Environmental Profile

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

Ecochain v3.5.64

Product:	3010722 - ED Tech PP Pipe HTEM 90 L=1 S/PL
Unit:	1 piece
Manufacturer:	Wavin - IT - SM Maddalena

PP SWR (ED Tech) products made of PP for waste water discharge are the ideal solution for anyone who wants a quick and easy connection system. A push-fit system, made watertight using elastomeric seals. Triple-layer pipes, with a white inner layer for easier inspection. Low linear expansion.

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	8.20E-2	6.91E-2	1.07E+0	1.62E-2	6.60E-1	6.56E-3	-6.61E-1	1.09E+0
GWP-f	kg CO2 eq	1.11E+0	8.19E-2	6.17E-2	1.26E+0	1.62E-2	4.58E-1	6.56E-3	-6.59E-1	1.08E+0
GWP-b	kg CO2 eq	-1.99E-1	4.97E-5	3.90E-3	-1.95E-1	9.81E-6	2.03E-1	5.83E-6	-2.19E-3	5.21E-3
GWP-luluc	kg CO2 eq	4.26E-4	2.90E-5	3.51E-3	3.97E-3	5.72E-6	9.04E-5	1.20E-7	-1.97E-4	3.86E-3
ODP	kg CFC11 eq	3.43E-8	1.89E-8	6.72E-9	5.99E-8	3.72E-9	1.20E-8	1.84E-10	-2.73E-8	4.85E-8
AP	mol H+ eq	4.45E-3	4.67E-4	2.08E-4	5.13E-3	9.20E-5	5.04E-4	4.32E-6	-1.93E-3	3.80E-3
EP-fw	kg P eq	1.89E-5	6.74E-7	8.23E-7	2.04E-5	1.33E-7	2.61E-6	5.45E-9	-7.96E-6	1.52E-5
EP-m	kg N eq	7.22E-4	1.67E-4	3.98E-5	9.29E-4	3.29E-5	1.48E-4	2.83E-6	-3.57E-4	7.55E-4
EP-T	mol N eq	8.21E-3	1.84E-3	4.39E-4	1.05E-2	3.63E-4	1.62E-3	1.75E-5	-4.03E-3	8.47E-3
POCP	kg NMVOC eq	3.65E-3	5.26E-4	1.39E-4	4.32E-3	1.04E-4	5.11E-4	6.43E-6	-1.77E-3	3.17E-3
ADP-mm	kg Sb eq	3.26E-5	2.12E-6	1.13E-6	3.58E-5	4.18E-7	1.98E-6	4.32E-9	-5.00E-6	3.32E-5
ADP-f	MJ	3.83E+1	1.26E+0	8.51E-1	4.04E+1	2.48E-1	1.58E+0	1.33E-2	-2.03E+1	2.19E+1
WDP	m3 depriv.	7.80E-1	3.86E-3	1.95E-1	9.78E-1	7.61E-4	3.09E-2	6.84E-5	-3.50E-1	6.60E-1
PM	disease inc.	4.26E-8	7.39E-9	2.52E-9	5.26E-8	1.46E-9	8.26E-9	9.08E-11	-1.78E-8	4.46E-8
IR	kBq U-235 eq	2.49E-2	5.50E-3	8.29E-4	3.13E-2	1.08E-3	4.80E-3	6.12E-5	-1.04E-2	2.68E-2
ETP-fw	CTUe	7.92E+0	1.02E+0	1.02E+0	9.96E+0	2.01E-1	1.83E+0	1.12E-2	-3.39E+0	8.62E+0
HTP-c	CTUh	3.99E-10	3.63E-11	6.21E-11	4.98E-10	7.17E-12	2.15E-10	3.12E-13	-1.58E-10	5.62E-10
HTP-nc	CTUh	8.43E-9	1.22E-9	1.13E-9	1.08E-8	2.40E-10	2.64E-9	6.97E-12	-3.52E-9	1.02E-8
SQP	Pt	1.92E+1	1.08E+0	1.76E-1	2.05E+1	2.12E-1	1.27E+0	3.36E-2	-1.12E+1	1.08E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.17E+0	1.80E-2	1.89E+0	5.08E+0	3.56E-3	7.75E-2	4.84E-4	-1.92E+0	3.24E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.17E+0	1.80E-2	1.89E+0	5.08E+0	3.56E-3	7.75E-2	4.84E-4	-1.92E+0	3.24E+0
PENRE	MJ	4.11E+1	1.33E+0	9.30E-1	4.33E+1	2.63E-1	1.69E+0	1.41E-2	-2.19E+1	2.34E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.11E+1	1.33E+0	9.30E-1	4.33E+1	2.63E-1	1.69E+0	1.41E-2	-2.19E+1	2.34E+1
PET	MJ	4.42E+1	1.35E+0	2.82E+0	4.84E+1	2.67E-1	1.76E+0	1.46E-2	-2.38E+1	2.66E+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	1.24E-2	1.42E-4	4.64E-3	1.72E-2	2.81E-5	9.51E-4	1.63E-5	-5.36E-3	1.28E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	6.91E-6	3.22E-6	9.45E-7	1.11E-5	6.34E-7	2.60E-6	1.59E-8	-5.62E-6	8.70E-6
NHWD	kg	6.78E-2	7.79E-2	9.17E-3	1.55E-1	1.54E-2	7.93E-2	6.22E-2	-2.12E-2	2.91E-1
RWD	kg	2.40E-5	8.55E-6	1.01E-6	3.35E-5	1.69E-6	6.10E-6	8.71E-8	-9.70E-6	3.17E-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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