

# Environmental Profile

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

Ecochain v3.5.64



Product: 3061962 - Wafix PP Pipe GY 110 L=0,5 S/CH  
 Unit: 1 piece  
 Manufacturer: Wavin - SE - Eskilstuna

LCA standard: EN15804+A2 (2019)  
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
 Externally verified: Yes  
 Issue date: 20-06-2022  
 End of validity: 20-06-2027  
 Verifier: Harry van Ewijk - SGS Search



Wafix PP is a versatile, uncomplicated solution for your indoor drain. You can install the impact-resistant pipes even in frost. Their excellent chemical resistance makes them ideal for embedment applications.

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 - SE - Eskilstuna (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 non-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

This document and supporting material contain confidential and proprietary business information of Wavin - SE - Eskilstuna. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - SE - Eskilstuna.

# Results

| Environmental impact | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total            | kg CO2 eq    | 1.47E+0  | 6.26E-2  | 4.01E-2  | 1.58E+0  | 1.89E-2  | 5.62E-1  | 8.91E-3  | -8.85E-1  | 1.28E+0  |
| GWP-f                | kg CO2 eq    | 1.48E+0  | 6.26E-2  | 2.90E-2  | 1.57E+0  | 1.89E-2  | 5.52E-1  | 8.91E-3  | -8.82E-1  | 1.27E+0  |
| GWP-b                | kg CO2 eq    | -3.19E-3 | 2.00E-5  | 7.64E-3  | 4.47E-3  | 1.15E-5  | 9.95E-3  | 7.76E-6  | -3.07E-3  | 1.14E-2  |
| GWP-luluc            | kg CO2 eq    | 6.34E-4  | 2.63E-5  | 3.38E-3  | 4.04E-3  | 6.69E-6  | 1.06E-4  | 1.51E-7  | -2.50E-4  | 3.90E-3  |
| ODP                  | kg CFC11 eq  | 3.72E-8  | 1.36E-8  | 3.29E-9  | 5.41E-8  | 4.35E-9  | 1.39E-8  | 2.23E-10 | -3.33E-8  | 3.93E-8  |
| AP                   | mol H+ eq    | 5.49E-3  | 7.12E-4  | 2.46E-4  | 6.45E-3  | 1.08E-4  | 5.85E-4  | 5.32E-6  | -2.52E-3  | 4.63E-3  |
| EP-fw                | kg P eq      | 2.45E-5  | 5.50E-7  | 5.36E-7  | 2.56E-5  | 1.55E-7  | 3.07E-6  | 6.93E-9  | -1.06E-5  | 1.82E-5  |
| EP-m                 | kg N eq      | 9.32E-4  | 2.07E-4  | 7.29E-5  | 1.21E-3  | 3.85E-5  | 1.71E-4  | 3.47E-6  | -4.47E-4  | 9.77E-4  |
| EP-T                 | mol N eq     | 1.04E-2  | 2.29E-3  | 8.00E-4  | 1.35E-2  | 4.24E-4  | 1.88E-3  | 2.16E-5  | -4.96E-3  | 1.09E-2  |
| POCP                 | kg NMVOC eq  | 4.67E-3  | 6.23E-4  | 2.22E-4  | 5.51E-3  | 1.21E-4  | 5.93E-4  | 8.12E-6  | -2.26E-3  | 3.98E-3  |
| ADP-mm               | kg Sb eq     | 3.22E-5  | 1.34E-6  | 8.74E-7  | 3.44E-5  | 4.89E-7  | 2.32E-6  | 5.36E-9  | -5.88E-6  | 3.13E-5  |
| ADP-f                | MJ           | 5.16E+1  | 9.14E-1  | 2.89E-1  | 5.28E+1  | 2.90E-1  | 1.85E+0  | 1.63E-2  | -2.78E+1  | 2.72E+1  |
| WDP                  | m3 depriv.   | 1.03E+0  | 2.90E-3  | 1.86E-1  | 1.22E+0  | 8.90E-4  | 3.62E-2  | 8.03E-5  | -4.95E-1  | 7.61E-1  |
| PM                   | disease inc. | 4.93E-8  | 4.85E-9  | 4.15E-9  | 5.83E-8  | 1.71E-9  | 9.63E-9  | 1.12E-10 | -2.17E-8  | 4.81E-8  |
| IR                   | kBq U-235 eq | 3.00E-2  | 3.85E-3  | 8.58E-4  | 3.47E-2  | 1.27E-3  | 5.59E-3  | 7.56E-5  | -1.35E-2  | 2.81E-2  |
| ETP-fw               | CTUe         | 9.35E+0  | 7.72E-1  | 8.04E-1  | 1.09E+1  | 2.35E-1  | 2.10E+0  | 1.36E-2  | -4.29E+0  | 8.99E+0  |
| HTP-c                | CTUh         | 3.82E-10 | 2.85E-11 | 3.18E-11 | 4.42E-10 | 8.38E-12 | 2.51E-10 | 3.97E-13 | -1.53E-10 | 5.50E-10 |
| HTP-nc               | CTUh         | 1.06E-8  | 8.12E-10 | 8.66E-10 | 1.23E-8  | 2.81E-10 | 3.11E-9  | 8.77E-12 | -4.36E-9  | 1.13E-8  |
| SQP                  | Pt           | 2.81E+0  | 6.72E-1  | 3.79E-2  | 3.52E+0  | 2.48E-1  | 1.48E+0  | 4.18E-2  | -2.81E+0  | 2.47E+0  |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 2.08E+0  | 1.04E-2  | 1.82E+0  | 3.91E+0  | 4.16E-3  | 9.11E-2  | 6.32E-4  | -7.19E-1  | 3.28E+0  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 2.08E+0  | 1.04E-2  | 1.82E+0  | 3.91E+0  | 4.16E-3  | 9.11E-2  | 6.32E-4  | -7.19E-1  | 3.28E+0  |
| PENRE                | MJ           | 5.53E+1  | 9.71E-1  | 3.06E-1  | 5.66E+1  | 3.08E-1  | 1.97E+0  | 1.73E-2  | -2.99E+1  | 2.90E+1  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 5.53E+1  | 9.71E-1  | 3.06E-1  | 5.66E+1  | 3.08E-1  | 1.97E+0  | 1.73E-2  | -2.99E+1  | 2.90E+1  |
| PET                  | MJ           | 5.74E+1  | 9.81E-1  | 2.13E+0  | 6.05E+1  | 3.12E-1  | 2.06E+0  | 1.79E-2  | -3.06E+1  | 3.23E+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           | 1.60E-2  | 9.92E-5  | 4.42E-3  | 2.05E-2  | 3.28E-5  | 1.07E-3  | 2.01E-5  | -7.60E-3  | 1.41E-2  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 7.35E-6 | 2.04E-6 | 4.39E-7 | 9.83E-6 | 7.42E-7 | 3.02E-6 | 1.96E-8 | -6.52E-6 | 7.10E-6 |
| NHWD                              | kg   | 7.22E-2 | 4.79E-2 | 1.35E-3 | 1.21E-1 | 1.80E-2 | 9.08E-2 | 7.18E-2 | -2.22E-2 | 2.80E-1 |
| RWD                               | kg   | 2.79E-5 | 6.07E-6 | 1.22E-6 | 3.52E-5 | 1.97E-6 | 7.09E-6 | 1.06E-7 | -1.22E-5 | 3.21E-5 |
| 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