

# Environmental Profile

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

Ecochain v3.5.64



Product: 3018727 - Ed Tech PP Bend HTB 30° 40  
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 B6 Operational energy use B7 Operational water use |     |     |     |     |     |     | C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal |    |    |    |   |
| Construction process stage                                                |    |    |     |     |                                                                                                                    |     |     |     |     |     |     | Benefits and loads beyond the system boundaries                            |    |    |    |   |
| A4 Transport gate to site 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    | 8.01E-2  | 5.79E-3  | 5.10E-3  | 9.10E-2  | 1.00E-3  | 6.08E-2  | 5.03E-4  | -4.85E-2  | 1.05E-1  |
| GWP-f                | kg CO2 eq    | 9.46E-2  | 5.79E-3  | 4.37E-3  | 1.05E-1  | 1.00E-3  | 4.35E-2  | 5.03E-4  | -5.43E-2  | 9.55E-2  |
| GWP-b                | kg CO2 eq    | -1.46E-2 | 3.51E-6  | 3.69E-4  | -1.42E-2 | 6.09E-7  | 1.73E-2  | 4.46E-7  | 5.87E-3   | 8.94E-3  |
| GWP-luluc            | kg CO2 eq    | 7.36E-5  | 2.05E-6  | 3.69E-4  | 4.44E-4  | 3.55E-7  | 5.50E-6  | 8.89E-9  | -5.77E-5  | 3.92E-4  |
| ODP                  | kg CFC11 eq  | 6.34E-9  | 1.33E-9  | 4.38E-10 | 8.11E-9  | 2.31E-10 | 8.14E-10 | 1.28E-11 | -3.00E-9  | 6.17E-9  |
| AP                   | mol H+ eq    | 3.95E-4  | 3.30E-5  | 1.76E-5  | 4.45E-4  | 5.71E-6  | 3.44E-5  | 3.07E-7  | -1.68E-4  | 3.18E-4  |
| EP-fw                | kg P eq      | 2.09E-6  | 4.76E-8  | 6.78E-8  | 2.20E-6  | 8.25E-9  | 1.62E-7  | 4.06E-10 | -1.11E-6  | 1.27E-6  |
| EP-m                 | kg N eq      | 7.08E-5  | 1.18E-5  | 2.97E-6  | 8.56E-5  | 2.04E-6  | 1.05E-5  | 2.56E-7  | -3.30E-5  | 6.53E-5  |
| EP-T                 | mol N eq     | 7.89E-4  | 1.30E-4  | 3.34E-5  | 9.52E-4  | 2.25E-5  | 1.15E-4  | 1.24E-6  | -3.72E-4  | 7.19E-4  |
| POCP                 | kg NMVOC eq  | 3.31E-4  | 3.72E-5  | 1.04E-5  | 3.78E-4  | 6.44E-6  | 3.55E-5  | 4.64E-7  | -1.49E-4  | 2.72E-4  |
| ADP-mm               | kg Sb eq     | 7.65E-6  | 1.50E-7  | 1.06E-7  | 7.91E-6  | 2.59E-8  | 1.30E-7  | 3.10E-10 | -5.68E-7  | 7.50E-6  |
| ADP-f                | MJ           | 3.06E+0  | 8.88E-2  | 5.75E-2  | 3.21E+0  | 1.54E-2  | 9.97E-2  | 9.34E-4  | -1.55E+0  | 1.77E+0  |
| WDP                  | m3 depriv.   | 6.26E-2  | 2.73E-4  | 2.03E-2  | 8.32E-2  | 4.72E-5  | 2.02E-3  | 5.24E-6  | -3.30E-2  | 5.23E-2  |
| PM                   | disease inc. | 4.14E-9  | 5.22E-10 | 1.76E-10 | 4.84E-9  | 9.05E-11 | 5.33E-10 | 6.42E-12 | -1.88E-9  | 3.59E-9  |
| IR                   | kBq U-235 eq | 3.11E-3  | 3.88E-4  | 5.36E-5  | 3.55E-3  | 6.72E-5  | 3.09E-4  | 4.35E-6  | -1.17E-3  | 2.76E-3  |
| ETP-fw               | CTUe         | 1.56E+0  | 7.21E-2  | 9.07E-2  | 1.72E+0  | 1.25E-2  | 1.41E-1  | 9.58E-4  | -6.95E-1  | 1.18E+0  |
| HTP-c                | CTUh         | 3.51E-11 | 2.57E-12 | 4.83E-12 | 4.25E-11 | 4.45E-13 | 1.39E-11 | 2.36E-14 | -1.66E-11 | 4.03E-11 |
| HTP-nc               | CTUh         | 8.14E-10 | 8.60E-11 | 1.00E-10 | 1.00E-9  | 1.49E-11 | 1.75E-10 | 5.49E-13 | -3.76E-10 | 8.15E-10 |
| SQP                  | Pt           | 1.66E+0  | 7.60E-2  | 1.05E-2  | 1.75E+0  | 1.32E-2  | 7.74E-2  | 2.39E-3  | -2.15E+0  | -3.12E-1 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 2.83E-1  | 1.27E-3  | 1.99E-1  | 4.83E-1  | 2.21E-4  | 4.79E-3  | 3.69E-5  | -3.68E-1  | 1.20E-1  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 2.83E-1  | 1.27E-3  | 1.99E-1  | 4.83E-1  | 2.21E-4  | 4.79E-3  | 3.69E-5  | -3.68E-1  | 1.20E-1  |
| PENRE                | MJ           | 3.28E+0  | 9.43E-2  | 6.27E-2  | 3.44E+0  | 1.63E-2  | 1.06E-1  | 9.91E-4  | -1.67E+0  | 1.89E+0  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 3.28E+0  | 9.43E-2  | 6.27E-2  | 3.44E+0  | 1.63E-2  | 1.06E-1  | 9.91E-4  | -1.67E+0  | 1.89E+0  |
| PET                  | MJ           | 3.56E+0  | 9.56E-2  | 2.61E-1  | 3.92E+0  | 1.66E-2  | 1.11E-1  | 1.03E-3  | -2.04E+0  | 2.01E+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           | 1.12E-3  | 1.01E-5  | 4.83E-4  | 1.61E-3  | 1.74E-6  | 7.57E-5  | 1.15E-6  | -6.06E-4  | 1.08E-3  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 8.14E-7 | 2.27E-7 | 5.58E-8 | 1.10E-6 | 3.93E-8 | 1.79E-7 | 1.13E-9 | -5.93E-7 | 7.22E-7 |
| NHWD                              | kg   | 6.24E-3 | 5.51E-3 | 5.44E-4 | 1.23E-2 | 9.54E-4 | 5.13E-3 | 4.10E-3 | -2.16E-3 | 2.03E-2 |
| RWD                               | kg   | 3.47E-6 | 6.04E-7 | 5.96E-8 | 4.13E-6 | 1.05E-7 | 3.97E-7 | 6.10E-9 | -1.13E-6 | 3.51E-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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