

# Environmental Profile

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

Ecochain v3.5.64



Product: 3010728 - ED Tech PP Pipe HTEM 110 L=3 S/PL  
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                                                                |    |    |     |     | Use stage                                                                                                             |     |     |     |     |     |     | End-of-Life stage                                                             |    |    |    |   |
| A1 Raw material supply A2 Transport A3 Manufacturing                         |    |    |     |     | B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment<br>B6 Operational energy use B7 Operational water use |     |     |     |     |     |     | C1 De-construction demolition C2 Transport C3 Waste processing<br>C4 Disposal |    |    |    |   |
| Construction process stage                                                   |    |    |     |     | Benefits and loads beyond the system boundaries                                                                       |     |     |     |     |     |     |                                                                               |    |    |    |   |
| A4 Transport gate to site<br>A5 Assembly / Construction installation process |    |    |     |     | 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

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# Results

| Environmental impact | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total   |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|---------|
| GWP-total            | kg CO2 eq    | 3.73E+0  | 3.06E-1  | 2.80E-1  | 4.31E+0  | 6.27E-2  | 2.14E+0  | 2.51E-2  | -2.51E+0  | 4.04E+0 |
| GWP-f                | kg CO2 eq    | 4.17E+0  | 3.06E-1  | 2.50E-1  | 4.73E+0  | 6.26E-2  | 1.68E+0  | 2.51E-2  | -2.50E+0  | 4.00E+0 |
| GWP-b                | kg CO2 eq    | -4.48E-1 | 1.86E-4  | 1.58E-2  | -4.32E-1 | 3.80E-5  | 4.64E-1  | 2.23E-5  | -8.59E-3  | 2.29E-2 |
| GWP-luluc            | kg CO2 eq    | 1.38E-3  | 1.08E-4  | 1.42E-2  | 1.57E-2  | 2.22E-5  | 3.52E-4  | 4.60E-7  | -6.48E-4  | 1.54E-2 |
| ODP                  | kg CFC11 eq  | 9.94E-8  | 7.05E-8  | 2.72E-8  | 1.97E-7  | 1.44E-8  | 4.64E-8  | 7.05E-10 | -9.78E-8  | 1.61E-7 |
| AP                   | mol H+ eq    | 1.62E-2  | 1.74E-3  | 8.42E-4  | 1.88E-2  | 3.57E-4  | 1.93E-3  | 1.65E-5  | -7.24E-3  | 1.38E-2 |
| EP-fw                | kg P eq      | 6.70E-5  | 2.52E-6  | 3.33E-6  | 7.29E-5  | 5.15E-7  | 1.02E-5  | 2.08E-8  | -2.94E-5  | 5.42E-5 |
| EP-m                 | kg N eq      | 2.61E-3  | 6.24E-4  | 1.61E-4  | 3.40E-3  | 1.28E-4  | 5.62E-4  | 1.05E-5  | -1.31E-3  | 2.78E-3 |
| EP-T                 | mol N eq     | 2.96E-2  | 6.87E-3  | 1.78E-3  | 3.83E-2  | 1.41E-3  | 6.19E-3  | 6.72E-5  | -1.47E-2  | 3.12E-2 |
| POCP                 | kg NMVOC eq  | 1.33E-2  | 1.96E-3  | 5.64E-4  | 1.59E-2  | 4.02E-4  | 1.95E-3  | 2.47E-5  | -6.59E-3  | 1.16E-2 |
| ADP-mm               | kg Sb eq     | 8.40E-5  | 7.92E-6  | 4.57E-6  | 9.65E-5  | 1.62E-6  | 7.67E-6  | 1.65E-8  | -1.76E-5  | 8.83E-5 |
| ADP-f                | MJ           | 1.45E+2  | 4.70E+0  | 3.44E+0  | 1.54E+2  | 9.62E-1  | 6.14E+0  | 5.10E-2  | -7.80E+1  | 8.28E+1 |
| WDP                  | m3 depriv.   | 2.94E+0  | 1.44E-2  | 7.89E-1  | 3.75E+0  | 2.95E-3  | 1.19E-1  | 2.58E-4  | -1.35E+0  | 2.52E+0 |
| PM                   | disease inc. | 1.47E-7  | 2.76E-8  | 1.02E-8  | 1.85E-7  | 5.65E-9  | 3.20E-8  | 3.48E-10 | -6.44E-8  | 1.59E-7 |
| IR                   | kBq U-235 eq | 8.43E-2  | 2.05E-2  | 3.36E-3  | 1.08E-1  | 4.20E-3  | 1.86E-2  | 2.35E-4  | -3.85E-2  | 9.27E-2 |
| ETP-fw               | CTUe         | 2.67E+1  | 3.81E+0  | 4.14E+0  | 3.47E+1  | 7.81E-1  | 6.96E+0  | 4.17E-2  | -1.18E+1  | 3.06E+1 |
| HTP-c                | CTUh         | 1.33E-9  | 1.36E-10 | 2.51E-10 | 1.72E-9  | 2.78E-11 | 8.24E-10 | 1.19E-12 | -5.30E-10 | 2.04E-9 |
| HTP-nc               | CTUh         | 3.00E-8  | 4.55E-9  | 4.56E-9  | 3.91E-8  | 9.31E-10 | 1.02E-8  | 2.64E-11 | -1.28E-8  | 3.74E-8 |
| SQP                  | Pt           | 4.61E+1  | 4.02E+0  | 7.12E-1  | 5.08E+1  | 8.23E-1  | 4.92E+0  | 1.29E-1  | -2.68E+1  | 2.99E+1 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 8.08E+0  | 6.74E-2  | 7.67E+0  | 1.58E+1  | 1.38E-2  | 3.01E-1  | 1.85E-3  | -4.82E+0  | 1.13E+1 |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 8.08E+0  | 6.74E-2  | 7.67E+0  | 1.58E+1  | 1.38E-2  | 3.01E-1  | 1.85E-3  | -4.82E+0  | 1.13E+1 |
| PENRE                | MJ           | 1.56E+2  | 4.99E+0  | 3.76E+0  | 1.65E+2  | 1.02E+0  | 6.54E+0  | 5.41E-2  | -8.40E+1  | 8.84E+1 |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 1.56E+2  | 4.99E+0  | 3.76E+0  | 1.65E+2  | 1.02E+0  | 6.54E+0  | 5.41E-2  | -8.40E+1  | 8.84E+1 |
| PET                  | MJ           | 1.64E+2  | 5.05E+0  | 1.14E+1  | 1.81E+2  | 1.03E+0  | 6.85E+0  | 5.59E-2  | -8.88E+1  | 9.97E+1 |
| 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           | 4.58E-2  | 5.32E-4  | 1.88E-2  | 6.51E-2  | 1.09E-4  | 3.55E-3  | 6.26E-5  | -2.05E-2  | 4.82E-2 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 2.28E-5 | 1.20E-5 | 3.82E-6 | 3.86E-5 | 2.46E-6 | 1.00E-5 | 6.11E-8 | -1.98E-5 | 3.13E-5 |
| NHWD                              | kg   | 2.32E-1 | 2.91E-1 | 3.71E-2 | 5.60E-1 | 5.96E-2 | 3.04E-1 | 2.39E-1 | -7.29E-2 | 1.09E+0 |
| RWD                               | kg   | 7.68E-5 | 3.19E-5 | 4.08E-6 | 1.13E-4 | 6.54E-6 | 2.36E-5 | 3.34E-7 | -3.54E-5 | 1.08E-4 |
| 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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