

# Environmental Profile

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

Ecochain v3.5.80



Product: 3003315 - PVCU Access Piece GY 110 S/S  
Unit: 1 piece  
Manufacturer: Wavin - PL -Buk - Extra products

PVC external sewage pipes with a solid wall are produced in two classes of circumferential stiffness (SN8, SN4), which enables optimal selection depending on the load conditions. A wide portfolio of system fittings facilitates the construction of many schemes of sewage networks, as well as connections with systems made of other materials. Diameter range DN/OD 110-500mm. The pipes meet the requirements of the PN-EN 1401-1 standard.

LCA standard: EN15804+A2 (2019)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 08-06-2023  
End of validity: 08-06-2028  
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 - PL -Buk - Extra products (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 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

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# Results

| Environmental impact | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|----------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| GWP-total            | kg CO2 eq    | 1.22E+0  | 1.92E-2  | 1.45E-4  | 1.23E+0  | 1.55E-2  | 7.93E-1  | 5.09E-3  | -6.94E-1  | 1.35E+0  |
| GWP-f                | kg CO2 eq    | 1.43E+0  | 1.92E-2  | 1.46E-4  | 1.45E+0  | 1.55E-2  | 5.26E-1  | 5.08E-3  | -7.68E-1  | 1.23E+0  |
| GWP-b                | kg CO2 eq    | -2.20E-1 | 1.16E-5  | -1.54E-6 | -2.20E-1 | 9.43E-6  | 2.67E-1  | 6.35E-6  | 7.44E-2   | 1.22E-1  |
| GWP-luluc            | kg CO2 eq    | 1.71E-3  | 6.79E-6  | 1.49E-7  | 1.72E-3  | 5.50E-6  | 1.94E-4  | 1.33E-7  | -1.09E-3  | 8.33E-4  |
| ODP                  | kg CFC11 eq  | 6.82E-7  | 4.42E-9  | 8.26E-12 | 6.87E-7  | 3.58E-9  | 5.40E-8  | 1.87E-10 | -3.43E-7  | 4.02E-7  |
| AP                   | mol H+ eq    | 6.96E-3  | 1.09E-4  | 1.47E-6  | 7.07E-3  | 8.85E-5  | 9.39E-4  | 4.56E-6  | -3.09E-3  | 5.02E-3  |
| EP-fw                | kg P eq      | 6.65E-5  | 1.58E-7  | 8.24E-9  | 6.66E-5  | 1.28E-7  | 6.51E-6  | 5.99E-9  | -3.25E-5  | 4.08E-5  |
| EP-m                 | kg N eq      | 1.27E-3  | 3.91E-5  | 1.55E-7  | 1.31E-3  | 3.17E-5  | 2.34E-4  | 3.01E-6  | -5.80E-4  | 9.94E-4  |
| EP-T                 | mol N eq     | 1.37E-2  | 4.31E-4  | 1.85E-6  | 1.42E-2  | 3.49E-4  | 2.58E-3  | 1.82E-5  | -6.31E-3  | 1.08E-2  |
| POCP                 | kg NMVOC eq  | 4.53E-3  | 1.23E-4  | 6.28E-7  | 4.65E-3  | 9.97E-5  | 7.69E-4  | 6.26E-6  | -2.10E-3  | 3.42E-3  |
| ADP-mm               | kg Sb eq     | 1.26E-3  | 4.96E-7  | 1.97E-8  | 1.26E-3  | 4.02E-7  | 3.67E-6  | 4.57E-9  | -1.51E-5  | 1.25E-3  |
| ADP-f                | MJ           | 3.46E+1  | 2.94E-1  | 1.36E-3  | 3.48E+1  | 2.38E-1  | 2.50E+0  | 1.37E-2  | -1.78E+1  | 1.97E+1  |
| WDP                  | m3 depriv.   | 2.08E+0  | 9.03E-4  | 5.22E-5  | 2.08E+0  | 7.32E-4  | 9.78E-2  | 9.10E-5  | -1.07E+0  | 1.12E+0  |
| PM                   | disease inc. | 5.34E-8  | 1.73E-9  | 9.08E-12 | 5.51E-8  | 1.40E-9  | 1.16E-8  | 9.41E-11 | -2.74E-8  | 4.08E-8  |
| IR                   | kBq U-235 eq | 7.87E-2  | 1.29E-3  | 1.02E-6  | 8.00E-2  | 1.04E-3  | 8.87E-3  | 6.29E-5  | -3.71E-2  | 5.29E-2  |
| ETP-fw               | CTUe         | 4.46E+1  | 2.39E-1  | 1.21E-2  | 4.48E+1  | 1.94E-1  | 1.91E+1  | 2.11E-1  | -1.60E+1  | 4.84E+1  |
| HTP-c                | CTUh         | 1.27E-9  | 8.51E-12 | 6.17E-13 | 1.28E-9  | 6.89E-12 | 2.86E-10 | 3.79E-13 | -4.78E-10 | 1.09E-9  |
| HTP-nc               | CTUh         | 3.80E-8  | 2.85E-10 | 1.57E-11 | 3.83E-8  | 2.31E-10 | 6.72E-9  | 4.06E-11 | -1.43E-8  | 3.10E-8  |
| SQP                  | Pt           | 2.75E+1  | 2.52E-1  | 2.24E-3  | 2.78E+1  | 2.04E-1  | 1.53E+0  | 3.50E-2  | -3.22E+1  | -2.66E+0 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| PERE                 | MJ           | 8.73E+0  | 4.22E-3  | 2.40E-2  | 8.76E+0  | 3.42E-3  | 1.79E-1  | 5.13E-4  | -5.70E+0  | 3.24E+0  |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PERT                 | MJ           | 8.73E+0  | 4.22E-3  | 2.40E-2  | 8.76E+0  | 3.42E-3  | 1.79E-1  | 5.13E-4  | -5.70E+0  | 3.24E+0  |
| PENRE                | MJ           | 3.71E+1  | 3.12E-1  | 1.44E-3  | 3.74E+1  | 2.53E-1  | 2.66E+0  | 1.45E-2  | -1.92E+1  | 2.11E+1  |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0         | 0        |
| PENRT                | MJ           | 3.71E+1  | 3.12E-1  | 1.44E-3  | 3.74E+1  | 2.53E-1  | 2.66E+0  | 1.45E-2  | -1.92E+1  | 2.11E+1  |
| PET                  | MJ           | 4.58E+1  | 3.17E-1  | 2.55E-2  | 4.61E+1  | 2.56E-1  | 2.84E+0  | 1.50E-2  | -2.49E+1  | 2.43E+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           | 2.50E-2  | 3.33E-5  | 1.46E-6  | 2.50E-2  | 2.70E-5  | 2.74E-3  | 1.67E-5  | -1.31E-2  | 1.47E-2  |

| Output flows and waste categories | Unit | A1      | A2      | A3       | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|----------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.81E-4 | 7.53E-7 | 2.73E-13 | 1.81E-4 | 6.10E-7 | 4.16E-6 | 1.67E-8 | -1.63E-5 | 1.70E-4 |
| NHWD                              | kg   | 1.53E-1 | 1.82E-2 | 1.05E-6  | 1.71E-1 | 1.48E-2 | 9.36E-2 | 6.00E-2 | -6.58E-2 | 2.74E-1 |
| RWD                               | kg   | 7.19E-5 | 2.00E-6 | 1.10E-13 | 7.39E-5 | 1.62E-6 | 9.58E-6 | 8.89E-8 | -3.37E-5 | 5.15E-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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