Environmental Profile

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

Ecochain v3.5.64

Product:	3010724 - ED Tech PP Pipe HTEM 90 L=3 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	2.58E+0	2.24E-1	1.97E-1	3.00E+0	4.49E-2	1.65E+0	1.81E-2	-1.81E+0	2.90E+0
GWP-f	kg CO2 eq	3.01E+0	2.24E-1	1.76E-1	3.41E+0	4.48E-2	1.21E+0	1.81E-2	-1.81E+0	2.88E+0
GWP-b	kg CO2 eq	-4.32E-1	1.36E-4	1.11E-2	-4.21E-1	2.72E-5	4.43E-1	1.60E-5	-6.16E-3	1.61E-2
GWP-luluc	kg CO2 eq	1.05E-3	7.93E-5	1.00E-2	1.11E-2	1.59E-5	2.52E-4	3.30E-7	-5.20E-4	1.09E-2
ODP	kg CFC11 eq	7.43E-8	5.17E-8	1.92E-8	1.45E-7	1.03E-8	3.33E-8	5.06E-10	-7.21E-8	1.17E-7
AP	mol H+ eq	1.17E-2	1.28E-3	5.93E-4	1.36E-2	2.55E-4	1.39E-3	1.19E-5	-5.30E-3	9.96E-3
EP-fw	kg P eq	4.90E-5	1.84E-6	2.35E-6	5.32E-5	3.69E-7	7.28E-6	1.49E-8	-2.18E-5	3.90E-5
EP-m	kg N eq	1.90E-3	4.57E-4	1.13E-4	2.48E-3	9.14E-5	4.04E-4	7.54E-6	-9.71E-4	2.01E-3
EP-T	mol N eq	2.16E-2	5.04E-3	1.25E-3	2.79E-2	1.01E-3	4.45E-3	4.82E-5	-1.09E-2	2.25E-2
POCP	kg NMVOC eq	9.71E-3	1.44E-3	3.97E-4	1.15E-2	2.88E-4	1.40E-3	1.77E-5	-4.85E-3	8.41E-3
ADP-mm	kg Sb eq	6.20E-5	5.80E-6	3.22E-6	7.10E-5	1.16E-6	5.50E-6	1.19E-8	-1.29E-5	6.47E-5
ADP-f	MJ	1.05E+2	3.44E+0	2.43E+0	1.11E+2	6.88E-1	4.41E+0	3.65E-2	-5.62E+1	5.95E+1
WDP	m3 depriv.	2.12E+0	1.06E-2	5.56E-1	2.68E+0	2.11E-3	8.55E-2	1.86E-4	-9.75E-1	1.80E+0
PM	disease inc.	1.08E-7	2.02E-8	7.20E-9	1.35E-7	4.05E-9	2.29E-8	2.50E-10	-4.83E-8	1.14E-7
IR	kBq U-235 eq	6.16E-2	1.50E-2	2.37E-3	7.90E-2	3.01E-3	1.33E-2	1.68E-4	-2.84E-2	6.71E-2
ETP-fw	CTUe	1.97E+1	2.79E+0	2.91E+0	2.54E+1	5.59E-1	5.00E+0	3.00E-2	-8.91E+0	2.21E+1
HTP-c	CTUh	1.00E-9	9.94E-11	1.77E-10	1.28E-9	1.99E-11	5.91E-10	8.53E-13	-4.22E-10	1.47E-9
HTP-nc	CTUh	2.19E-8	3.33E-9	3.21E-9	2.84E-8	6.66E-10	7.31E-9	1.90E-11	-9.53E-9	2.69E-8
SQP	Pt	4.22E+1	2.94E+0	5.02E-1	4.57E+1	5.89E-1	3.53E+0	9.24E-2	-2.74E+1	2.25E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.12E+0	4.94E-2	5.40E+0	1.26E+1	9.88E-3	2.16E-1	1.33E-3	-4.67E+0	8.13E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.12E+0	4.94E-2	5.40E+0	1.26E+1	9.88E-3	2.16E-1	1.33E-3	-4.67E+0	8.13E+0
PENRE	MJ	1.12E+2	3.65E+0	2.65E+0	1.19E+2	7.31E-1	4.69E+0	3.88E-2	-6.06E+1	6.36E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.12E+2	3.65E+0	2.65E+0	1.19E+2	7.31E-1	4.69E+0	3.88E-2	-6.06E+1	6.36E+1
PET	MJ	1.20E+2	3.70E+0	8.05E+0	1.31E+2	7.41E-1	4.91E+0	4.01E-2	-6.53E+1	7.17E+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	3.30E-2	3.89E-4	1.32E-2	4.66E-2	7.79E-5	2.55E-3	4.49E-5	-1.49E-2	3.44E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.71E-5	8.80E-6	2.70E-6	2.86E-5	1.76E-6	7.19E-6	4.38E-8	-1.49E-5	2.27E-5
NHWD	kg	1.71E-1	2.13E-1	2.61E-2	4.10E-1	4.27E-2	2.18E-1	1.71E-1	-5.68E-2	7.85E-1
RWD	kg	5.65E-5	2.34E-5	2.88E-6	8.28E-5	4.68E-6	1.69E-5	2.40E-7	-2.63E-5	7.83E-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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