Environmental Profile

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

Ecochain v3.5.64

Product:	3015461 - SafeTech RCn PotW Pp 250x14.8 L=12
Unit:	1 piece
Manufacturer:	Wavin - DE - Westeregeln - verified
Address:	Borrweg 10 39448 Börde-Hakel Germany
Contact:	https://www.wavin.com/en-en

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.

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

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

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 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

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.68E+2	1.26E+1	5.21E+0	2.85E+2	3.51E+0	1.14E+2	1.94E+0	-1.76E+2	2.29E+2
GWP-f	kg CO2 eq	2.66E+2	1.25E+1	4.31E+0	2.83E+2	3.51E+0	1.14E+2	1.94E+0	-1.75E+2	2.28E+2
GWP-b	kg CO2 eq	1.30E+0	5.27E-3	4.26E-1	1.73E+0	2.13E-3	-1.31E-1	1.46E-3	-6.64E-1	9.41E-1
GWP-luluc	kg CO2 eq	8.08E-2	4.79E-3	4.78E-1	5.64E-1	1.24E-3	1.97E-2	2.79E-5	-3.99E-2	5.45E-1
ODP	kg CFC11 eq	1.38E-5	2.76E-6	5.80E-7	1.71E-5	8.08E-7	2.56E-6	4.14E-8	-8.41E-6	1.21E-5
AP	mol H+ eq	9.97E-1	9.32E-2	2.52E-2	1.11E+0	2.00E-2	1.08E-1	9.89E-4	-4.85E-1	7.58E-1
EP-fw	kg P eq	4.44E-3	1.22E-4	9.70E-5	4.66E-3	2.89E-5	5.68E-4	1.28E-6	-2.18E-3	3.07E-3
EP-m	kg N eq	1.67E-1	3.03E-2	5.32E-3	2.02E-1	7.15E-3	3.14E-2	7.00E-4	-8.87E-2	1.53E-1
EP-T	mol N eq	1.86E+0	3.34E-1	5.32E-2	2.25E+0	7.88E-2	3.45E-1	4.01E-3	-9.87E-1	1.69E+0
POCP	kg NMVOC eq	8.87E-1	9.36E-2	1.53E-2	9.96E-1	2.25E-2	1.09E-1	1.57E-3	-4.60E-1	6.69E-1
ADP-mm	kg Sb eq	2.60E-3	3.04E-4	1.22E-4	3.02E-3	9.07E-5	4.26E-4	9.92E-7	-1.13E-3	2.41E-3
ADP-f	MJ	9.42E+3	1.88E+2	5.10E+1	9.66E+3	5.38E+1	3.42E+2	3.03E+0	-5.26E+3	4.80E+3
WDP	m3 depriv.	2.05E+2	6.49E-1	2.78E+1	2.34E+2	1.65E-1	6.71E+0	1.39E-2	-1.02E+2	1.39E+2
PM	disease inc.	9.33E-6	1.08E-6	2.31E-7	1.06E-5	3.17E-7	1.77E-6	2.08E-8	-3.84E-6	8.91E-6
IR	kBq U-235 eq	7.95E+0	7.87E-1	1.41E-1	8.88E+0	2.35E-1	1.03E+0	1.41E-2	-3.17E+0	6.99E+0
ETP-fw	CTUe	1.72E+3	1.65E+2	1.22E+2	2.00E+3	4.37E+1	3.88E+2	2.67E+0	-7.64E+2	1.67E+3
HTP-c	CTUh	7.08E-8	5.54E-9	4.51E-9	8.09E-8	1.56E-9	4.60E-8	7.35E-11	-3.63E-8	9.22E-8
HTP-nc	CTUh	1.68E-6	1.78E-7	1.15E-7	1.97E-6	5.21E-8	5.82E-7	1.70E-9	-8.12E-7	1.80E-6
SQP	Pt	3.60E+2	1.56E+2	5.07E+0	5.20E+2	4.60E+1	2.73E+2	7.77E+0	-1.67E+2	6.80E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.54E+2	2.29E+0	2.58E+2	4.14E+2	7.72E-1	1.69E+1	1.20E-1	-7.61E+1	3.55E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.54E+2	2.29E+0	2.58E+2	4.14E+2	7.72E-1	1.69E+1	1.20E-1	-7.61E+1	3.55E+2
PENRE	MJ	1.01E+4	1.99E+2	5.44E+1	1.04E+4	5.71E+1	3.64E+2	3.21E+0	-5.67E+3	5.11E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.01E+4	1.99E+2	5.44E+1	1.04E+4	5.71E+1	3.64E+2	3.21E+0	-5.67E+3	5.11E+3
PET	MJ	1.03E+4	2.01E+2	3.12E+2	1.08E+4	5.79E+1	3.81E+2	3.33E+0	-5.75E+3	5.47E+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	3.12E+0	2.21E-2	6.61E-1	3.80E+0	6.09E-3	1.97E-1	3.74E-3	-1.56E+0	2.45E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.27E-3	4.59E-4	8.55E-5	1.82E-3	1.38E-4	5.56E-4	3.63E-6	-1.54E-3	9.71E-4
NHWD	kg	8.80E+0	1.13E+1	1.07E-1	2.02E+1	3.34E+0	1.68E+1	1.33E+1	-4.28E+0	4.94E+1
RWD	kg	8.53E-3	1.24E-3	2.04E-4	9.97E-3	3.66E-4	1.30E-3	1.98E-5	-2.95E-3	8.72E-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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