

# Environmental Profile

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

Ecochain v3.5.64



Product: 3077079 - Wafix PP Pipe BR 110 SN8 L=2  
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    | 5.25E+0 | 5.02E-1  | 1.82E-1  | 5.94E+0 | 6.78E-2  | 1.97E+0  | 3.19E-2  | -3.16E+0  | 4.84E+0 |
| GWP-f                | kg CO2 eq    | 5.23E+0 | 5.01E-1  | 1.32E-1  | 5.86E+0 | 6.77E-2  | 1.97E+0  | 3.19E-2  | -3.15E+0  | 4.78E+0 |
| GWP-b                | kg CO2 eq    | 2.47E-2 | 2.28E-4  | 3.47E-2  | 5.96E-2 | 4.11E-5  | -2.74E-3 | 2.78E-5  | -1.09E-2  | 4.61E-2 |
| GWP-luluc            | kg CO2 eq    | 1.39E-3 | 1.85E-4  | 1.53E-2  | 1.69E-2 | 2.40E-5  | 3.81E-4  | 5.42E-7  | -5.98E-4  | 1.67E-2 |
| ODP                  | kg CFC11 eq  | 1.05E-7 | 1.11E-7  | 1.49E-8  | 2.30E-7 | 1.56E-8  | 4.96E-8  | 8.01E-10 | -1.16E-7  | 1.80E-7 |
| AP                   | mol H+ eq    | 1.88E-2 | 3.04E-3  | 1.12E-3  | 2.29E-2 | 3.86E-4  | 2.08E-3  | 1.91E-5  | -8.87E-3  | 1.65E-2 |
| EP-fw                | kg P eq      | 7.88E-5 | 5.03E-6  | 2.43E-6  | 8.62E-5 | 5.57E-7  | 1.10E-5  | 2.49E-8  | -3.50E-5  | 6.28E-5 |
| EP-m                 | kg N eq      | 3.12E-3 | 1.05E-3  | 3.31E-4  | 4.51E-3 | 1.38E-4  | 6.05E-4  | 1.24E-5  | -1.57E-3  | 3.70E-3 |
| EP-T                 | mol N eq     | 3.52E-2 | 1.16E-2  | 3.63E-3  | 5.05E-2 | 1.52E-3  | 6.67E-3  | 7.75E-5  | -1.73E-2  | 4.14E-2 |
| POCP                 | kg NMVOC eq  | 1.62E-2 | 3.31E-3  | 1.01E-3  | 2.05E-2 | 4.35E-4  | 2.11E-3  | 2.91E-5  | -8.04E-3  | 1.51E-2 |
| ADP-mm               | kg Sb eq     | 8.32E-5 | 1.26E-5  | 3.97E-6  | 9.98E-5 | 1.75E-6  | 8.27E-6  | 1.92E-8  | -2.08E-5  | 8.90E-5 |
| ADP-f                | MJ           | 1.85E+2 | 7.55E+0  | 1.31E+0  | 1.94E+2 | 1.04E+0  | 6.61E+0  | 5.84E-2  | -9.91E+1  | 1.03E+2 |
| WDP                  | m3 depriv.   | 3.65E+0 | 2.69E-2  | 8.44E-1  | 4.52E+0 | 3.19E-3  | 1.29E-1  | 2.91E-4  | -1.72E+0  | 2.94E+0 |
| PM                   | disease inc. | 1.66E-7 | 4.47E-8  | 1.88E-8  | 2.29E-7 | 6.11E-9  | 3.43E-8  | 4.02E-10 | -7.45E-8  | 1.96E-7 |
| IR                   | kBq U-235 eq | 9.91E-2 | 3.16E-2  | 3.89E-3  | 1.35E-1 | 4.54E-3  | 1.99E-2  | 2.71E-4  | -4.58E-2  | 1.14E-1 |
| ETP-fw               | CTUe         | 2.94E+1 | 6.72E+0  | 3.65E+0  | 3.97E+1 | 8.44E-1  | 7.47E+0  | 4.89E-2  | -1.27E+1  | 3.54E+1 |
| HTP-c                | CTUh         | 1.47E-9 | 2.19E-10 | 1.44E-10 | 1.83E-9 | 3.00E-11 | 8.97E-10 | 1.43E-12 | -5.24E-10 | 2.24E-9 |
| HTP-nc               | CTUh         | 3.70E-8 | 7.33E-9  | 3.93E-9  | 4.82E-8 | 1.01E-9  | 1.11E-8  | 3.15E-11 | -1.23E-8  | 4.81E-8 |
| SQP                  | Pt           | 6.86E+0 | 6.50E+0  | 1.72E-1  | 1.35E+1 | 8.89E-1  | 5.29E+0  | 1.50E-1  | -2.68E+0  | 1.72E+1 |
| Resource use         | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 3.81E+0 | 9.41E-2  | 8.26E+0  | 1.22E+1 | 1.49E-2  | 3.26E-1  | 2.26E-3  | -1.23E+0  | 1.13E+1 |
| PERM                 | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 3.81E+0 | 9.41E-2  | 8.26E+0  | 1.22E+1 | 1.49E-2  | 3.26E-1  | 2.26E-3  | -1.23E+0  | 1.13E+1 |
| PENRE                | MJ           | 1.99E+2 | 8.02E+0  | 1.39E+0  | 2.08E+2 | 1.10E+0  | 7.04E+0  | 6.20E-2  | -1.07E+2  | 1.10E+2 |
| PENRM                | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 1.99E+2 | 8.02E+0  | 1.39E+0  | 2.08E+2 | 1.10E+0  | 7.04E+0  | 6.20E-2  | -1.07E+2  | 1.10E+2 |
| PET                  | MJ           | 2.03E+2 | 8.11E+0  | 9.65E+0  | 2.20E+2 | 1.12E+0  | 7.37E+0  | 6.43E-2  | -1.08E+2  | 1.21E+2 |
| 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           | 5.52E-2 | 9.15E-4  | 2.00E-2  | 7.61E-2 | 1.18E-4  | 3.81E-3  | 7.21E-5  | -2.57E-2  | 5.44E-2 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 2.45E-5 | 1.90E-5 | 1.99E-6 | 4.55E-5 | 2.66E-6 | 1.07E-5 | 7.04E-8 | -2.43E-5 | 3.47E-5 |
| NHWD                              | kg   | 2.23E-1 | 4.75E-1 | 6.11E-3 | 7.04E-1 | 6.44E-2 | 3.24E-1 | 2.58E-1 | -7.75E-2 | 1.27E+0 |
| RWD                               | kg   | 8.77E-5 | 4.96E-5 | 5.54E-6 | 1.43E-4 | 7.07E-6 | 2.53E-5 | 3.82E-7 | -4.13E-5 | 1.34E-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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