

# Environmental Profile

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

Ecochain v3.5.64



Product: 3072748 - SafeTech RCn PotW Pp 140x12.7 L=100 BC  
Unit: 1 piece  
Manufacturer: Wavin - DE - Westeregeln - verified  
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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    | 1.03E+3 | 4.84E+1 | 1.90E+1 | 1.10E+3 | 1.35E+1 | 4.39E+2  | 7.48E+0  | -6.77E+2 | 8.81E+2 |
| GWP-f                | kg CO2 eq    | 1.03E+3 | 4.83E+1 | 1.58E+1 | 1.09E+3 | 1.35E+1 | 4.40E+2  | 7.48E+0  | -6.75E+2 | 8.76E+2 |
| GWP-b                | kg CO2 eq    | 5.05E+0 | 2.03E-2 | 1.50E+0 | 6.56E+0 | 8.20E-3 | -5.40E-1 | 5.62E-3  | -2.56E+0 | 3.48E+0 |
| GWP-luluc            | kg CO2 eq    | 3.11E-1 | 1.85E-2 | 1.67E+0 | 2.00E+0 | 4.78E-3 | 7.59E-2  | 1.07E-4  | -1.54E-1 | 1.93E+0 |
| ODP                  | kg CFC11 eq  | 5.32E-5 | 1.06E-5 | 2.19E-6 | 6.60E-5 | 3.11E-6 | 9.87E-6  | 1.60E-7  | -3.24E-5 | 4.67E-5 |
| AP                   | mol H+ eq    | 3.84E+0 | 3.59E-1 | 9.16E-2 | 4.29E+0 | 7.69E-2 | 4.15E-1  | 3.81E-3  | -1.87E+0 | 2.91E+0 |
| EP-fw                | kg P eq      | 1.71E-2 | 4.69E-4 | 3.53E-4 | 1.79E-2 | 1.11E-4 | 2.19E-3  | 4.94E-6  | -8.41E-3 | 1.18E-2 |
| EP-m                 | kg N eq      | 6.41E-1 | 1.17E-1 | 1.98E-2 | 7.77E-1 | 2.75E-2 | 1.21E-1  | 2.69E-3  | -3.42E-1 | 5.87E-1 |
| EP-T                 | mol N eq     | 7.16E+0 | 1.29E+0 | 1.97E-1 | 8.65E+0 | 3.03E-1 | 1.33E+0  | 1.55E-2  | -3.80E+0 | 6.49E+0 |
| POCP                 | kg NMVOC eq  | 3.42E+0 | 3.60E-1 | 5.68E-2 | 3.83E+0 | 8.67E-2 | 4.20E-1  | 6.06E-3  | -1.77E+0 | 2.57E+0 |
| ADP-mm               | kg Sb eq     | 1.00E-2 | 1.17E-3 | 4.28E-4 | 1.16E-2 | 3.49E-4 | 1.64E-3  | 3.82E-6  | -4.36E-3 | 9.23E-3 |
| ADP-f                | MJ           | 3.63E+4 | 7.22E+2 | 1.89E+2 | 3.72E+4 | 2.07E+2 | 1.32E+3  | 1.17E+1  | -2.02E+4 | 1.85E+4 |
| WDP                  | m3 depriv.   | 7.90E+2 | 2.50E+0 | 9.79E+1 | 8.91E+2 | 6.36E-1 | 2.59E+1  | 5.34E-2  | -3.93E+2 | 5.24E+2 |
| PM                   | disease inc. | 3.59E-5 | 4.17E-6 | 8.62E-7 | 4.09E-5 | 1.22E-6 | 6.83E-6  | 8.01E-8  | -1.48E-5 | 3.43E-5 |
| IR                   | kBq U-235 eq | 3.06E+1 | 3.03E+0 | 5.39E-1 | 3.42E+1 | 9.06E-1 | 3.96E+0  | 5.43E-2  | -1.22E+1 | 2.69E+1 |
| ETP-fw               | CTUe         | 6.61E+3 | 6.34E+2 | 4.37E+2 | 7.68E+3 | 1.68E+2 | 1.49E+3  | 1.03E+1  | -2.94E+3 | 6.41E+3 |
| HTP-c                | CTUh         | 2.73E-7 | 2.13E-8 | 1.62E-8 | 3.10E-7 | 5.99E-9 | 1.77E-7  | 2.83E-10 | -1.40E-7 | 3.54E-7 |
| HTP-nc               | CTUh         | 6.46E-6 | 6.87E-7 | 4.08E-7 | 7.56E-6 | 2.01E-7 | 2.24E-6  | 6.53E-9  | -3.13E-6 | 6.88E-6 |
| SQP                  | Pt           | 1.38E+3 | 5.99E+2 | 1.94E+1 | 2.00E+3 | 1.77E+2 | 1.05E+3  | 2.99E+1  | -6.42E+2 | 2.62E+3 |
| Resource use         | Unit         | A1      | A2      | A3      | A1-A3   | C2      | C3       | C4       | D        | Total   |
| PERE                 | MJ           | 5.91E+2 | 8.81E+0 | 9.02E+2 | 1.50E+3 | 2.97E+0 | 6.49E+1  | 4.61E-1  | -2.93E+2 | 1.28E+3 |
| PERM                 | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PERT                 | MJ           | 5.91E+2 | 8.81E+0 | 9.02E+2 | 1.50E+3 | 2.97E+0 | 6.49E+1  | 4.61E-1  | -2.93E+2 | 1.28E+3 |
| PENRE                | MJ           | 3.89E+4 | 7.67E+2 | 2.02E+2 | 3.99E+4 | 2.20E+2 | 1.40E+3  | 1.24E+1  | -2.18E+4 | 1.97E+4 |
| PENRM                | MJ           | 0       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0       |
| PENRT                | MJ           | 3.89E+4 | 7.67E+2 | 2.02E+2 | 3.99E+4 | 2.20E+2 | 1.40E+3  | 1.24E+1  | -2.18E+4 | 1.97E+4 |
| PET                  | MJ           | 3.95E+4 | 7.76E+2 | 1.10E+3 | 4.14E+4 | 2.23E+2 | 1.47E+3  | 1.28E+1  | -2.21E+4 | 2.10E+4 |
| 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           | 1.20E+1 | 8.52E-2 | 2.33E+0 | 1.44E+1 | 2.35E-2 | 7.60E-1  | 1.44E-2  | -6.01E+0 | 9.20E+0 |

| Output flows and waste categories | Unit | A1      | A2      | A3      | A1-A3   | C2      | C3      | C4      | D        | Total   |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD                               | kg   | 4.91E-3 | 1.77E-3 | 3.29E-4 | 7.00E-3 | 5.30E-4 | 2.14E-3 | 1.40E-5 | -5.95E-3 | 3.74E-3 |
| NHWD                              | kg   | 3.39E+1 | 4.35E+1 | 4.08E-1 | 7.78E+1 | 1.28E+1 | 6.46E+1 | 5.14E+1 | -1.65E+1 | 1.90E+2 |
| RWD                               | kg   | 3.29E-2 | 4.76E-3 | 7.87E-4 | 3.84E-2 | 1.41E-3 | 5.02E-3 | 7.62E-5 | -1.13E-2 | 3.36E-2 |
| 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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