

# Environmental Profile

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

Ecochain v3.5.71



Product: 3032512 - OsmaDrain Junction 45° BN 110 SN8 D/S  
Unit: 1 piece  
Manufacturer: Wavin - UK - Chippenham - Verified

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.

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



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                                                                |    |    |     |     | 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    | 1.82E+0 | 7.64E-2  | 1.67E-1  | 2.06E+0 | 2.31E-2  | 6.96E-1  | 7.51E-3  | -1.01E+0  | 1.78E+0 |
| GWP-f                | kg CO2 eq    | 1.80E+0 | 7.63E-2  | 1.63E-1  | 2.04E+0 | 2.31E-2  | 6.96E-1  | 7.51E-3  | -1.00E+0  | 1.77E+0 |
| GWP-b                | kg CO2 eq    | 1.08E-2 | -9.59E-6 | 4.41E-3  | 1.52E-2 | 1.40E-5  | -6.54E-4 | 9.15E-6  | -6.65E-3  | 7.90E-3 |
| GWP-luluc            | kg CO2 eq    | 1.45E-3 | 4.77E-5  | 1.34E-4  | 1.63E-3 | 8.16E-6  | 2.71E-4  | 1.92E-7  | -6.10E-4  | 1.30E-3 |
| ODP                  | kg CFC11 eq  | 9.00E-7 | 1.58E-8  | 1.50E-8  | 9.31E-7 | 5.31E-9  | 7.26E-8  | 2.72E-10 | -4.71E-7  | 5.38E-7 |
| AP                   | mol H+ eq    | 8.38E-3 | 2.08E-3  | 8.68E-4  | 1.13E-2 | 1.31E-4  | 1.27E-3  | 6.60E-6  | -3.66E-3  | 9.07E-3 |
| EP-fw                | kg P eq      | 7.85E-5 | 3.74E-7  | 2.24E-6  | 8.11E-5 | 1.90E-7  | 9.01E-6  | 8.66E-9  | -3.47E-5  | 5.55E-5 |
| EP-m                 | kg N eq      | 1.40E-3 | 5.22E-4  | 1.75E-4  | 2.10E-3 | 4.70E-5  | 3.09E-4  | 4.45E-6  | -6.37E-4  | 1.82E-3 |
| EP-T                 | mol N eq     | 1.54E-2 | 5.80E-3  | 1.89E-3  | 2.30E-2 | 5.18E-4  | 3.41E-3  | 2.63E-5  | -6.78E-3  | 2.02E-2 |
| POCP                 | kg NMVOC eq  | 5.47E-3 | 1.51E-3  | 8.46E-4  | 7.82E-3 | 1.48E-4  | 1.02E-3  | 9.12E-6  | -2.39E-3  | 6.61E-3 |
| ADP-mm               | kg Sb eq     | 9.51E-4 | 8.41E-7  | 3.86E-6  | 9.55E-4 | 5.97E-7  | 4.97E-6  | 6.62E-9  | -1.93E-5  | 9.42E-4 |
| ADP-f                | MJ           | 4.75E+1 | 1.01E+0  | 1.80E+0  | 5.03E+1 | 3.54E-1  | 3.47E+0  | 1.98E-2  | -2.45E+1  | 2.97E+1 |
| WDP                  | m3 depriv.   | 2.81E+0 | 1.85E-3  | 5.53E-2  | 2.87E+0 | 1.09E-3  | 1.35E-1  | 1.32E-4  | -1.36E+0  | 1.64E+0 |
| PM                   | disease inc. | 5.83E-8 | 3.23E-9  | 5.90E-9  | 6.75E-8 | 2.08E-9  | 1.58E-8  | 1.36E-10 | -2.34E-8  | 6.21E-8 |
| IR                   | kBq U-235 eq | 1.00E-1 | 4.37E-3  | 4.54E-3  | 1.09E-1 | 1.55E-3  | 1.21E-2  | 9.12E-5  | -4.39E-2  | 7.91E-2 |
| ETP-fw               | CTUe         | 3.70E+1 | 6.91E-1  | 4.60E+0  | 4.23E+1 | 2.87E-1  | 2.57E+1  | 2.85E-1  | -1.31E+1  | 5.55E+1 |
| HTP-c                | CTUh         | 1.31E-9 | 4.14E-11 | 1.80E-10 | 1.53E-9 | 1.02E-11 | 3.96E-10 | 5.45E-13 | -5.00E-10 | 1.43E-9 |
| HTP-nc               | CTUh         | 4.13E-8 | 6.25E-10 | 1.03E-8  | 5.23E-8 | 3.43E-10 | 9.20E-9  | 5.55E-11 | -1.72E-8  | 4.47E-8 |
| SQP                  | Pt           | 6.12E+0 | 3.01E-1  | 6.04E-1  | 7.03E+0 | 3.03E-1  | 2.17E+0  | 5.07E-2  | -2.43E+0  | 7.12E+0 |
| Resource use         | Unit         | A1      | A2       | A3       | A1-A3   | C2       | C3       | C4       | D         | Total   |
| PERE                 | MJ           | 2.22E+0 | 8.56E-3  | 9.43E+0  | 1.17E+1 | 5.08E-3  | 2.48E-1  | 7.41E-4  | -9.90E-1  | 1.09E+1 |
| PERM                 | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PERT                 | MJ           | 2.22E+0 | 8.56E-3  | 9.43E+0  | 1.17E+1 | 5.08E-3  | 2.48E-1  | 7.41E-4  | -9.90E-1  | 1.09E+1 |
| PENRE                | MJ           | 5.09E+1 | 1.08E+0  | 1.91E+0  | 5.39E+1 | 3.76E-1  | 3.70E+0  | 2.10E-2  | -2.64E+1  | 3.16E+1 |
| PENRM                | MJ           | 0       | 0        | 0        | 0       | 0        | 0        | 0        | 0         | 0       |
| PENRT                | MJ           | 5.09E+1 | 1.08E+0  | 1.91E+0  | 5.39E+1 | 3.76E-1  | 3.70E+0  | 2.10E-2  | -2.64E+1  | 3.16E+1 |
| PET                  | MJ           | 5.32E+1 | 1.09E+0  | 1.13E+1  | 6.56E+1 | 3.81E-1  | 3.94E+0  | 2.18E-2  | -2.74E+1  | 4.25E+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           | 3.25E-2 | 6.67E-5  | 1.60E-3  | 3.42E-2 | 4.01E-5  | 3.71E-3  | 2.43E-5  | -1.44E-2  | 2.36E-2 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 1.43E-4 | 1.30E-6 | 1.73E-5 | 1.62E-4 | 9.05E-7 | 5.63E-6 | 2.42E-8 | -1.96E-5 | 1.49E-4 |
| NHWD                              | kg   | 1.69E-1 | 1.60E-2 | 3.52E-3 | 1.89E-1 | 2.19E-2 | 1.31E-1 | 8.77E-2 | -7.25E-2 | 3.57E-1 |
| RWD                               | kg   | 9.15E-5 | 7.02E-6 | 4.57E-6 | 1.03E-4 | 2.41E-6 | 1.30E-5 | 1.29E-7 | -3.88E-5 | 7.98E-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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