Environmental Profile

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

Ecochain v3.5.64

Product:	3067729 - SiTech+ Bend STB 45° 110
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	8.12E-1	1.50E-2	5.75E-2	8.84E-1	1.06E-2	4.44E-1	5.08E-3	-4.94E-1	8.50E-1
GWP-f	kg CO2 eq	8.82E-1	1.49E-2	4.92E-2	9.46E-1	1.06E-2	3.54E-1	5.08E-3	-5.29E-1	7.87E-1
GWP-b	kg CO2 eq	-7.04E-2	9.07E-6	4.15E-3	-6.62E-2	6.42E-6	8.93E-2	4.46E-6	3.51E-2	5.82E-2
GWP-luluc	kg CO2 eq	4.82E-4	5.29E-6	4.15E-3	4.64E-3	3.74E-6	5.95E-5	8.58E-8	-3.86E-4	4.32E-3
ODP	kg CFC11 eq	3.13E-8	3.44E-9	4.94E-9	3.97E-8	2.44E-9	8.25E-9	1.28E-10	-2.40E-8	2.65E-8
AP	mol H+ eq	3.31E-3	8.51E-5	1.98E-4	3.59E-3	6.02E-5	3.46E-4	3.05E-6	-1.60E-3	2.39E-3
EP-fw	kg P eq	1.58E-5	1.23E-7	7.64E-7	1.67E-5	8.70E-8	1.73E-6	3.95E-9	-9.00E-6	9.52E-6
EP-m	kg N eq	5.87E-4	3.04E-5	3.35E-5	6.51E-4	2.16E-5	1.03E-4	2.18E-6	-3.01E-4	4.77E-4
EP-T	mol N eq	6.51E-3	3.36E-4	3.77E-4	7.22E-3	2.38E-4	1.13E-3	1.24E-5	-3.36E-3	5.24E-3
POCP	kg NMVOC eq	2.87E-3	9.59E-5	1.17E-4	3.08E-3	6.79E-5	3.54E-4	4.64E-6	-1.43E-3	2.08E-3
ADP-mm	kg Sb eq	3.11E-5	3.86E-7	1.20E-6	3.27E-5	2.74E-7	1.35E-6	3.06E-9	-4.25E-6	3.00E-5
ADP-f	MJ	3.04E+1	2.29E-1	6.47E-1	3.13E+1	1.62E-1	1.05E+0	9.33E-3	-1.60E+1	1.65E+1
WDP	m3 depriv.	6.00E-1	7.04E-4	2.29E-1	8.29E-1	4.98E-4	2.07E-2	4.27E-5	-3.19E-1	5.32E-1
PM	disease inc.	3.21E-8	1.35E-9	1.99E-9	3.54E-8	9.55E-10	5.57E-9	6.41E-11	-1.62E-8	2.58E-8
IR	kBq U-235 eq	2.08E-2	1.00E-3	6.04E-4	2.24E-2	7.10E-4	3.23E-3	4.34E-5	-1.00E-2	1.64E-2
ETP-fw	CTUe	9.86E+0	1.86E-1	1.02E+0	1.11E+1	1.32E-1	1.29E+0	8.37E-3	-4.99E+0	7.51E+0
HTP-c	CTUh	2.52E-10	6.63E-12	5.44E-11	3.13E-10	4.69E-12	1.41E-10	2.26E-13	-1.30E-10	3.29E-10
HTP-nc	CTUh	6.29E-9	2.22E-10	1.13E-9	7.64E-9	1.57E-10	1.79E-9	5.15E-12	-3.24E-9	6.35E-9
SQP	Pt	8.88E+0	1.96E-1	1.18E-1	9.20E+0	1.39E-1	8.32E-1	2.40E-2	-1.22E+1	-1.99E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.65E+0	3.29E-3	2.24E+0	3.89E+0	2.33E-3	5.13E-2	3.67E-4	-2.16E+0	1.79E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.65E+0	3.29E-3	2.24E+0	3.89E+0	2.33E-3	5.13E-2	3.67E-4	-2.16E+0	1.79E+0
PENRE	MJ	3.26E+1	2.43E-1	7.06E-1	3.36E+1	1.72E-1	1.12E+0	9.90E-3	-1.72E+1	1.77E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.26E+1	2.43E-1	7.06E-1	3.36E+1	1.72E-1	1.12E+0	9.90E-3	-1.72E+1	1.77E+1
PET	MJ	3.43E+1	2.47E-1	2.95E+0	3.75E+1	1.75E-1	1.17E+0	1.03E-2	-1.94E+1	1.95E+1
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	9.59E-3	2.59E-5	5.44E-3	1.51E-2	1.84E-5	6.63E-4	1.15E-5	-5.42E-3	1.03E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.25E-6	5.86E-7	6.29E-7	6.47E-6	4.15E-7	1.78E-6	1.12E-8	-4.76E-6	3.92E-6
NHWD	kg	4.40E-2	1.42E-2	6.13E-3	6.44E-2	1.01E-2	5.24E-2	4.11E-2	-1.76E-2	1.50E-1
RWD	kg	2.06E-5	1.56E-6	6.71E-7	2.28E-5	1.10E-6	4.12E-6	6.10E-8	-9.37E-6	1.88E-5
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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