Environmental Profile

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

Ecochain v3.5.64

Product:	3067749 - SiTech+ Branch STEA 45° 40X40
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	1.98E-1	4.97E-3	1.31E-2	2.16E-1	2.45E-3	1.37E-1	1.22E-3	-1.16E-1	2.41E-1
GWP-f	kg CO2 eq	2.27E-1	4.96E-3	1.12E-2	2.43E-1	2.45E-3	1.00E-1	1.22E-3	-1.32E-1	2.15E-1
GWP-b	kg CO2 eq	-2.90E-2	3.01E-6	9.44E-4	-2.80E-2	1.49E-6	3.65E-2	1.08E-6	1.60E-2	2.45E-2
GWP-luluc	kg CO2 eq	1.77E-4	1.76E-6	9.43E-4	1.12E-3	8.68E-7	1.36E-5	2.08E-8	-1.50E-4	9.87E-4
ODP	kg CFC11 eq	1.33E-8	1.14E-9	1.12E-9	1.56E-8	5.65E-10	2.01E-9	3.08E-11	-7.12E-9	1.11E-8
AP	mol H+ eq	9.12E-4	2.83E-5	4.51E-5	9.85E-4	1.40E-5	8.46E-5	7.37E-7	-4.15E-4	6.69E-4
EP-fw	kg P eq	4.85E-6	4.08E-8	1.74E-7	5.06E-6	2.02E-8	4.01E-7	9.57E-10	-2.82E-6	2.66E-6
EP-m	kg N eq	1.67E-4	1.01E-5	7.61E-6	1.85E-4	5.00E-6	2.58E-5	5.98E-7	-8.12E-5	1.35E-4
EP-T	mol N eq	1.84E-3	1.11E-4	8.55E-5	2.04E-3	5.51E-5	2.83E-4	2.99E-6	-9.13E-4	1.47E-3
POCP	kg NMVOC eq	7.81E-4	3.19E-5	2.66E-5	8.39E-4	1.57E-5	8.75E-5	1.12E-6	-3.65E-4	5.79E-4
ADP-mm	kg Sb eq	1.53E-5	1.28E-7	2.72E-7	1.57E-5	6.34E-8	3.23E-7	7.38E-10	-1.30E-6	1.48E-5
ADP-f	MJ	7.50E+0	7.62E-2	1.47E-1	7.73E+0	3.76E-2	2.47E-1	2.25E-3	-3.80E+0	4.21E+0
WDP	m3 depriv.	1.50E-1	2.34E-4	5.20E-2	2.02E-1	1.16E-4	4.93E-3	1.03E-5	-8.37E-2	1.24E-1
PM	disease inc.	9.53E-9	4.48E-10	4.51E-10	1.04E-8	2.21E-10	1.32E-9	1.55E-11	-4.66E-9	7.33E-9
IR	kBq U-235 eq	6.96E-3	3.33E-4	1.37E-4	7.43E-3	1.65E-4	7.67E-4	1.05E-5	-2.92E-3	5.45E-3
ETP-fw	CTUe	3.73E+0	6.19E-2	2.32E-1	4.02E+0	3.06E-2	3.38E-1	2.23E-3	-1.80E+0	2.59E+0
HTP-c	CTUh	7.70E-11	2.20E-12	1.24E-11	9.16E-11	1.09E-12	3.31E-11	5.49E-14	-3.91E-11	8.67E-11
HTP-nc	CTUh	1.83E-9	7.37E-11	2.57E-10	2.16E-9	3.64E-11	4.28E-10	1.29E-12	-9.37E-10	1.69E-9
SQP	Pt	3.52E+0	6.52E-2	2.68E-2	3.62E+0	3.22E-2	1.92E-1	5.77E-3	-5.10E+0	-1.26E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.18E-1	1.09E-3	5.09E-1	1.13E+0	5.40E-4	1.18E-2	8.97E-5	-8.85E-1	2.55E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.18E-1	1.09E-3	5.09E-1	1.13E+0	5.40E-4	1.18E-2	8.97E-5	-8.85E-1	2.55E-1
PENRE	MJ	8.05E+0	8.09E-2	1.60E-1	8.29E+0	4.00E-2	2.63E-1	2.39E-3	-4.10E+0	4.49E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.05E+0	8.09E-2	1.60E-1	8.29E+0	4.00E-2	2.63E-1	2.39E-3	-4.10E+0	4.49E+0
PET	MJ	8.67E+0	8.20E-2	6.69E-1	9.42E+0	4.05E-2	2.75E-1	2.48E-3	-4.98E+0	4.75E+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	2.60E-3	8.62E-6	1.24E-3	3.84E-3	4.26E-6	1.78E-4	2.78E-6	-1.54E-3	2.49E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.77E-6	1.95E-7	1.43E-7	2.11E-6	9.63E-8	4.37E-7	2.70E-9	-1.40E-6	1.24E-6
NHWD	kg	1.39E-2	4.72E-3	1.39E-3	2.00E-2	2.33E-3	1.26E-2	9.91E-3	-5.16E-3	3.96E-2
RWD	kg	7.60E-6	5.18E-7	1.53E-7	8.27E-6	2.56E-7	9.85E-7	1.47E-8	-2.80E-6	6.72E-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

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