Environmental Profile

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

Ecochain v3.5.64

Product:	3067747 - SiTech+ Branch STEA 45° 32X32
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	1.36E-1	2.04E-3	8.85E-3	1.47E-1	1.66E-3	8.34E-2	8.13E-4	-7.62E-2	1.57E-1
GWP-f	kg CO2 eq	1.51E-1	2.04E-3	7.58E-3	1.60E-1	1.66E-3	6.31E-2	8.14E-4	-8.87E-2	1.37E-1
GWP-b	kg CO2 eq	-1.43E-2	1.24E-6	6.40E-4	-1.36E-2	1.01E-6	2.03E-2	7.19E-7	1.26E-2	1.92E-2
GWP-luluc	kg CO2 eq	1.23E-4	7.21E-7	6.40E-4	7.63E-4	5.88E-7	9.37E-6	1.38E-8	-1.11E-4	6.62E-4
ODP	kg CFC11 eq	7.76E-9	4.70E-10	7.60E-10	8.99E-9	3.83E-10	1.39E-9	2.05E-11	-4.64E-9	6.14E-9
AP	mol H+ eq	5.94E-4	1.16E-5	3.06E-5	6.36E-4	9.46E-6	5.78E-5	4.91E-7	-2.86E-4	4.18E-4
EP-fw	kg P eq	3.18E-6	1.68E-8	1.18E-7	3.31E-6	1.37E-8	2.75E-7	6.36E-10	-2.03E-6	1.57E-6
EP-m	kg N eq	1.11E-4	4.15E-6	5.16E-6	1.20E-4	3.38E-6	1.76E-5	3.79E-7	-5.56E-5	8.57E-5
EP-T	mol N eq	1.21E-3	4.58E-5	5.80E-5	1.31E-3	3.73E-5	1.93E-4	1.99E-6	-6.25E-4	9.21E-4
POCP	kg NMVOC eq	5.08E-4	1.31E-5	1.80E-5	5.39E-4	1.07E-5	6.00E-5	7.45E-7	-2.48E-4	3.63E-4
ADP-mm	kg Sb eq	8.14E-6	5.27E-8	1.84E-7	8.38E-6	4.30E-8	2.24E-7	4.92E-10	-8.16E-7	7.83E-6
ADP-f	MJ	5.00E+0	3.13E-2	9.97E-2	5.13E+0	2.55E-2	1.70E-1	1.50E-3	-2.58E+0	2.75E+0
WDP	m3 depriv.	9.97E-2	9.60E-5	3.53E-2	1.35E-1	7.82E-5	3.33E-3	6.87E-6	-5.94E-2	7.90E-2
PM	disease inc.	6.12E-9	1.84E-10	3.06E-10	6.61E-9	1.50E-10	9.15E-10	1.03E-11	-3.24E-9	4.45E-9
IR	kBq U-235 eq	4.27E-3	1.37E-4	9.30E-5	4.50E-3	1.11E-4	5.29E-4	6.99E-6	-2.04E-3	3.11E-3
ETP-fw	CTUe	2.60E+0	2.54E-2	1.57E-1	2.78E+0	2.07E-2	2.25E-1	1.43E-3	-1.33E+0	1.70E+0
HTP-c	CTUh	4.80E-11	9.04E-13	8.39E-12	5.73E-11	7.36E-13	2.28E-11	3.65E-14	-2.56E-11	5.54E-11
HTP-nc	CTUh	1.18E-9	3.03E-11	1.74E-10	1.39E-9	2.47E-11	2.92E-10	8.48E-13	-6.55E-10	1.05E-9
SQP	Pt	1.99E+0	2.68E-2	1.82E-2	2.03E+0	2.18E-2	1.32E-1	3.85E-3	-3.40E+0	-1.21E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.64E-1	4.49E-4	3.45E-1	7.09E-1	3.66E-4	8.14E-3	5.94E-5	-6.01E-1	1.17E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.64E-1	4.49E-4	3.45E-1	7.09E-1	3.66E-4	8.14E-3	5.94E-5	-6.01E-1	1.17E-1
PENRE	MJ	5.36E+0	3.32E-2	1.09E-1	5.51E+0	2.71E-2	1.81E-1	1.59E-3	-2.78E+0	2.94E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.36E+0	3.32E-2	1.09E-1	5.51E+0	2.71E-2	1.81E-1	1.59E-3	-2.78E+0	2.94E+0
PET	MJ	5.73E+0	3.37E-2	4.54E-1	6.21E+0	2.74E-2	1.89E-1	1.65E-3	-3.38E+0	3.05E+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	1.70E-3	3.54E-6	8.38E-4	2.54E-3	2.88E-6	1.15E-4	1.85E-6	-1.11E-3	1.55E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.10E-6	8.00E-8	9.69E-8	1.28E-6	6.52E-8	2.99E-7	1.80E-9	-9.04E-7	7.42E-7
NHWD	kg	8.95E-3	1.94E-3	9.44E-4	1.18E-2	1.58E-3	8.52E-3	6.61E-3	-3.43E-3	2.51E-2
RWD	kg	4.51E-6	2.13E-7	1.03E-7	4.83E-6	1.73E-7	6.81E-7	9.81E-9	-1.94E-6	3.76E-6
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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777