Environmental Profile

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

Ecochain v3.5.64

Product:	3067725 - SiTech+ Bend STB 45° 40
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	1.06E-1	2.57E-3	6.90E-3	1.16E-1	1.32E-3	7.11E-2	6.52E-4	-6.24E-2	1.26E-1
GWP-f	kg CO2 eq	1.21E-1	2.57E-3	5.91E-3	1.29E-1	1.32E-3	5.28E-2	6.52E-4	-7.03E-2	1.14E-1
GWP-b	kg CO2 eq	-1.45E-2	1.56E-6	4.99E-4	-1.40E-2	8.00E-7	1.83E-2	5.78E-7	8.00E-3	1.23E-2
GWP-luluc	kg CO2 eq	9.03E-5	9.09E-7	4.99E-4	5.90E-4	4.67E-7	7.33E-6	1.11E-8	-7.57E-5	5.22E-4
ODP	kg CFC11 eq	6.78E-9	5.92E-10	5.93E-10	7.97E-9	3.04E-10	1.07E-9	1.65E-11	-3.72E-9	5.65E-9
AP	mol H+ eq	4.80E-4	1.46E-5	2.38E-5	5.19E-4	7.51E-6	4.51E-5	3.94E-7	-2.20E-4	3.52E-4
EP-fw	kg P eq	2.52E-6	2.11E-8	9.18E-8	2.64E-6	1.08E-8	2.15E-7	5.12E-10	-1.46E-6	1.40E-6
EP-m	kg N eq	8.76E-5	5.23E-6	4.02E-6	9.69E-5	2.69E-6	1.37E-5	3.16E-7	-4.27E-5	7.09E-5
EP-T	mol N eq	9.65E-4	5.77E-5	4.52E-5	1.07E-3	2.96E-5	1.51E-4	1.60E-6	-4.80E-4	7.70E-4
POCP	kg NMVOC eq	4.12E-4	1.65E-5	1.40E-5	4.42E-4	8.46E-6	4.66E-5	5.98E-7	-1.93E-4	3.05E-4
ADP-mm	kg Sb eq	7.74E-6	6.64E-8	1.44E-7	7.95E-6	3.41E-8	1.73E-7	3.95E-10	-6.80E-7	7.48E-6
ADP-f	MJ	4.00E+0	3.94E-2	7.77E-2	4.12E+0	2.02E-2	1.32E-1	1.20E-3	-2.04E+0	2.24E+0
WDP	m3 depriv.	7.99E-2	1.21E-4	2.75E-2	1.08E-1	6.21E-5	2.64E-3	5.52E-6	-4.42E-2	6.61E-2
PM	disease inc.	4.98E-9	2.32E-10	2.39E-10	5.45E-9	1.19E-10	7.09E-10	8.27E-12	-2.43E-9	3.86E-9
IR	kBq U-235 eq	3.60E-3	1.72E-4	7.25E-5	3.85E-3	8.84E-5	4.11E-4	5.62E-6	-1.52E-3	2.83E-3
ETP-fw	CTUe	1.90E+0	3.20E-2	1.23E-1	2.05E+0	1.64E-2	1.79E-1	1.18E-3	-9.17E-1	1.33E+0
HTP-c	CTUh	4.00E-11	1.14E-12	6.54E-12	4.77E-11	5.85E-13	1.77E-11	2.93E-14	-2.03E-11	4.58E-11
HTP-nc	CTUh	9.58E-10	3.82E-11	1.36E-10	1.13E-9	1.96E-11	2.29E-10	6.90E-13	-4.89E-10	8.92E-10
SQP	Pt	1.77E+0	3.37E-2	1.42E-2	1.82E+0	1.73E-2	1.03E-1	3.09E-3	-2.56E+0	-6.14E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.13E-1	5.66E-4	2.69E-1	5.82E-1	2.90E-4	6.37E-3	4.79E-5	-4.44E-1	1.44E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.13E-1	5.66E-4	2.69E-1	5.82E-1	2.90E-4	6.37E-3	4.79E-5	-4.44E-1	1.44E-1
PENRE	MJ	4.29E+0	4.18E-2	8.48E-2	4.42E+0	2.15E-2	1.41E-1	1.28E-3	-2.20E+0	2.39E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.29E+0	4.18E-2	8.48E-2	4.42E+0	2.15E-2	1.41E-1	1.28E-3	-2.20E+0	2.39E+0
PET	MJ	4.61E+0	4.24E-2	3.54E-1	5.00E+0	2.18E-2	1.47E-1	1.33E-3	-2.64E+0	2.53E+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	1.37E-3	4.46E-6	6.53E-4	2.03E-3	2.29E-6	9.43E-5	1.49E-6	-8.07E-4	1.32E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.12E-7	1.01E-7	7.55E-8	1.09E-6	5.17E-8	2.33E-7	1.45E-9	-7.31E-7	6.43E-7
NHWD	kg	7.20E-3	2.44E-3	7.36E-4	1.04E-2	1.25E-3	6.71E-3	5.31E-3	-2.69E-3	2.10E-2
RWD	kg	3.91E-6	2.68E-7	8.06E-8	4.25E-6	1.38E-7	5.27E-7	7.88E-9	-1.46E-6	3.47E-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

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