -2.16E-2 | 3.62E-2 |
| PM | disease inc. | 3.20E-9 | 3.67E-10 | 1.09E-10 | 3.68E-9 | 5.96E-11 | 3.47E-10 | 4.39E-12 | -1.33E-9 | 2.76E-9 |
| IR | kBq U-235 eq | 2.56E-3 | 2.73E-4 | 3.31E-5 | 2.87E-3 | 4.43E-5 | 2.01E-4 | 2.98E-6 | -8.21E-4 | 2.30E-3 |
| ETP-fw | CTUe | 1.19E+0 | 5.07E-2 | 5.60E-2 | 1.30E+0 | 8.23E-3 | 9.95E-2 | 7.11E-4 | -4.89E-1 | 9.21E-1 |
| HTP-c | CTUh | 2.84E-11 | 1.80E-12 | 2.99E-12 | 3.32E-11 | 2.93E-13 | 9.16E-12 | 1.64E-14 | -1.28E-11 | 2.99E-11 |
| HTP-nc | CTUh | 6.26E-10 | 6.04E-11 | 6.19E-11 | 7.49E-10 | 9.81E-12 | 1.17E-10 | 3.91E-13 | -2.64E-10 | 6.12E-10 |
| SQP | Pt | 1.55E+0 | 5.34E-2 | 6.46E-3 | 1.61E+0 | 8.67E-3 | 4.98E-2 | 1.63E-3 | -1.80E+0 | -1.23E-1 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 2.54E-1 | 8.96E-4 | 1.23E-1 | 3.78E-1 | 1.45E-4 | 3.09E-3 | 2.54E-5 | -2.99E-1 | 8.15E-2 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 2.54E-1 | 8.96E-4 | 1.23E-1 | 3.78E-1 | 1.45E-4 | 3.09E-3 | 2.54E-5 | -2.99E-1 | 8.15E-2 |
| PENRE | MJ | 2.25E+0 | 6.63E-2 | 3.87E-2 | 2.35E+0 | 1.08E-2 | 6.89E-2 | 6.78E-4 | -1.11E+0 | 1.32E+0 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 2.25E+0 | 6.63E-2 | 3.87E-2 | 2.35E+0 | 1.08E-2 | 6.89E-2 | 6.78E-4 | -1.11E+0 | 1.32E+0 |
| PET | MJ | 2.50E+0 | 6.72E-2 | 1.61E-1 | 2.73E+0 | 1.09E-2 | 7.20E-2 | 7.04E-4 | -1.41E+0 | 1.40E+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 | 8.24E-4 | 7.07E-6 | 2.98E-4 | 1.13E-3 | 1.15E-6 | 5.58E-5 | 7.87E-7 | -4.04E-4 | 7.82E-4 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 6.71E-7 | 1.60E-7 | 3.45E-8 | 8.65E-7 | 2.59E-8 | 1.20E-7 | 7.75E-10 | -4.54E-7 | 5.58E-7 |
| NHWD | kg | 4.94E-3 | 3.87E-3 | 3.36E-4 | 9.15E-3 | 6.28E-4 | 3.42E-3 | 2.80E-3 | -1.62E-3 | 1.44E-2 |
| RWD | kg | 2.98E-6 | 4.25E-7 | 3.68E-8 | 3.44E-6 | 6.89E-8 | 2.58E-7 | 4.17E-9 | -8.13E-7 | 2.96E-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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