Environmental Profile

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

Ecochain v3.5.64

Product:	3078869 - SiTech+ Pipe STEM 50 L=0,15 S/PL
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	2.11E-1	4.37E-3	1.53E-2	2.30E-1	2.78E-3	1.33E-1	1.35E-3	-1.31E-1	2.36E-1
GWP-f	kg CO2 eq	2.39E-1	4.37E-3	1.31E-2	2.57E-1	2.78E-3	9.80E-2	1.35E-3	-1.42E-1	2.16E-1
GWP-b	kg CO2 eq	-2.87E-2	2.65E-6	1.11E-3	-2.76E-2	1.69E-6	3.46E-2	1.18E-6	1.16E-2	1.86E-2
GWP-luluc	kg CO2 eq	1.49E-4	1.55E-6	1.11E-3	1.26E-3	9.84E-7	1.56E-5	2.28E-8	-1.22E-4	1.15E-3
ODP	kg CFC11 eq	9.99E-9	1.01E-9	1.31E-9	1.23E-8	6.40E-10	2.21E-9	3.39E-11	-6.84E-9	8.36E-9
AP	mol H+ eq	9.16E-4	2.49E-5	5.28E-5	9.93E-4	1.58E-5	9.24E-5	8.09E-7	-4.41E-4	6.62E-4
EP-fw	kg P eq	4.53E-6	3.60E-8	2.04E-7	4.77E-6	2.29E-8	4.56E-7	1.05E-9	-2.63E-6	2.63E-6
EP-m	kg N eq	1.65E-4	8.91E-6	8.92E-6	1.83E-4	5.66E-6	2.77E-5	5.97E-7	-8.40E-5	1.33E-4
EP-T	mol N eq	1.82E-3	9.82E-5	1.00E-4	2.02E-3	6.24E-5	3.05E-4	3.29E-6	-9.42E-4	1.45E-3
POCP	kg NMVOC eq	7.94E-4	2.81E-5	3.12E-5	8.53E-4	1.78E-5	9.50E-5	1.23E-6	-3.92E-4	5.76E-4
ADP-mm	kg Sb eq	1.04E-5	1.13E-7	3.19E-7	1.08E-5	7.19E-8	3.59E-7	8.12E-10	-1.22E-6	1.00E-5
ADP-f	MJ	8.14E+0	6.71E-2	1.72E-1	8.37E+0	4.27E-2	2.79E-1	2.48E-3	-4.24E+0	4.46E+0
WDP	m3 depriv.	1.61E-1	2.06E-4	6.10E-2	2.22E-1	1.31E-4	5.48E-3	1.13E-5	-8.70E-2	1.41E-1
PM	disease inc.	9.15E-9	3.95E-10	5.29E-10	1.01E-8	2.51E-10	1.48E-9	1.70E-11	-4.64E-9	7.18E-9
IR	kBq U-235 eq	6.09E-3	2.93E-4	1.61E-4	6.55E-3	1.86E-4	8.58E-4	1.15E-5	-2.85E-3	4.76E-3
ETP-fw	CTUe	3.03E+0	5.45E-2	2.72E-1	3.36E+0	3.46E-2	3.51E-1	2.28E-3	-1.53E+0	2.22E+0
HTP-c	CTUh	7.43E-11	1.94E-12	1.45E-11	9.07E-11	1.23E-12	3.74E-11	6.00E-14	-3.91E-11	9.03E-11
HTP-nc	CTUh	1.78E-9	6.49E-11	3.01E-10	2.14E-9	4.13E-11	4.75E-10	1.38E-12	-9.27E-10	1.73E-9
SQP	Pt	3.30E+0	5.74E-2	3.14E-2	3.39E+0	3.65E-2	2.19E-1	6.35E-3	-4.33E+0	-6.78E-1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.81E-1	9.63E-4	5.96E-1	1.18E+0	6.12E-4	1.35E-2	9.77E-5	-7.50E-1	4.43E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.81E-1	9.63E-4	5.96E-1	1.18E+0	6.12E-4	1.35E-2	9.77E-5	-7.50E-1	4.43E-1
PENRE	MJ	8.73E+0	7.12E-2	1.88E-1	8.99E+0	4.53E-2	2.97E-1	2.63E-3	-4.57E+0	4.76E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.73E+0	7.12E-2	1.88E-1	8.99E+0	4.53E-2	2.97E-1	2.63E-3	-4.57E+0	4.76E+0
PET	MJ	9.31E+0	7.22E-2	7.84E-1	1.02E+1	4.59E-2	3.10E-1	2.72E-3	-5.32E+0	5.20E+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	2.63E-3	7.59E-6	1.45E-3	4.09E-3	4.83E-6	1.81E-4	3.06E-6	-1.52E-3	2.76E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.58E-6	1.72E-7	1.68E-7	1.92E-6	1.09E-7	4.77E-7	2.97E-9	-1.37E-6	1.14E-6
NHWD	kg	1.29E-2	4.16E-3	1.63E-3	1.87E-2	2.64E-3	1.39E-2	1.09E-2	-5.20E-3	4.10E-2
RWD	kg	6.24E-6	4.56E-7	1.79E-7	6.87E-6	2.90E-7	1.10E-6	1.62E-8	-2.70E-6	5.58E-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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