Environmental Profile

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

Ecochain v3.5.64

Product:	3067724 - SiTech+ Bend STB 45° 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	6.81E-2	1.19E-3	4.95E-3	7.42E-2	9.10E-4	5.14E-2	4.44E-4	-4.27E-2	8.42E-2
GWP-f	kg CO2 eq	8.25E-2	1.19E-3	4.24E-3	8.79E-2	9.09E-4	3.39E-2	4.44E-4	-4.89E-2	7.42E-2
GWP-b	kg CO2 eq	-1.45E-2	7.23E-7	3.58E-4	-1.41E-2	5.52E-7	1.75E-2	3.92E-7	6.27E-3	9.64E-3
GWP-luluc	kg CO2 eq	6.67E-5	4.21E-7	3.58E-4	4.25E-4	3.22E-7	5.15E-6	7.53E-9	-5.96E-5	3.71E-4
ODP	kg CFC11 eq	4.12E-9	2.74E-10	4.25E-10	4.82E-9	2.10E-10	7.59E-10	1.12E-11	-2.57E-9	3.23E-9
AP	mol H+ eq	3.25E-4	6.78E-6	1.71E-5	3.49E-4	5.18E-6	3.16E-5	2.68E-7	-1.60E-4	2.27E-4
EP-fw	kg P eq	1.73E-6	9.79E-9	6.58E-8	1.80E-6	7.48E-9	1.51E-7	3.47E-10	-1.10E-6	8.61E-7
EP-m	kg N eq	6.08E-5	2.43E-6	2.89E-6	6.61E-5	1.85E-6	9.61E-6	2.04E-7	-3.14E-5	4.64E-5
EP-T	mol N eq	6.67E-4	2.67E-5	3.24E-5	7.26E-4	2.04E-5	1.06E-4	1.09E-6	-3.53E-4	5.00E-4
POCP	kg NMVOC eq	2.81E-4	7.64E-6	1.01E-5	2.99E-4	5.84E-6	3.28E-5	4.07E-7	-1.41E-4	1.97E-4
ADP-mm	kg Sb eq	4.17E-6	3.08E-8	1.03E-7	4.31E-6	2.35E-8	1.22E-7	2.68E-10	-4.49E-7	4.01E-6
ADP-f	MJ	2.74E+0	1.83E-2	5.58E-2	2.81E+0	1.40E-2	9.32E-2	8.18E-4	-1.42E+0	1.50E+0
WDP	m3 depriv.	5.44E-2	5.61E-5	1.97E-2	7.42E-2	4.28E-5	1.82E-3	3.75E-6	-3.20E-2	4.41E-2
PM	disease inc.	3.40E-9	1.07E-10	1.71E-10	3.68E-9	8.21E-11	5.01E-10	5.62E-12	-1.84E-9	2.43E-9
IR	kBq U-235 eq	2.30E-3	7.98E-5	5.20E-5	2.43E-3	6.10E-5	2.91E-4	3.81E-6	-1.12E-3	1.67E-3
ETP-fw	CTUe	1.36E+0	1.48E-2	8.80E-2	1.46E+0	1.13E-2	1.22E-1	7.72E-4	-7.07E-1	8.87E-1
HTP-c	CTUh	2.86E-11	5.28E-13	4.69E-12	3.38E-11	4.03E-13	1.26E-11	1.99E-14	-1.60E-11	3.08E-11
HTP-nc	CTUh	6.54E-10	1.77E-11	9.73E-11	7.69E-10	1.35E-11	1.60E-10	4.61E-13	-3.67E-10	5.76E-10
SQP	Pt	1.62E+0	1.56E-2	1.02E-2	1.64E+0	1.19E-2	7.26E-2	2.10E-3	-2.22E+0	-4.90E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.74E-1	2.62E-4	1.93E-1	4.67E-1	2.00E-4	4.47E-3	3.24E-5	-3.79E-1	9.29E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.74E-1	2.62E-4	1.93E-1	4.67E-1	2.00E-4	4.47E-3	3.24E-5	-3.79E-1	9.29E-2
PENRE	MJ	2.94E+0	1.94E-2	6.08E-2	3.02E+0	1.48E-2	9.93E-2	8.68E-4	-1.53E+0	1.60E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.94E+0	1.94E-2	6.08E-2	3.02E+0	1.48E-2	9.93E-2	8.68E-4	-1.53E+0	1.60E+0
PET	MJ	3.21E+0	1.97E-2	2.54E-1	3.48E+0	1.50E-2	1.04E-1	9.00E-4	-1.91E+0	1.69E+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	9.23E-4	2.07E-6	4.69E-4	1.39E-3	1.58E-6	6.23E-5	1.01E-6	-5.93E-4	8.66E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.26E-7	4.67E-8	5.42E-8	7.27E-7	3.57E-8	1.63E-7	9.82E-10	-5.18E-7	4.08E-7
NHWD	kg	5.06E-3	1.13E-3	5.28E-4	6.72E-3	8.65E-4	4.67E-3	3.60E-3	-2.09E-3	1.38E-2
RWD	kg	2.42E-6	1.24E-7	5.79E-8	2.60E-6	9.49E-8	3.74E-7	5.35E-9	-1.07E-6	2.00E-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