Environmental Profile

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

Ecochain v3.5.64

Product:	3075739 - SiTech+ Pipe STEM 110 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	9.14E-1	1.70E-2	6.77E-2	9.99E-1	1.21E-2	5.23E-1	5.82E-3	-5.66E-1	9.73E-1
GWP-f	kg CO2 eq	1.01E+0	1.70E-2	5.79E-2	1.09E+0	1.21E-2	4.00E-1	5.82E-3	-6.09E-1	8.97E-1
GWP-b	kg CO2 eq	-9.92E-2	1.03E-5	4.89E-3	-9.43E-2	7.36E-6	1.22E-1	5.10E-6	4.36E-2	7.18E-2
GWP-luluc	kg CO2 eq	5.76E-4	6.02E-6	4.89E-3	5.47E-3	4.29E-6	6.85E-5	9.81E-8	-4.74E-4	5.07E-3
ODP	kg CFC11 eq	3.48E-8	3.92E-9	5.81E-9	4.46E-8	2.79E-9	9.53E-9	1.46E-10	-2.77E-8	2.93E-8
AP	mol H+ eq	3.79E-3	9.69E-5	2.34E-4	4.12E-3	6.91E-5	3.99E-4	3.49E-6	-1.87E-3	2.72E-3
EP-fw	kg P eq	1.83E-5	1.40E-7	9.00E-7	1.93E-5	9.98E-8	1.99E-6	4.52E-9	-1.07E-5	1.07E-5
EP-m	kg N eq	6.79E-4	3.47E-5	3.95E-5	7.53E-4	2.47E-5	1.19E-4	2.47E-6	-3.53E-4	5.46E-4
EP-T	mol N eq	7.52E-3	3.82E-4	4.43E-4	8.34E-3	2.72E-4	1.31E-3	1.42E-5	-3.95E-3	5.99E-3
POCP	kg NMVOC eq	3.30E-3	1.09E-4	1.38E-4	3.55E-3	7.79E-5	4.09E-4	5.31E-6	-1.67E-3	2.37E-3
ADP-mm	kg Sb eq	3.29E-5	4.40E-7	1.41E-6	3.48E-5	3.14E-7	1.56E-6	3.50E-9	-4.86E-6	3.18E-5
ADP-f	MJ	3.49E+1	2.61E-1	7.62E-1	3.59E+1	1.86E-1	1.22E+0	1.07E-2	-1.84E+1	1.89E+1
WDP	m3 depriv.	6.87E-1	8.01E-4	2.70E-1	9.57E-1	5.71E-4	2.37E-2	4.89E-5	-3.71E-1	6.10E-1
PM	disease inc.	3.70E-8	1.53E-9	2.34E-9	4.09E-8	1.09E-9	6.43E-9	7.33E-11	-1.92E-8	2.93E-8
IR	kBq U-235 eq	2.35E-2	1.14E-3	7.11E-4	2.54E-2	8.14E-4	3.73E-3	4.97E-5	-1.18E-2	1.82E-2
ETP-fw	CTUe	1.16E+1	2.12E-1	1.20E+0	1.30E+1	1.51E-1	1.48E+0	9.49E-3	-6.04E+0	8.65E+0
HTP-c	CTUh	2.95E-10	7.54E-12	6.41E-11	3.67E-10	5.38E-12	1.63E-10	2.58E-13	-1.57E-10	3.79E-10
HTP-nc	CTUh	7.24E-9	2.53E-10	1.33E-9	8.83E-9	1.80E-10	2.06E-9	5.86E-12	-3.84E-9	7.23E-9
SQP	Pt	1.18E+1	2.23E-1	1.39E-1	1.22E+1	1.59E-1	9.59E-1	2.74E-2	-1.59E+1	-2.52E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.14E+0	3.74E-3	2.64E+0	4.78E+0	2.67E-3	5.90E-2	4.19E-4	-2.78E+0	2.06E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.14E+0	3.74E-3	2.64E+0	4.78E+0	2.67E-3	5.90E-2	4.19E-4	-2.78E+0	2.06E+0
PENRE	MJ	3.74E+1	2.77E-1	8.31E-1	3.85E+1	1.98E-1	1.30E+0	1.13E-2	-1.98E+1	2.02E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.74E+1	2.77E-1	8.31E-1	3.85E+1	1.98E-1	1.30E+0	1.13E-2	-1.98E+1	2.02E+1
PET	MJ	3.95E+1	2.81E-1	3.47E+0	4.33E+1	2.00E-1	1.35E+0	1.17E-2	-2.26E+1	2.23E+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	1.10E-2	2.95E-5	6.41E-3	1.74E-2	2.11E-5	7.55E-4	1.32E-5	-6.37E-3	1.18E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.11E-6	6.67E-7	7.41E-7	7.51E-6	4.76E-7	2.05E-6	1.28E-8	-5.55E-6	4.51E-6
NHWD	kg	5.14E-2	1.62E-2	7.22E-3	7.48E-2	1.15E-2	6.02E-2	4.70E-2	-2.12E-2	1.72E-1
RWD	kg	2.31E-5	1.77E-6	7.91E-7	2.57E-5	1.27E-6	4.77E-6	6.98E-8	-1.10E-5	2.07E-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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