

# Environmental Profile

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

Ecochain v3.5.64



Product: 3085042 - SafeTech RCn PotW Pp 25x2.0 L=200  
Unit: 1 piece  
Manufacturer: Wavin - DE - Westeregeln - verified  
Address: Borrweg 10  
39448 Börde-Hakel  
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Contact: <https://www.wavin.com/en-en>

LCA standard: EN15804+A2 (2019)  
Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off  
Externally verified: Yes  
Issue date: 11-08-2022  
End of validity: 11-08-2027  
Verifier: Martijn van Hövell - SGS Search



Wavin SafeTech RC n is a co-extruded PE-100 RC two-layer pipe with protective properties according to PAS 1075. The outer signal layer is about 10% of the standard wall thickness and is colored according to the medium - blue for drinking water, orange for gas and green for waste water.

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 - DE - Westeregeln - 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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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    | 6.07E+1 | 2.55E+0 | 1.25E+0 | 6.45E+1 | 7.96E-1  | 2.59E+1  | 4.40E-1  | -3.99E+1 | 5.17E+1 |
| GWP-f                | kg CO2 eq    | 6.04E+1 | 2.55E+0 | 1.02E+0 | 6.40E+1 | 7.95E-1  | 2.59E+1  | 4.41E-1  | -3.97E+1 | 5.14E+1 |
| GWP-b                | kg CO2 eq    | 2.96E-1 | 1.17E-3 | 1.05E-1 | 4.03E-1 | 4.83E-4  | -3.18E-2 | 3.31E-4  | -1.51E-1 | 2.21E-1 |
| GWP-luluc            | kg CO2 eq    | 1.84E-2 | 9.33E-4 | 1.19E-1 | 1.38E-1 | 2.81E-4  | 4.47E-3  | 6.32E-6  | -9.04E-3 | 1.34E-1 |
| ODP                  | kg CFC11 eq  | 3.13E-6 | 5.62E-7 | 1.34E-7 | 3.83E-6 | 1.83E-7  | 5.81E-7  | 9.40E-9  | -1.91E-6 | 2.69E-6 |
| AP                   | mol H+ eq    | 2.26E-1 | 1.48E-2 | 6.06E-3 | 2.47E-1 | 4.53E-3  | 2.44E-2  | 2.24E-4  | -1.10E-1 | 1.66E-1 |
| EP-fw                | kg P eq      | 1.01E-3 | 2.57E-5 | 2.32E-5 | 1.06E-3 | 6.54E-6  | 1.29E-4  | 2.91E-7  | -4.95E-4 | 6.96E-4 |
| EP-m                 | kg N eq      | 3.78E-2 | 5.20E-3 | 1.24E-3 | 4.42E-2 | 1.62E-3  | 7.11E-3  | 1.59E-4  | -2.01E-2 | 3.30E-2 |
| EP-T                 | mol N eq     | 4.22E-1 | 5.73E-2 | 1.25E-2 | 4.92E-1 | 1.79E-2  | 7.83E-2  | 9.10E-4  | -2.24E-1 | 3.65E-1 |
| POCP                 | kg NMVOC eq  | 2.01E-1 | 1.64E-2 | 3.61E-3 | 2.21E-1 | 5.10E-3  | 2.47E-2  | 3.57E-4  | -1.04E-1 | 1.47E-1 |
| ADP-mm               | kg Sb eq     | 5.89E-4 | 6.45E-5 | 3.02E-5 | 6.84E-4 | 2.06E-5  | 9.67E-5  | 2.25E-7  | -2.57E-4 | 5.44E-4 |
| ADP-f                | MJ           | 2.14E+3 | 3.84E+1 | 1.20E+1 | 2.19E+3 | 1.22E+1  | 7.75E+1  | 6.86E-1  | -1.19E+3 | 1.09E+3 |
| WDP                  | m3 depriv.   | 4.66E+1 | 1.37E-1 | 6.86E+0 | 5.36E+1 | 3.75E-2  | 1.52E+0  | 3.14E-3  | -2.32E+1 | 3.20E+1 |
| PM                   | disease inc. | 2.12E-6 | 2.29E-7 | 5.41E-8 | 2.40E-6 | 7.18E-8  | 4.02E-7  | 4.71E-9  | -8.70E-7 | 2.01E-6 |
| IR                   | kBq U-235 eq | 1.80E+0 | 1.61E-1 | 3.23E-2 | 2.00E+0 | 5.33E-2  | 2.33E-1  | 3.20E-3  | -7.19E-1 | 1.57E+0 |
| ETP-fw               | CTUe         | 3.90E+2 | 3.42E+1 | 2.95E+1 | 4.53E+2 | 9.91E+0  | 8.79E+1  | 6.05E-1  | -1.73E+2 | 3.79E+2 |
| HTP-c                | CTUh         | 1.61E-8 | 1.11E-9 | 1.10E-9 | 1.83E-8 | 3.53E-10 | 1.04E-8  | 1.67E-11 | -8.24E-9 | 2.08E-8 |
| HTP-nc               | CTUh         | 3.81E-7 | 3.74E-8 | 2.82E-8 | 4.47E-7 | 1.18E-8  | 1.32E-7  | 3.85E-10 | -1.84E-7 | 4.06E-7 |
| SQP                  | Pt           | 8.16E+1 | 3.33E+1 | 1.15E+0 | 1.16E+2 | 1.04E+1  | 6.19E+1  | 1.76E+0  | -3.78E+1 | 1.52E+2 |
| Resource use         | Unit         | A1      | A2      | A3      | A1-A3   | C2       | C3       | C4       | D        | Total   |
| PERE                 | MJ           | 3.48E+1 | 4.81E-1 | 6.39E+1 | 9.92E+1 | 1.75E-1  | 3.82E+0  | 2.72E-2  | -1.72E+1 | 8.60E+1 |
| PERM                 | MJ           | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0        | 0       |
| PERT                 | MJ           | 3.48E+1 | 4.81E-1 | 6.39E+1 | 9.92E+1 | 1.75E-1  | 3.82E+0  | 2.72E-2  | -1.72E+1 | 8.60E+1 |
| PENRE                | MJ           | 2.29E+3 | 4.08E+1 | 1.28E+1 | 2.35E+3 | 1.30E+1  | 8.25E+1  | 7.28E-1  | -1.29E+3 | 1.16E+3 |
| PENRM                | MJ           | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0        | 0       |
| PENRT                | MJ           | 2.29E+3 | 4.08E+1 | 1.28E+1 | 2.35E+3 | 1.30E+1  | 8.25E+1  | 7.28E-1  | -1.29E+3 | 1.16E+3 |
| PET                  | MJ           | 2.33E+3 | 4.12E+1 | 7.67E+1 | 2.45E+3 | 1.31E+1  | 8.64E+1  | 7.55E-1  | -1.30E+3 | 1.24E+3 |
| 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           | 7.07E-1 | 4.67E-3 | 1.63E-1 | 8.75E-1 | 1.38E-3  | 4.48E-2  | 8.48E-4  | -3.54E-1 | 5.68E-1 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 2.90E-4 | 9.73E-5 | 1.94E-5 | 4.07E-4 | 3.12E-5 | 1.26E-4 | 8.24E-7 | -3.50E-4 | 2.14E-4 |
| NHWD                              | kg   | 2.00E+0 | 2.43E+0 | 2.44E-2 | 4.46E+0 | 7.56E-1 | 3.81E+0 | 3.02E+0 | -9.71E-1 | 1.11E+1 |
| RWD                               | kg   | 1.94E-3 | 2.52E-4 | 4.63E-5 | 2.23E-3 | 8.30E-5 | 2.96E-4 | 4.49E-6 | -6.68E-4 | 1.95E-3 |
| 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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