Environmental Profile

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

Ecochain v3.5.64

Product:	3067739 - SiTech+ Bend STB 87,5° 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	7.61E-2	1.29E-3	5.40E-3	8.28E-2	1.02E-3	5.44E-2	4.94E-4	-4.76E-2	9.11E-2
GWP-f	kg CO2 eq	9.05E-2	1.29E-3	4.62E-3	9.64E-2	1.01E-3	3.70E-2	4.94E-4	-5.38E-2	8.10E-2
GWP-b	kg CO2 eq	-1.44E-2	7.83E-7	3.90E-4	-1.40E-2	6.16E-7	1.75E-2	4.35E-7	6.25E-3	9.69E-3
GWP-luluc	kg CO2 eq	6.87E-5	4.56E-7	3.90E-4	4.59E-4	3.59E-7	5.74E-6	8.37E-9	-6.06E-5	4.05E-4
ODP	kg CFC11 eq	4.25E-9	2.97E-10	4.64E-10	5.01E-9	2.34E-10	8.36E-10	1.24E-11	-2.75E-9	3.34E-9
AP	mol H+ eq	3.53E-4	7.34E-6	1.86E-5	3.79E-4	5.78E-6	3.49E-5	2.97E-7	-1.73E-4	2.47E-4
EP-fw	kg P eq	1.84E-6	1.06E-8	7.18E-8	1.93E-6	8.35E-9	1.68E-7	3.85E-10	-1.16E-6	9.46E-7
EP-m	kg N eq	6.55E-5	2.63E-6	3.15E-6	7.12E-5	2.07E-6	1.05E-5	2.23E-7	-3.38E-5	5.03E-5
EP-T	mol N eq	7.19E-4	2.89E-5	3.54E-5	7.84E-4	2.28E-5	1.16E-4	1.21E-6	-3.80E-4	5.43E-4
POCP	kg NMVOC eq	3.06E-4	8.28E-6	1.10E-5	3.25E-4	6.51E-6	3.61E-5	4.52E-7	-1.53E-4	2.15E-4
ADP-mm	kg Sb eq	4.27E-6	3.33E-8	1.13E-7	4.42E-6	2.62E-8	1.35E-7	2.98E-10	-4.81E-7	4.10E-6
ADP-f	MJ	3.02E+0	1.98E-2	6.08E-2	3.11E+0	1.56E-2	1.03E-1	9.09E-4	-1.58E+0	1.65E+0
WDP	m3 depriv.	6.00E-2	6.07E-5	2.15E-2	8.16E-2	4.78E-5	2.02E-3	4.16E-6	-3.47E-2	4.90E-2
PM	disease inc.	3.65E-9	1.16E-10	1.87E-10	3.95E-9	9.16E-11	5.55E-10	6.24E-12	-1.95E-9	2.65E-9
IR	kBq U-235 eq	2.44E-3	8.65E-5	5.68E-5	2.58E-3	6.81E-5	3.22E-4	4.23E-6	-1.19E-3	1.79E-3
ETP-fw	CTUe	1.40E+0	1.61E-2	9.60E-2	1.51E+0	1.26E-2	1.33E-1	8.48E-4	-7.26E-1	9.29E-1
HTP-c	CTUh	3.03E-11	5.72E-13	5.12E-12	3.60E-11	4.50E-13	1.39E-11	2.21E-14	-1.69E-11	3.36E-11
HTP-nc	CTUh	7.03E-10	1.92E-11	1.06E-10	8.28E-10	1.51E-11	1.77E-10	5.09E-13	-3.90E-10	6.31E-10
SQP	Pt	1.62E+0	1.69E-2	1.11E-2	1.65E+0	1.33E-2	8.08E-2	2.33E-3	-2.22E+0	-4.73E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.78E-1	2.84E-4	2.10E-1	4.89E-1	2.23E-4	4.97E-3	3.59E-5	-3.81E-1	1.13E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.78E-1	2.84E-4	2.10E-1	4.89E-1	2.23E-4	4.97E-3	3.59E-5	-3.81E-1	1.13E-1
PENRE	MJ	3.24E+0	2.10E-2	6.64E-2	3.33E+0	1.65E-2	1.10E-1	9.64E-4	-1.70E+0	1.76E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.24E+0	2.10E-2	6.64E-2	3.33E+0	1.65E-2	1.10E-1	9.64E-4	-1.70E+0	1.76E+0
PET	MJ	3.52E+0	2.13E-2	2.77E-1	3.82E+0	1.68E-2	1.15E-1	1.00E-3	-2.08E+0	1.87E+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	1.01E-3	2.24E-6	5.11E-4	1.52E-3	1.76E-6	6.82E-5	1.12E-6	-6.33E-4	9.58E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.57E-7	5.06E-8	5.91E-8	7.67E-7	3.98E-8	1.80E-7	1.09E-9	-5.54E-7	4.34E-7
NHWD	kg	5.34E-3	1.23E-3	5.76E-4	7.14E-3	9.65E-4	5.18E-3	4.00E-3	-2.21E-3	1.51E-2
RWD	kg	2.54E-6	1.35E-7	6.31E-8	2.74E-6	1.06E-7	4.13E-7	5.94E-9	-1.14E-6	2.13E-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