

Environmental Profile

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

Ecochain v3.5.71



Product: 3036423 - OsmaDrain Bend 11.25° BN 110 SN8 D/S
 Unit: 1 piece
 Manufacturer: Wavin - UK - Chippenham - Verified

LCA standard: EN15804+A2 (2019)
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off
 Externally verified: Yes
 Issue date: 09-02-2023
 End of validity: 09-02-2028
 Verifier: Martijn van Hövell - SGS Search



Wavin OsmaDrain - the definitive & comprehensive PVC-U gravity drainage system for residential, commercial & industrial projects. The source for all types of gravity drainage, sewer installation & pressure pipe systems in any private or public development. One of the UK's most trusted & leading names in plastic drainage systems.

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 - UK - Chippenham - Verified (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 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 | 8.38E-1 | 3.47E-2 | 7.84E-2 | 9.51E-1 | 1.04E-2 | 3.29E-1 | 3.45E-3 | -4.65E-1 | 8.29E-1 |
| GWP-f | kg CO2 eq | 8.34E-1 | 3.47E-2 | 7.64E-2 | 9.45E-1 | 1.04E-2 | 3.29E-1 | 3.45E-3 | -4.62E-1 | 8.26E-1 |
| GWP-b | kg CO2 eq | 3.88E-3 | -2.85E-6 | 1.97E-3 | 5.84E-3 | 6.31E-6 | -3.01E-4 | 4.13E-6 | -2.97E-3 | 2.58E-3 |
| GWP-luluc | kg CO2 eq | 6.61E-4 | 2.11E-5 | 6.44E-5 | 7.46E-4 | 3.68E-6 | 1.19E-4 | 8.68E-8 | -2.71E-4 | 5.98E-4 |
| ODP | kg CFC11 eq | 3.92E-7 | 7.22E-9 | 6.91E-9 | 4.06E-7 | 2.40E-9 | 3.14E-8 | 1.22E-10 | -2.09E-7 | 2.31E-7 |
| AP | mol H+ eq | 3.88E-3 | 9.03E-4 | 4.11E-4 | 5.20E-3 | 5.92E-5 | 5.60E-4 | 2.98E-6 | -1.65E-3 | 4.17E-3 |
| EP-fw | kg P eq | 3.54E-5 | 1.77E-7 | 1.06E-6 | 3.67E-5 | 8.56E-8 | 3.94E-6 | 3.91E-9 | -1.54E-5 | 2.52E-5 |
| EP-m | kg N eq | 6.46E-4 | 2.27E-4 | 8.15E-5 | 9.55E-4 | 2.12E-5 | 1.38E-4 | 2.09E-6 | -2.88E-4 | 8.28E-4 |
| EP-T | mol N eq | 7.11E-3 | 2.53E-3 | 8.86E-4 | 1.05E-2 | 2.34E-4 | 1.52E-3 | 1.19E-5 | -3.07E-3 | 9.22E-3 |
| POCP | kg NMVOC eq | 2.58E-3 | 6.59E-4 | 3.91E-4 | 3.63E-3 | 6.68E-5 | 4.57E-4 | 4.13E-6 | -1.09E-3 | 3.07E-3 |
| ADP-mm | kg Sb eq | 4.32E-4 | 4.13E-7 | 1.86E-6 | 4.34E-4 | 2.69E-7 | 2.20E-6 | 2.99E-9 | -8.56E-6 | 4.28E-4 |
| ADP-f | MJ | 2.22E+1 | 4.65E-1 | 8.44E-1 | 2.35E+1 | 1.60E-1 | 1.54E+0 | 8.95E-3 | -1.13E+1 | 1.39E+1 |
| WDP | m3 depriv. | 1.24E+0 | 8.87E-4 | 2.57E-2 | 1.27E+0 | 4.90E-4 | 5.87E-2 | 6.00E-5 | -6.07E-1 | 7.24E-1 |
| PM | disease inc. | 2.79E-8 | 1.57E-9 | 2.81E-9 | 3.23E-8 | 9.39E-10 | 7.07E-9 | 6.15E-11 | -1.06E-8 | 2.97E-8 |
| IR | kBq U-235 eq | 4.64E-2 | 2.01E-3 | 2.10E-3 | 5.05E-2 | 6.98E-4 | 5.34E-3 | 4.12E-5 | -1.96E-2 | 3.70E-2 |
| ETP-fw | CTUe | 1.68E+1 | 3.21E-1 | 2.19E+0 | 1.93E+1 | 1.30E-1 | 1.11E+1 | 1.22E-1 | -5.82E+0 | 2.48E+1 |
| HTP-c | CTUh | 5.86E-10 | 1.86E-11 | 8.61E-11 | 6.91E-10 | 4.61E-12 | 1.78E-10 | 2.46E-13 | -2.22E-10 | 6.52E-10 |
| HTP-nc | CTUh | 1.84E-8 | 2.98E-10 | 4.75E-9 | 2.34E-8 | 1.54E-10 | 4.04E-9 | 2.40E-11 | -7.64E-9 | 2.00E-8 |
| SQP | Pt | 2.88E+0 | 1.56E-1 | 2.87E-1 | 3.32E+0 | 1.37E-1 | 9.73E-1 | 2.29E-2 | -1.09E+0 | 3.37E+0 |
| Resource use | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
| PERE | MJ | 1.01E+0 | 4.12E-3 | 4.55E+0 | 5.57E+0 | 2.29E-3 | 1.09E-1 | 3.36E-4 | -4.41E-1 | 5.24E+0 |
| PERM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PERT | MJ | 1.01E+0 | 4.12E-3 | 4.55E+0 | 5.57E+0 | 2.29E-3 | 1.09E-1 | 3.36E-4 | -4.41E-1 | 5.24E+0 |
| PENRE | MJ | 2.38E+1 | 4.94E-1 | 8.96E-1 | 2.52E+1 | 1.69E-1 | 1.64E+0 | 9.49E-3 | -1.22E+1 | 1.48E+1 |
| PENRM | MJ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PENRT | MJ | 2.38E+1 | 4.94E-1 | 8.96E-1 | 2.52E+1 | 1.69E-1 | 1.64E+0 | 9.49E-3 | -1.22E+1 | 1.48E+1 |
| PET | MJ | 2.48E+1 | 4.98E-1 | 5.45E+0 | 3.08E+1 | 1.72E-1 | 1.75E+0 | 9.83E-3 | -1.26E+1 | 2.01E+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 | 1.49E-2 | 3.21E-5 | 7.46E-4 | 1.57E-2 | 1.81E-5 | 1.63E-3 | 1.10E-5 | -6.43E-3 | 1.09E-2 |

| Output flows and waste categories | Unit | A1 | A2 | A3 | A1-A3 | C2 | C3 | C4 | D | Total |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD | kg | 6.38E-5 | 6.37E-7 | 7.76E-6 | 7.22E-5 | 4.08E-7 | 2.50E-6 | 1.09E-8 | -8.90E-6 | 6.62E-5 |
| NHWD | kg | 7.68E-2 | 8.78E-3 | 1.59E-3 | 8.72E-2 | 9.89E-3 | 5.95E-2 | 3.95E-2 | -3.22E-2 | 1.64E-1 |
| RWD | kg | 4.31E-5 | 3.22E-6 | 2.06E-6 | 4.84E-5 | 1.09E-6 | 5.78E-6 | 5.82E-8 | -1.73E-5 | 3.80E-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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