Environmental Profile

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

Ecochain v3.5.64

Product:	3067708 - SiTech+ Bend STB 15° 32
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	6.40E-2	1.14E-3	4.50E-3	6.97E-2	8.57E-4	4.99E-2	4.19E-4	-4.03E-2	8.05E-2
GWP-f	kg CO2 eq	7.85E-2	1.14E-3	3.85E-3	8.35E-2	8.56E-4	3.24E-2	4.19E-4	-4.65E-2	7.06E-2
GWP-b	kg CO2 eq	-1.45E-2	6.92E-7	3.25E-4	-1.42E-2	5.20E-7	1.75E-2	3.70E-7	6.28E-3	9.60E-3
GWP-luluc	kg CO2 eq	6.57E-5	4.04E-7	3.25E-4	3.91E-4	3.03E-7	4.85E-6	7.12E-9	-5.92E-5	3.37E-4
ODP	kg CFC11 eq	4.05E-9	2.63E-10	3.87E-10	4.70E-9	1.97E-10	7.21E-10	1.06E-11	-2.48E-9	3.15E-9
AP	mol H+ eq	3.11E-4	6.50E-6	1.55E-5	3.33E-4	4.88E-6	3.00E-5	2.53E-7	-1.53E-4	2.16E-4
EP-fw	kg P eq	1.67E-6	9.38E-9	5.99E-8	1.74E-6	7.05E-9	1.43E-7	3.28E-10	-1.08E-6	8.15E-7
EP-m	kg N eq	5.84E-5	2.32E-6	2.62E-6	6.34E-5	1.75E-6	9.14E-6	1.94E-7	-3.02E-5	4.43E-5
EP-T	mol N eq	6.40E-4	2.56E-5	2.95E-5	6.96E-4	1.92E-5	1.01E-4	1.03E-6	-3.40E-4	4.76E-4
POCP	kg NMVOC eq	2.69E-4	7.32E-6	9.16E-6	2.85E-4	5.50E-6	3.12E-5	3.84E-7	-1.34E-4	1.88E-4
ADP-mm	kg Sb eq	4.11E-6	2.95E-8	9.38E-8	4.24E-6	2.22E-8	1.16E-7	2.53E-10	-4.33E-7	3.94E-6
ADP-f	MJ	2.59E+0	1.75E-2	5.07E-2	2.66E+0	1.31E-2	8.81E-2	7.72E-4	-1.34E+0	1.42E+0
WDP	m3 depriv.	5.16E-2	5.37E-5	1.79E-2	6.96E-2	4.03E-5	1.72E-3	3.54E-6	-3.07E-2	4.07E-2
PM	disease inc.	3.28E-9	1.03E-10	1.56E-10	3.54E-9	7.73E-11	4.75E-10	5.31E-12	-1.78E-9	2.31E-9
IR	kBq U-235 eq	2.23E-3	7.65E-5	4.73E-5	2.35E-3	5.75E-5	2.75E-4	3.60E-6	-1.08E-3	1.60E-3
ETP-fw	CTUe	1.34E+0	1.42E-2	8.00E-2	1.43E+0	1.07E-2	1.16E-1	7.34E-4	-6.97E-1	8.61E-1
HTP-c	CTUh	2.76E-11	5.06E-13	4.26E-12	3.24E-11	3.80E-13	1.19E-11	1.88E-14	-1.56E-11	2.91E-11
HTP-nc	CTUh	6.28E-10	1.69E-11	8.85E-11	7.34E-10	1.27E-11	1.51E-10	4.36E-13	-3.55E-10	5.43E-10
SQP	Pt	1.61E+0	1.50E-2	9.24E-3	1.63E+0	1.12E-2	6.85E-2	1.98E-3	-2.22E+0	-5.00E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.72E-1	2.51E-4	1.75E-1	4.48E-1	1.89E-4	4.21E-3	3.06E-5	-3.78E-1	7.40E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.72E-1	2.51E-4	1.75E-1	4.48E-1	1.89E-4	4.21E-3	3.06E-5	-3.78E-1	7.40E-2
PENRE	MJ	2.78E+0	1.86E-2	5.53E-2	2.85E+0	1.40E-2	9.39E-2	8.20E-4	-1.45E+0	1.51E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.78E+0	1.86E-2	5.53E-2	2.85E+0	1.40E-2	9.39E-2	8.20E-4	-1.45E+0	1.51E+0
PET	MJ	3.05E+0	1.88E-2	2.31E-1	3.30E+0	1.41E-2	9.81E-2	8.50E-4	-1.83E+0	1.59E+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	8.81E-4	1.98E-6	4.26E-4	1.31E-3	1.49E-6	5.93E-5	9.55E-7	-5.73E-4	7.98E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.08E-7	4.48E-8	4.93E-8	7.02E-7	3.36E-8	1.55E-7	9.27E-10	-5.01E-7	3.91E-7
NHWD	kg	4.89E-3	1.08E-3	4.80E-4	6.45E-3	8.15E-4	4.42E-3	3.40E-3	-2.03E-3	1.31E-2
RWD	kg	2.36E-6	1.19E-7	5.26E-8	2.53E-6	8.94E-8	3.54E-7	5.05E-9	-1.04E-6	1.94E-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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