

# Environmental Profile

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

Ecochain v3.5.80



Product: 3044041 - Basic 425 PP DN250-I-P/E  
Unit: 1 piece  
Manufacturer: Wavin - PL -Buk - Extra products

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



Ensuring a long service life and high efficiency of the sewage network requires fitting with wells ensuring its ventilation, cleaning and inspection. Wavin offers a wide range of manholes and manholes (inspection chambers) of different diameters, different levels of technical sophistication, and thus for different areas of application.



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    | 4.79E+0  | 4.75E-1  | 2.75E-3  | 5.27E+0  | 2.68E-1  | 3.17E+1 | 1.30E-1  | -1.57E+1 | 2.17E+1 |
| GWP-f                | kg CO2 eq    | 2.69E+1  | 4.74E-1  | 2.78E-3  | 2.73E+1  | 2.68E-1  | 9.52E+0 | 1.30E-1  | -1.56E+1 | 2.16E+1 |
| GWP-b                | kg CO2 eq    | -2.21E+1 | 2.88E-4  | -2.93E-5 | -2.21E+1 | 1.63E-4  | 2.22E+1 | 1.14E-4  | -4.18E-2 | 9.55E-2 |
| GWP-luluc            | kg CO2 eq    | 1.91E-2  | 1.68E-4  | 2.84E-6  | 1.92E-2  | 9.48E-5  | 1.53E-3 | 2.24E-6  | -1.30E-2 | 7.85E-3 |
| ODP                  | kg CFC11 eq  | 1.52E-6  | 1.09E-7  | 1.57E-10 | 1.62E-6  | 6.18E-8  | 2.19E-7 | 3.27E-9  | -9.62E-7 | 9.46E-7 |
| AP                   | mol H+ eq    | 1.10E-1  | 2.70E-3  | 2.80E-5  | 1.13E-1  | 1.53E-3  | 9.18E-3 | 7.82E-5  | -5.43E-2 | 6.95E-2 |
| EP-fw                | kg P eq      | 5.46E-4  | 3.90E-6  | 1.57E-7  | 5.51E-4  | 2.21E-6  | 4.44E-5 | 1.02E-7  | -2.79E-4 | 3.19E-4 |
| EP-m                 | kg N eq      | 2.04E-2  | 9.67E-4  | 2.95E-6  | 2.13E-2  | 5.46E-4  | 2.77E-3 | 5.72E-5  | -1.15E-2 | 1.32E-2 |
| EP-T                 | mol N eq     | 2.30E-1  | 1.07E-2  | 3.53E-5  | 2.40E-1  | 6.02E-3  | 3.06E-2 | 3.17E-4  | -1.31E-1 | 1.46E-1 |
| POCP                 | kg NMVOC eq  | 9.97E-2  | 3.05E-3  | 1.19E-5  | 1.03E-1  | 1.72E-3  | 9.45E-3 | 1.19E-4  | -5.40E-2 | 6.00E-2 |
| ADP-mm               | kg Sb eq     | 1.10E-3  | 1.23E-5  | 3.74E-7  | 1.11E-3  | 6.93E-6  | 3.46E-5 | 7.88E-8  | -1.56E-4 | 1.00E-3 |
| ADP-f                | MJ           | 8.43E+2  | 7.28E+0  | 2.58E-2  | 8.51E+2  | 4.11E+0  | 2.74E+1 | 2.39E-1  | -4.41E+2 | 4.42E+2 |
| WDP                  | m3 depriv.   | 1.62E+1  | 2.23E-2  | 9.92E-4  | 1.62E+1  | 1.26E-2  | 5.28E-1 | 1.24E-3  | -7.57E+0 | 9.17E+0 |
| PM                   | disease inc. | 1.28E-6  | 4.28E-8  | 1.73E-10 | 1.32E-6  | 2.42E-8  | 1.45E-7 | 1.64E-9  | -6.85E-7 | 8.07E-7 |
| IR                   | kBq U-235 eq | 7.49E-1  | 3.18E-2  | 1.94E-5  | 7.81E-1  | 1.80E-2  | 8.55E-2 | 1.11E-3  | -3.33E-1 | 5.52E-1 |
| ETP-fw               | CTUe         | 2.78E+2  | 5.91E+0  | 2.30E-1  | 2.84E+2  | 3.34E+0  | 3.31E+1 | 2.19E-1  | -1.37E+2 | 1.85E+2 |
| HTP-c                | CTUh         | 1.79E-8  | 2.10E-10 | 1.17E-11 | 1.82E-8  | 1.19E-10 | 3.84E-9 | 5.90E-12 | -1.01E-8 | 1.20E-8 |
| HTP-nc               | CTUh         | 2.81E-7  | 7.05E-9  | 2.98E-10 | 2.88E-7  | 3.98E-9  | 4.65E-8 | 1.34E-10 | -1.26E-7 | 2.13E-7 |
| SQP                  | Pt           | 1.90E+3  | 6.23E+0  | 4.26E-2  | 1.91E+3  | 3.52E+0  | 2.17E+1 | 6.13E-1  | -1.57E+3 | 3.64E+2 |
| Resource use         | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3      | C4       | D        | Total   |
| PERE                 | MJ           | 3.61E+2  | 1.04E-1  | 4.57E-1  | 3.62E+2  | 5.90E-2  | 1.32E+0 | 9.34E-3  | -2.39E+2 | 1.25E+2 |
| PERM                 | MJ           | 0        | 0        | 0        | 0        | 0        | 0       | 0        | 0        | 0       |
| PERT                 | MJ           | 3.61E+2  | 1.04E-1  | 4.57E-1  | 3.62E+2  | 5.90E-2  | 1.32E+0 | 9.34E-3  | -2.39E+2 | 1.25E+2 |
| PENRE                | MJ           | 9.05E+2  | 7.73E+0  | 2.75E-2  | 9.12E+2  | 4.37E+0  | 2.92E+1 | 2.54E-1  | -4.75E+2 | 4.71E+2 |
| PENRM                | MJ           | 0        | 0        | 0        | 0        | 0        | 0       | 0        | 0        | 0       |
| PENRT                | MJ           | 9.05E+2  | 7.73E+0  | 2.75E-2  | 9.12E+2  | 4.37E+0  | 2.92E+1 | 2.54E-1  | -4.75E+2 | 4.71E+2 |
| PET                  | MJ           | 1.27E+3  | 7.83E+0  | 4.85E-1  | 1.27E+3  | 4.43E+0  | 3.05E+1 | 2.63E-1  | -7.14E+2 | 5.96E+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           | 2.74E-1  | 8.24E-4  | 2.78E-5  | 2.75E-1  | 4.66E-4  | 1.77E-2 | 2.95E-4  | -1.26E-1 | 1.67E-1 |

| Output flows and waste categories | Unit | A1      | A2      | A3       | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|----------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 2.87E-4 | 1.86E-5 | 5.19E-12 | 3.06E-4 | 1.05E-5 | 4.69E-5 | 2.88E-7 | -2.26E-4 | 1.38E-4 |
| NHWD                              | kg   | 2.07E+0 | 4.51E-1 | 2.01E-5  | 2.52E+0 | 2.55E-1 | 1.39E+0 | 1.05E+0 | -1.17E+0 | 4.04E+0 |
| RWD                               | kg   | 8.19E-4 | 4.95E-5 | 2.08E-12 | 8.69E-4 | 2.80E-5 | 1.10E-4 | 1.56E-6 | -3.44E-4 | 6.64E-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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