Environmental Profile

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

Ecochain v3.5.64

Product:	3085673 - SiTech+ Pipe IJM STEM 160 L=0,25 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	2.47E+0	3.77E-2	1.63E-1	2.67E+0	3.23E-2	1.38E+0	1.55E-2	-1.49E+0	2.60E+0
GWP-f	kg CO2 eq	2.71E+0	3.76E-2	1.39E-1	2.88E+0	3.22E-2	1.06E+0	1.55E-2	-1.63E+0	2.36E+0
GWP-b	kg CO2 eq	-2.39E-1	2.29E-5	1.18E-2	-2.28E-1	1.96E-5	3.13E-1	1.36E-5	1.42E-1	2.28E-1
GWP-luluc	kg CO2 eq	1.66E-3	1.33E-5	1.18E-2	1.34E-2	1.14E-5	1.83E-4	2.61E-7	-1.43E-3	1.22E-2
ODP	kg CFC11 eq	9.41E-8	8.67E-9	1.40E-8	1.17E-7	7.43E-9	2.57E-8	3.89E-10	-7.51E-8	7.52E-8
AP	mol H+ eq	1.02E-2	2.14E-4	5.62E-4	1.09E-2	1.84E-4	1.07E-3	9.26E-6	-5.09E-3	7.11E-3
EP-fw	kg P eq	4.98E-5	3.10E-7	2.16E-6	5.22E-5	2.65E-7	5.33E-6	1.20E-8	-3.06E-5	2.72E-5
EP-m	kg N eq	1.84E-3	7.67E-5	9.49E-5	2.01E-3	6.57E-5	3.20E-4	6.54E-6	-9.61E-4	1.44E-3
EP-T	mol N eq	2.03E-2	8.45E-4	1.07E-3	2.22E-2	7.24E-4	3.52E-3	3.76E-5	-1.08E-2	1.57E-2
POCP	kg NMVOC eq	8.81E-3	2.42E-4	3.31E-4	9.38E-3	2.07E-4	1.10E-3	1.41E-5	-4.49E-3	6.22E-3
ADP-mm	kg Sb eq	8.51E-5	9.74E-7	3.39E-6	8.95E-5	8.34E-7	4.20E-6	9.30E-9	-1.30E-5	8.15E-5
ADP-f	MJ	9.29E+1	5.78E-1	1.83E+0	9.53E+1	4.95E-1	3.26E+0	2.84E-2	-4.91E+1	5.00E+1
WDP	m3 depriv.	1.83E+0	1.77E-3	6.49E-1	2.48E+0	1.52E-3	6.33E-2	1.30E-4	-1.02E+0	1.52E+0
PM	disease inc.	9.94E-8	3.40E-9	5.63E-9	1.08E-7	2.91E-9	1.73E-8	1.95E-10	-5.31E-8	7.57E-8
IR	kBq U-235 eq	6.30E-2	2.53E-3	1.71E-3	6.73E-2	2.16E-3	1.00E-2	1.32E-4	-3.28E-2	4.68E-2
ETP-fw	CTUe	3.40E+1	4.69E-1	2.89E+0	3.73E+1	4.02E-1	3.97E+0	2.52E-2	-1.79E+1	2.38E+1
HTP-c	CTUh	7.80E-10	1.67E-11	1.54E-10	9.51E-10	1.43E-11	4.38E-10	6.86E-13	-4.25E-10	9.79E-10
HTP-nc	CTUh	1.94E-8	5.59E-10	3.20E-9	2.32E-8	4.79E-10	5.51E-9	1.56E-11	-1.07E-8	1.85E-8
SQP	Pt	3.05E+1	4.94E-1	3.34E-1	3.13E+1	4.24E-1	2.56E+0	7.28E-2	-4.52E+1	-1.09E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	5.62E+0	8.29E-3	6.34E+0	1.20E+1	7.10E-3	1.58E-1	1.11E-3	-8.00E+0	4.14E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	5.62E+0	8.29E-3	6.34E+0	1.20E+1	7.10E-3	1.58E-1	1.11E-3	-8.00E+0	4.14E+0
PENRE	MJ	9.96E+1	6.13E-1	2.00E+0	1.02E+2	5.26E-1	3.47E+0	3.01E-2	-5.29E+1	5.34E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.96E+1	6.13E-1	2.00E+0	1.02E+2	5.26E-1	3.47E+0	3.01E-2	-5.29E+1	5.34E+1
PET	MJ	1.05E+2	6.22E-1	8.34E+0	1.14E+2	5.33E-1	3.63E+0	3.12E-2	-6.09E+1	5.75E+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	2.94E-2	6.54E-5	1.54E-2	4.48E-2	5.60E-5	2.01E-3	3.50E-5	-1.79E-2	2.91E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.63E-5	1.48E-6	1.78E-6	1.96E-5	1.27E-6	5.52E-6	3.40E-8	-1.49E-5	1.15E-5
NHWD	kg	1.38E-1	3.58E-2	1.74E-2	1.91E-1	3.07E-2	1.61E-1	1.25E-1	-5.75E-2	4.50E-1
RWD	kg	6.19E-5	3.93E-6	1.90E-6	6.77E-5	3.37E-6	1.28E-5	1.85E-7	-3.07E-5	5.33E-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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