# Environmental Profile

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

Ecochain v4.0.3

| | |
|---|---|
| Product: | 3023797 - Tegra NG 1000 PP Cross 90° DN200 SW |
| Unit: | 1 piece |
| Manufacturer: | Wavin |

Wavin's Tegra drains that Wavin offers are also part of a sustainable total solution for your sewer system. Your system becomes accessible for inspection and maintenance-friendly thanks to our flow profiles. Tegra wells are resistant to acids, bases and solvents.

| | |
|---|---|
| LCA standard: | EN15804+A2 (2019) |
| Standard database: | Worldwide - Ecoinvent v 3.6 Cut-Off |
| Externally verified: | Yes |
| Issue date: | 26-07-2023 |
| End of validity: | 26-07-2028 |
| 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 (2021). (☑ = 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 | 1.06E+2 | 4.16E+0 | 1.66E+0 | 1.11E+2 | 1.51E+0 | 5.79E+1 | 7.13E-1 | -7.09E+1 | 1.01E+2 |
| GWP-f | kg CO2 eq | 1.22E+2 | 4.16E+0 | 1.67E+0 | 1.27E+2 | 1.51E+0 | 4.40E+1 | 7.13E-1 | -7.07E+1 | 1.03E+2 |
| GWP-b | kg CO2 eq | -1.59E+1 | 1.92E-3 | -1.96E-2 | -1.59E+1 | 9.18E-4 | 1.39E+1 | 6.21E-4 | -2.40E-1 | -2.25E+0 |
| GWP-luluc | kg CO2 eq | 4.30E-2 | 1.52E-3 | 1.82E-3 | 4.64E-2 | 5.35E-4 | 8.53E-3 | 1.21E-5 | -1.99E-2 | 3.56E-2 |
| ODP | kg CFC11 eq | 3.76E-6 | 9.18E-7 | 9.43E-8 | 4.78E-6 | 3.49E-7 | 1.12E-6 | 1.79E-8 | -2.78E-6 | 3.48E-6 |
| AP | mol H+ eq | 4.54E-1 | 2.41E-2 | 1.83E-2 | 4.96E-1 | 8.62E-3 | 4.70E-2 | 4.26E-4 | -2.05E-1 | 3.47E-1 |
| EP-fw | kg P eq | 1.93E-3 | 4.20E-5 | 1.04E-4 | 2.08E-3 | 1.24E-5 | 2.46E-4 | 5.56E-7 | -8.43E-4 | 1.50E-3 |
| EP-m | kg N eq | 7.76E-2 | 8.50E-3 | 1.88E-3 | 8.80E-2 | 3.08E-3 | 1.37E-2 | 2.78E-4 | -3.75E-2 | 6.76E-2 |
| EP-T | mol N eq | 8.93E-1 | 9.38E-2 | 2.24E-2 | 1.01E+0 | 3.40E-2 | 1.51E-1 | 1.73E-3 | -4.17E-1 | 7.79E-1 |
| POCP | kg NMVOC eq | 3.94E-1 | 2.68E-2 | 7.51E-3 | 4.28E-1 | 9.71E-3 | 4.76E-2 | 6.50E-4 | -1.89E-1 | 2.98E-1 |
| ADP-mm | kg Sb eq | 3.05E-3 | 1.05E-4 | 2.34E-4 | 3.39E-3 | 3.91E-5 | 1.85E-4 | 4.30E-7 | -4.87E-4 | 3.13E-3 |
| ADP-f | MJ | 4.22E+3 | 6.28E+1 | 1.60E+1 | 4.30E+3 | 2.32E+1 | 1.48E+2 | 1.31E+0 | -2.20E+3 | 2.27E+3 |
| WDP | m3 depriv. | 8.17E+1 | 2.24E-1 | 6.48E-1 | 8.25E+1 | 7.13E-2 | 2.90E+0 | 6.57E-3 | -3.80E+1 | 4.75E+1 |
| PM | disease inc. | 4.39E-6 | 3.74E-7 | 1.10E-7 | 4.87E-6 | 1.37E-7 | 7.72E-7 | 8.97E-9 | -1.86E-6 | 3.93E-6 |
| IR | kBq U-235 eq | 2.61E+0 | 2.63E-1 | 1.18E-2 | 2.88E+0 | 1.01E-1 | 4.49E-1 | 6.05E-3 | -1.10E+0 | 2.34E+0 |
| ETP-fw | CTUe | 8.42E+2 | 5.60E+1 | 1.51E+2 | 1.05E+3 | 1.89E+1 | 1.67E+2 | 1.09E+0 | -3.22E+2 | 9.14E+2 |
| HTP-c | CTUh | 4.16E-8 | 1.82E-9 | 7.76E-9 | 5.12E-8 | 6.71E-10 | 2.03E-8 | 3.19E-11 | -1.65E-8 | 5.57E-8 |
| HTP-nc | CTUh | 9.26E-7 | 6.12E-8 | 1.95E-7 | 1.18E-6 | 2.25E-8 | 2.49E-7 | 7.03E-10 | -3.66E-7 | 1.09E-6 |
| SQP | Pt | 1.61E+3 | 5.44E+1 | 2.73E+1 | 1.69E+3 | 1.99E+1 | 1.19E+2 | 3.35E+0 | -1.04E+3 | 7.92E+2 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 3.55E+2 | 7.86E-1 | 2.95E+2 | 6.51E+2 | 3.33E-1 | 7.30E+0 | 5.06E-2 | -1.74E+2 | 4.85E+2 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 3.55E+2 | 7.86E-1 | 2.95E+2 | 6.51E+2 | 3.33E-1 | 7.30E+0 | 5.06E-2 | -1.74E+2 | 4.85E+2 |
| PENRE | MJ | 4.53E+3 | 6.66E+1 | 1.70E+1 | 4.61E+3 | 2.46E+1 | 1.58E+2 | 1.39E+0 | -2.37E+3 | 2.43E+3 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 4.53E+3 | 6.66E+1 | 1.70E+1 | 4.61E+3 | 2.46E+1 | 1.58E+2 | 1.39E+0 | -2.37E+3 | 2.43E+3 |
| PET | MJ | 4.88E+3 | 6.74E+1 | 3.12E+2 | 5.26E+3 | 2.50E+1 | 1.65E+2 | 1.44E+0 | -2.55E+3 | 2.91E+3 |
| 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 | 1.25E+0 | 7.64E-3 | 1.80E-2 | 1.28E+0 | 2.63E-3 | 8.55E-2 | 1.61E-3 | -5.77E-1 | 7.93E-1 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 8.16E-4 | 1.59E-4 | 3.38E-9 | 9.75E-4 | 5.94E-5 | 2.42E-4 | 1.57E-6 | -5.79E-4 | 6.98E-4 |
| NHWD | kg | 7.56E+0 | 3.98E+0 | 1.33E-2 | 1.16E+1 | 1.44E+0 | 7.29E+0 | 5.75E+0 | -2.21E+0 | 2.38E+1 |
| RWD | kg | 2.57E-3 | 4.12E-4 | 1.26E-9 | 2.98E-3 | 1.58E-4 | 5.70E-4 | 8.52E-6 | -1.01E-3 | 2.70E-3 |
| 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