Environmental Profile

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

Ecochain v3.5.64

Product:	3085648 - SiTech+ Pipe IJM STEM 75 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	6.14E-1	9.21E-3	3.72E-2	6.60E-1	8.14E-3	3.33E-1	3.89E-3	-3.78E-1	6.27E-1
GWP-f	kg CO2 eq	6.70E-1	9.20E-3	3.18E-2	7.11E-1	8.14E-3	2.62E-1	3.89E-3	-4.05E-1	5.80E-1
GWP-b	kg CO2 eq	-5.62E-2	5.59E-6	2.69E-3	-5.35E-2	4.94E-6	7.09E-2	3.41E-6	2.69E-2	4.43E-2
GWP-luluc	kg CO2 eq	3.62E-4	3.26E-6	2.69E-3	3.05E-3	2.88E-6	4.60E-5	6.55E-8	-2.97E-4	2.80E-3
ODP	kg CFC11 eq	2.11E-8	2.12E-9	3.19E-9	2.64E-8	1.88E-9	6.36E-9	9.77E-11	-1.80E-8	1.67E-8
AP	mol H+ eq	2.48E-3	5.24E-5	1.28E-4	2.66E-3	4.64E-5	2.66E-4	2.33E-6	-1.24E-3	1.74E-3
EP-fw	kg P eq	1.18E-5	7.57E-8	4.95E-7	1.23E-5	6.70E-8	1.34E-6	3.02E-9	-6.94E-6	6.81E-6
EP-m	kg N eq	4.42E-4	1.88E-5	2.17E-5	4.83E-4	1.66E-5	7.89E-5	1.62E-6	-2.32E-4	3.48E-4
EP-T	mol N eq	4.89E-3	2.07E-4	2.44E-4	5.34E-3	1.83E-4	8.68E-4	9.46E-6	-2.59E-3	3.81E-3
POCP	kg NMVOC eq	2.16E-3	5.91E-5	7.57E-5	2.30E-3	5.22E-5	2.72E-4	3.55E-6	-1.10E-3	1.52E-3
ADP-mm	kg Sb eq	1.86E-5	2.38E-7	7.75E-7	1.96E-5	2.11E-7	1.04E-6	2.34E-9	-3.13E-6	1.78E-5
ADP-f	MJ	2.32E+1	1.41E-1	4.19E-1	2.38E+1	1.25E-1	8.15E-1	7.13E-3	-1.23E+1	1.24E+1
WDP	m3 depriv.	4.56E-1	4.33E-4	1.48E-1	6.05E-1	3.83E-4	1.59E-2	3.26E-5	-2.46E-1	3.75E-1
PM	disease inc.	2.39E-8	8.31E-10	1.29E-9	2.60E-8	7.35E-10	4.31E-9	4.90E-11	-1.25E-8	1.86E-8
IR	kBq U-235 eq	1.49E-2	6.17E-4	3.91E-4	1.60E-2	5.46E-4	2.50E-3	3.32E-5	-7.68E-3	1.13E-2
ETP-fw	CTUe	7.30E+0	1.15E-1	6.61E-1	8.07E+0	1.01E-1	9.79E-1	6.26E-3	-3.83E+0	5.33E+0
HTP-c	CTUh	1.86E-10	4.08E-12	3.52E-11	2.26E-10	3.61E-12	1.09E-10	1.72E-13	-1.00E-10	2.38E-10
HTP-nc	CTUh	4.68E-9	1.37E-10	7.31E-10	5.54E-9	1.21E-10	1.38E-9	3.90E-12	-2.50E-9	4.54E-9
SQP	Pt	6.92E+0	1.21E-1	7.63E-2	7.12E+0	1.07E-1	6.43E-1	1.83E-2	-9.51E+0	-1.62E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.28E+0	2.03E-3	1.45E+0	2.74E+0	1.79E-3	3.96E-2	2.80E-4	-1.68E+0	1.10E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.28E+0	2.03E-3	1.45E+0	2.74E+0	1.79E-3	3.96E-2	2.80E-4	-1.68E+0	1.10E+0
PENRE	MJ	2.49E+1	1.50E-1	4.57E-1	2.55E+1	1.33E-1	8.68E-1	7.56E-3	-1.33E+1	1.33E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.49E+1	1.50E-1	4.57E-1	2.55E+1	1.33E-1	8.68E-1	7.56E-3	-1.33E+1	1.33E+1
PET	MJ	2.62E+1	1.52E-1	1.91E+0	2.82E+1	1.34E-1	9.08E-1	7.84E-3	-1.49E+1	1.44E+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	7.21E-3	1.60E-5	3.52E-3	1.07E-2	1.41E-5	4.97E-4	8.81E-6	-4.18E-3	7.09E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.77E-6	3.61E-7	4.07E-7	4.54E-6	3.19E-7	1.37E-6	8.56E-9	-3.59E-6	2.65E-6
NHWD	kg	3.21E-2	8.75E-3	3.97E-3	4.49E-2	7.74E-3	4.03E-2	3.14E-2	-1.36E-2	1.11E-1
RWD	kg	1.44E-5	9.60E-7	4.35E-7	1.58E-5	8.49E-7	3.19E-6	4.66E-8	-7.17E-6	1.27E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777