Environmental Profile

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

Ecochain v3.5.64

Product:	3067764 - SiTech+ Branch Reduced STEA 45° 160X110
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

Wavin SiTech+ is a waste water system made of mineral- reinforced polypropylene (PP), which offers increased durability, but more importantly is quiet and easy to install.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
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 - IT - SM Maddalena (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	2.96E+0	4.97E-2	2.20E-1	3.23E+0	3.91E-2	1.76E+0	1.88E-2	-1.82E+0	3.23E+0
GWP-f	kg CO2 eq	3.32E+0	4.96E-2	1.88E-1	3.55E+0	3.91E-2	1.31E+0	1.88E-2	-1.99E+0	2.93E+0
GWP-b	kg CO2 eq	-3.55E-1	3.01E-5	1.59E-2	-3.39E-1	2.37E-5	4.46E-1	1.65E-5	1.76E-1	2.82E-1
GWP-luluc	kg CO2 eq	2.09E-3	1.76E-5	1.59E-2	1.80E-2	1.38E-5	2.22E-4	3.17E-7	-1.79E-3	1.64E-2
ODP	kg CFC11 eq	1.22E-7	1.14E-8	1.88E-8	1.52E-7	9.01E-9	3.12E-8	4.73E-10	-9.32E-8	9.93E-8
AP	mol H+ eq	1.25E-2	2.83E-4	7.58E-4	1.36E-2	2.23E-4	1.30E-3	1.13E-5	-6.23E-3	8.87E-3
EP-fw	kg P eq	6.18E-5	4.08E-7	2.92E-6	6.52E-5	3.22E-7	6.46E-6	1.46E-8	-3.78E-5	3.41E-5
EP-m	kg N eq	2.27E-3	1.01E-4	1.28E-4	2.50E-3	7.97E-5	3.90E-4	8.04E-6	-1.18E-3	1.79E-3
EP-T	mol N eq	2.51E-2	1.11E-3	1.44E-3	2.76E-2	8.78E-4	4.29E-3	4.58E-5	-1.33E-2	1.96E-2
POCP	kg NMVOC eq	1.09E-2	3.19E-4	4.47E-4	1.16E-2	2.51E-4	1.34E-3	1.72E-5	-5.51E-3	7.73E-3
ADP-mm	kg Sb eq	1.14E-4	1.28E-6	4.57E-6	1.20E-4	1.01E-6	5.10E-6	1.13E-8	-1.62E-5	1.10E-4
ADP-f	MJ	1.13E+2	7.62E-1	2.47E+0	1.16E+2	6.00E-1	3.95E+0	3.45E-2	-5.97E+1	6.13E+1
WDP	m3 depriv.	2.23E+0	2.34E-3	8.75E-1	3.11E+0	1.84E-3	7.69E-2	1.58E-4	-1.25E+0	1.94E+0
PM	disease inc.	1.24E-7	4.48E-9	7.59E-9	1.36E-7	3.53E-9	2.10E-8	2.37E-10	-6.58E-8	9.48E-8
IR	kBq U-235 eq	7.91E-2	3.33E-3	2.31E-3	8.47E-2	2.62E-3	1.22E-2	1.61E-4	-4.04E-2	5.93E-2
ETP-fw	CTUe	4.24E+1	6.18E-1	3.90E+0	4.69E+1	4.88E-1	4.86E+0	3.09E-2	-2.23E+1	3.00E+1
HTP-c	CTUh	9.94E-10	2.20E-11	2.08E-10	1.22E-9	1.73E-11	5.31E-10	8.35E-13	-5.40E-10	1.23E-9
HTP-nc	CTUh	2.42E-8	7.37E-10	4.31E-9	2.92E-8	5.81E-10	6.70E-9	1.90E-11	-1.32E-8	2.33E-8
SQP	Pt	4.27E+1	6.52E-1	4.50E-1	4.38E+1	5.14E-1	3.11E+0	8.85E-2	-6.00E+1	-1.25E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.65E+0	1.09E-2	8.55E+0	1.62E+1	8.61E-3	1.91E-1	1.36E-3	-1.05E+1	5.93E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.65E+0	1.09E-2	8.55E+0	1.62E+1	8.61E-3	1.91E-1	1.36E-3	-1.05E+1	5.93E+0
PENRE	MJ	1.21E+2	8.09E-1	2.70E+0	1.25E+2	6.37E-1	4.21E+0	3.66E-2	-6.43E+1	6.55E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.21E+2	8.09E-1	2.70E+0	1.25E+2	6.37E-1	4.21E+0	3.66E-2	-6.43E+1	6.55E+1
PET	MJ	1.29E+2	8.20E-1	1.12E+1	1.41E+2	6.46E-1	4.40E+0	3.80E-2	-7.48E+1	7.15E+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	3.61E-2	8.62E-5	2.08E-2	5.69E-2	6.79E-5	2.47E-3	4.26E-5	-2.19E-2	3.76E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.09E-5	1.95E-6	2.40E-6	2.52E-5	1.54E-6	6.72E-6	4.14E-8	-1.86E-5	1.49E-5
NHWD	kg	1.75E-1	4.72E-2	2.34E-2	2.46E-1	3.72E-2	1.96E-1	1.52E-1	-7.25E-2	5.59E-1
RWD	kg	7.85E-5	5.18E-6	2.56E-6	8.62E-5	4.08E-6	1.56E-5	2.26E-7	-3.80E-5	6.81E-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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