

# Environmental Profile

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

Ecochain v3.5.80



Product: 3003168 - Wadal PVC Tee 88° GY 75x40 S/S/S  
Unit: 1 piece  
Manufacturer: Wavin - NL - Hardenberg - Verified  
Address: J.C. Kellerlaan 3  
7772 SG Hardenberg  
Netherlands

LCA standard: NMD Bepalingsmethode 1.1 (2022)  
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



With Wadal you opt for a tensile-resistant system whose connections cannot slide apart. There is a solution for every indoor drainage situation, thanks to the very extensive range of PVC adhesive fittings and pipes. KOMO certified.

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 - NL - Hardenberg - 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

**ECI** = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3--eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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 SBK set 1 | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
|--------------------------------|--------------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| ECI                            | euro         | 0.04     | 0        | 0        | 0.04     | 0        | 0.01     | 0        | -0.02     | 0.03     |
| ADPE                           | kg Sb-eq     | 3.32E-4  | 1.16E-7  | 5.14E-7  | 3.32E-4  | 1.09E-7  | 9.89E-7  | 1.22E-9  | -3.79E-6  | 3.30E-4  |
| ADPF                           | kg Sb-eq     | 3.88E-3  | 3.34E-5  | 8.83E-5  | 4.01E-3  | 3.07E-5  | 3.41E-4  | 1.69E-6  | -2.13E-3  | 2.25E-3  |
| GWP                            | kg CO2-eq    | 3.25E-1  | 4.54E-3  | 1.68E-2  | 3.47E-1  | 4.18E-3  | 1.17E-1  | 1.15E-3  | -1.83E-1  | 2.86E-1  |
| ODP                            | kg CFC-11-eq | 1.84E-7  | 8.06E-10 | 1.33E-9  | 1.86E-7  | 7.75E-10 | 1.43E-8  | 4.02E-11 | -9.26E-8  | 1.08E-7  |
| POCP                           | kg ethene-eq | 1.86E-4  | 2.74E-6  | 7.28E-6  | 1.96E-4  | 2.51E-6  | 2.70E-5  | 2.97E-7  | -9.49E-5  | 1.31E-4  |
| AP                             | kg SO2-eq    | 1.30E-3  | 2.00E-5  | 7.21E-5  | 1.40E-3  | 1.80E-5  | 1.99E-4  | 9.07E-7  | -6.24E-4  | 9.91E-4  |
| EP                             | kg PO4 3--eq | 1.68E-4  | 3.93E-6  | 9.27E-6  | 1.81E-4  | 3.59E-6  | 3.02E-5  | 3.58E-7  | -8.43E-5  | 1.31E-4  |
| HTP                            | kg 1,4-DB-eq | 1.27E-1  | 1.91E-3  | 7.79E-3  | 1.37E-1  | 1.79E-3  | 5.19E-2  | 9.53E-5  | -5.96E-2  | 1.31E-1  |
| FAETP                          | kg 1,4-DB-eq | 3.84E-3  | 5.59E-5  | 2.66E-4  | 4.17E-3  | 5.23E-5  | 7.90E-4  | 2.93E-5  | -1.67E-3  | 3.37E-3  |
| MAETP                          | kg 1,4-DB-eq | 8.99E+0  | 2.01E-1  | 1.05E+0  | 1.02E+1  | 1.87E-1  | 2.72E+0  | 3.59E-2  | -3.86E+0  | 9.33E+0  |
| TETP                           | kg 1,4-DB-eq | 9.43E-4  | 6.76E-6  | 5.79E-4  | 1.53E-3  | 6.33E-6  | 1.85E-4  | 3.20E-7  | -5.57E-4  | 1.16E-3  |
| Environmental impact           | Unit         | A1       | A2       | A3       | A1-A3    | C2       | C3       | C4       | D         | Total    |
| GWP-total                      | kg CO2 eq    | 3.37E-1  | 4.59E-3  | 1.92E-2  | 3.60E-1  | 4.22E-3  | 1.24E-1  | 1.34E-3  | -1.72E-1  | 3.18E-1  |
| GWP-f                          | kg CO2 eq    | 3.33E-1  | 4.58E-3  | 1.47E-2  | 3.52E-1  | 4.21E-3  | 1.17E-1  | 1.34E-3  | -1.87E-1  | 2.88E-1  |
| GWP-b                          | kg CO2 eq    | 3.32E-3  | 2.12E-6  | 3.04E-3  | 6.36E-3  | 2.56E-6  | 6.90E-3  | 1.69E-6  | 1.48E-2   | 2.81E-2  |
| GWP-luluc                      | kg CO2 eq    | 3.74E-4  | 1.68E-6  | 1.40E-3  | 1.78E-3  | 1.49E-6  | 5.32E-5  | 3.51E-8  | -2.28E-4  | 1.60E-3  |
| ODP                            | kg CFC11 eq  | 1.81E-7  | 1.01E-9  | 1.56E-9  | 1.84E-7  | 9.71E-10 | 1.48E-8  | 4.99E-11 | -9.17E-8  | 1.08E-7  |
| AP                             | mol H+ eq    | 1.59E-3  | 2.66E-5  | 8.99E-5  | 1.70E-3  | 2.40E-5  | 2.50E-4  | 1.21E-6  | -7.55E-4  | 1.22E-3  |
| EP-fw                          | kg P eq      | 1.61E-5  | 4.62E-8  | 2.58E-7  | 1.64E-5  | 3.47E-8  | 1.78E-6  | 1.59E-9  | -8.03E-6  | 1.02E-5  |
| EP-m                           | kg N eq      | 2.84E-4  | 9.37E-6  | 2.12E-5  | 3.15E-4  | 8.58E-6  | 6.11E-5  | 7.52E-7  | -1.35E-4  | 2.51E-4  |
| EP-T                           | mol N eq     | 3.06E-3  | 1.03E-4  | 2.34E-4  | 3.40E-3  | 9.46E-5  | 6.73E-4  | 4.84E-6  | -1.45E-3  | 2.72E-3  |
| POCP                           | kg NMVOC eq  | 9.81E-4  | 2.95E-5  | 6.66E-5  | 1.08E-3  | 2.70E-5  | 2.01E-4  | 1.67E-6  | -4.83E-4  | 8.24E-4  |
| ADP-mm                         | kg Sb eq     | 3.32E-4  | 1.16E-7  | 5.14E-7  | 3.32E-4  | 1.09E-7  | 9.89E-7  | 1.22E-9  | -3.79E-6  | 3.30E-4  |
| ADP-f                          | MJ           | 8.28E+0  | 6.91E-2  | 1.65E-1  | 8.51E+0  | 6.47E-2  | 6.75E-1  | 3.64E-3  | -4.49E+0  | 4.76E+0  |
| WDP                            | m3 depriv.   | 5.49E-1  | 2.47E-4  | 1.28E-1  | 6.77E-1  | 1.98E-4  | 2.68E-2  | 2.36E-5  | -2.83E-1  | 4.21E-1  |
| PM                             | disease inc. | 1.07E-8  | 4.12E-10 | 1.11E-9  | 1.22E-8  | 3.80E-10 | 3.09E-9  | 2.51E-11 | -5.82E-9  | 9.91E-9  |
| IR                             | kBq U-235 eq | 1.89E-2  | 2.90E-4  | 2.62E-4  | 1.95E-2  | 2.83E-4  | 2.39E-3  | 1.67E-5  | -9.36E-3  | 1.28E-2  |
| ETP-fw                         | CTUe         | 1.02E+1  | 6.16E-2  | 3.83E-1  | 1.06E+1  | 5.25E-2  | 5.27E+0  | 5.82E-2  | -3.71E+0  | 1.23E+1  |
| HTP-c                          | CTUh         | 2.76E-10 | 2.00E-12 | 1.33E-11 | 2.91E-10 | 1.87E-12 | 7.50E-11 | 1.01E-13 | -1.04E-10 | 2.64E-10 |
| HTP-nc                         | CTUh         | 9.13E-9  | 6.74E-11 | 4.14E-10 | 9.61E-9  | 6.26E-11 | 1.82E-9  | 1.11E-11 | -3.61E-9  | 7.89E-9  |
| SQP                            | Pt           | 1.72E+0  | 6.00E-2  | 1.23E-2  | 1.80E+0  | 5.53E-2  | 4.11E-1  | 9.33E-3  | -3.34E+0  | -1.07E+0 |

| Resource use                      | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| PERE                              | MJ   | 5.47E-1 | 8.65E-4 | 8.01E-1 | 1.35E+0 | 9.27E-4 | 4.89E-2 | 1.36E-4 | -7.11E-1 | 6.89E-1 |
| PERM                              | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| PERT                              | MJ   | 5.47E-1 | 8.65E-4 | 8.01E-1 | 1.35E+0 | 9.27E-4 | 4.89E-2 | 1.36E-4 | -7.11E-1 | 6.89E-1 |
| PENRE                             | MJ   | 8.88E+0 | 7.34E-2 | 1.78E-1 | 9.13E+0 | 6.86E-2 | 7.18E-1 | 3.87E-3 | -4.83E+0 | 5.09E+0 |
| PENRM                             | MJ   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0        | 0       |
| PENRT                             | MJ   | 8.88E+0 | 7.34E-2 | 1.78E-1 | 9.13E+0 | 6.86E-2 | 7.18E-1 | 3.87E-3 | -4.83E+0 | 5.09E+0 |
| PET                               | MJ   | 9.43E+0 | 7.42E-2 | 9.80E-1 | 1.05E+1 | 6.96E-2 | 7.67E-1 | 4.00E-3 | -5.54E+0 | 5.78E+0 |
| 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   | 6.15E-3 | 8.42E-6 | 3.02E-3 | 9.18E-3 | 7.32E-6 | 7.34E-4 | 4.46E-6 | -3.31E-3 | 6.61E-3 |
| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
| HWD                               | kg   | 4.77E-5 | 1.75E-7 | 1.75E-7 | 4.80E-5 | 1.65E-7 | 1.10E-6 | 4.44E-9 | -3.80E-6 | 4.55E-5 |
| NHWD                              | kg   | 3.47E-2 | 4.38E-3 | 2.70E-4 | 3.93E-2 | 4.01E-3 | 2.43E-2 | 1.60E-2 | -1.51E-2 | 6.86E-2 |
| RWD                               | kg   | 1.65E-5 | 4.54E-7 | 3.24E-7 | 1.72E-5 | 4.40E-7 | 2.56E-6 | 2.37E-8 | -8.31E-6 | 1.19E-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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