

# Environmental Profile

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

Ecochain v3.5.64



Product: 3031668 - Wafix PP Pipe BK 40 L=3  
Unit: 1 piece  
Manufacturer: Wavin - SE - Eskilstuna

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.

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



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                                                                |    |    |     |     | 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    | 2.10E+0  | 8.08E-2  | 7.32E-2  | 2.25E+0  | 2.73E-2  | 7.91E-1  | 1.28E-2  | -1.27E+0  | 1.81E+0  |
| GWP-f                | kg CO2 eq    | 2.09E+0  | 8.07E-2  | 5.30E-2  | 2.22E+0  | 2.72E-2  | 7.92E-1  | 1.28E-2  | -1.27E+0  | 1.79E+0  |
| GWP-b                | kg CO2 eq    | 9.54E-3  | 2.14E-5  | 1.40E-2  | 2.35E-2  | 1.65E-5  | -1.10E-3 | 1.12E-5  | -4.37E-3  | 1.81E-2  |
| GWP-luluc            | kg CO2 eq    | 5.47E-4  | 3.55E-5  | 6.17E-3  | 6.75E-3  | 9.64E-6  | 1.53E-4  | 2.18E-7  | -2.41E-4  | 6.67E-3  |
| ODP                  | kg CFC11 eq  | 3.77E-8  | 1.74E-8  | 6.01E-9  | 6.11E-8  | 6.28E-9  | 1.99E-8  | 3.22E-10 | -4.67E-8  | 4.10E-8  |
| AP                   | mol H+ eq    | 7.42E-3  | 1.09E-3  | 4.49E-4  | 8.97E-3  | 1.55E-4  | 8.39E-4  | 7.68E-6  | -3.57E-3  | 6.40E-3  |
| EP-fw                | kg P eq      | 3.11E-5  | 6.69E-7  | 9.79E-7  | 3.27E-5  | 2.24E-7  | 4.42E-6  | 1.00E-8  | -1.41E-5  | 2.33E-5  |
| EP-m                 | kg N eq      | 1.23E-3  | 3.07E-4  | 1.33E-4  | 1.67E-3  | 5.55E-5  | 2.44E-4  | 5.00E-6  | -6.30E-4  | 1.34E-3  |
| EP-T                 | mol N eq     | 1.39E-2  | 3.40E-3  | 1.46E-3  | 1.87E-2  | 6.12E-4  | 2.68E-3  | 3.12E-5  | -6.98E-3  | 1.51E-2  |
| POCP                 | kg NMVOC eq  | 6.43E-3  | 9.14E-4  | 4.06E-4  | 7.75E-3  | 1.75E-4  | 8.48E-4  | 1.17E-5  | -3.23E-3  | 5.55E-3  |
| ADP-mm               | kg Sb eq     | 2.81E-5  | 1.61E-6  | 1.60E-6  | 3.13E-5  | 7.05E-7  | 3.33E-6  | 7.74E-9  | -8.38E-6  | 2.70E-5  |
| ADP-f                | MJ           | 7.42E+1  | 1.16E+0  | 5.27E-1  | 7.59E+1  | 4.18E-1  | 2.66E+0  | 2.35E-2  | -3.99E+1  | 3.91E+1  |
| WDP                  | m3 depriv.   | 1.46E+0  | 3.50E-3  | 3.40E-1  | 1.81E+0  | 1.28E-3  | 5.21E-2  | 1.18E-4  | -6.91E-1  | 1.17E+0  |
| PM                   | disease inc. | 6.52E-8  | 5.87E-9  | 7.58E-9  | 7.86E-8  | 2.46E-9  | 1.38E-8  | 1.62E-10 | -3.00E-8  | 6.51E-8  |
| IR                   | kBq U-235 eq | 3.83E-2  | 4.91E-3  | 1.57E-3  | 4.48E-2  | 1.83E-3  | 8.02E-3  | 1.09E-4  | -1.84E-2  | 3.64E-2  |
| ETP-fw               | CTUe         | 1.13E+1  | 9.61E-1  | 1.47E+0  | 1.37E+1  | 3.40E-1  | 3.00E+0  | 1.97E-2  | -5.10E+0  | 1.20E+1  |
| HTP-c                | CTUh         | 5.72E-10 | 3.73E-11 | 5.80E-11 | 6.68E-10 | 1.21E-11 | 3.61E-10 | 5.74E-13 | -2.11E-10 | 8.31E-10 |
| HTP-nc               | CTUh         | 1.44E-8  | 9.93E-10 | 1.58E-9  | 1.70E-8  | 4.05E-10 | 4.47E-9  | 1.27E-11 | -4.92E-9  | 1.69E-8  |
| SQP                  | Pt           | 2.55E+0  | 7.93E-1  | 6.93E-2  | 3.41E+0  | 3.58E-1  | 2.13E+0  | 6.03E-2  | -1.08E+0  | 4.88E+0  |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 1.08E+0  | 1.27E-2  | 3.32E+0  | 4.41E+0  | 6.00E-3  | 1.31E-1  | 9.11E-4  | -4.94E-1  | 4.06E+0  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 1.08E+0  | 1.27E-2  | 3.32E+0  | 4.41E+0  | 6.00E-3  | 1.31E-1  | 9.11E-4  | -4.94E-1  | 4.06E+0  |
| PENRE                | MJ           | 7.96E+1  | 1.24E+0  | 5.60E-1  | 8.14E+1  | 4.44E-1  | 2.83E+0  | 2.49E-2  | -4.30E+1  | 4.18E+1  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 7.96E+1  | 1.24E+0  | 5.60E-1  | 8.14E+1  | 4.44E-1  | 2.83E+0  | 2.49E-2  | -4.30E+1  | 4.18E+1  |
| PET                  | MJ           | 8.07E+1  | 1.25E+0  | 3.88E+0  | 8.59E+1  | 4.50E-1  | 2.96E+0  | 2.59E-2  | -4.35E+1  | 4.58E+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           | 2.20E-2  | 1.20E-4  | 8.07E-3  | 3.02E-2  | 4.73E-5  | 1.53E-3  | 2.90E-5  | -1.03E-2  | 2.14E-2  |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 9.35E-6 | 2.46E-6 | 8.03E-7 | 1.26E-5 | 1.07E-6 | 4.33E-6 | 2.83E-8 | -9.79E-6 | 8.25E-6 |
| NHWD                              | kg   | 8.26E-2 | 5.57E-2 | 2.46E-3 | 1.41E-1 | 2.59E-2 | 1.30E-1 | 1.04E-1 | -3.12E-2 | 3.70E-1 |
| RWD                               | kg   | 3.32E-5 | 7.77E-6 | 2.23E-6 | 4.32E-5 | 2.84E-6 | 1.02E-5 | 1.54E-7 | -1.66E-5 | 3.98E-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       |



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