Environmental Profile

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

Ecochain v3.5.64

Product:	3010776 - Ed Tech PP Bend HTB 45° 90
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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.94E-1	1.53E-2	1.31E-2	2.23E-1	2.52E-3	1.81E-1	1.26E-3	-1.19E-1	2.89E-1
GWP-f	kg CO2 eq	2.53E-1	1.53E-2	1.12E-2	2.79E-1	2.52E-3	1.10E-1	1.26E-3	-1.46E-1	2.47E-1
GWP-b	kg CO2 eq	-5.84E-2	9.29E-6	9.44E-4	-5.75E-2	1.53E-6	7.11E-2	1.12E-6	2.78E-2	4.15E-2
GWP-luluc	kg CO2 eq	2.69E-4	5.42E-6	9.43E-4	1.22E-3	8.91E-7	1.42E-5	2.22E-8	-2.46E-4	9.86E-4
ODP	kg CFC11 eq	1.77E-8	3.53E-9	1.12E-9	2.24E-8	5.80E-10	2.25E-9	3.21E-11	-8.82E-9	1.64E-8
AP	mol H+ eq	1.07E-3	8.72E-5	4.51E-5	1.20E-3	1.43E-5	9.36E-5	7.71E-7	-5.03E-4	8.10E-4
EP-fw	kg P eq	6.19E-6	1.26E-7	1.74E-7	6.48E-6	2.07E-8	4.22E-7	1.01E-9	-4.05E-6	2.87E-6
EP-m	kg N eq	2.05E-4	3.12E-5	7.61E-6	2.44E-4	5.13E-6	2.90E-5	6.43E-7	-1.02E-4	1.77E-4
EP-T	mol N eq	2.25E-3	3.44E-4	8.55E-5	2.68E-3	5.66E-5	3.19E-4	3.12E-6	-1.16E-3	1.90E-3
POCP	kg NMVOC eq	9.01E-4	9.83E-5	2.66E-5	1.03E-3	1.62E-5	9.80E-5	1.16E-6	-4.38E-4	7.04E-4
ADP-mm	kg Sb eq	1.93E-5	3.96E-7	2.72E-7	1.99E-5	6.52E-8	3.56E-7	7.76E-10	-1.56E-6	1.88E-5
ADP-f	MJ	7.94E+0	2.35E-1	1.47E-1	8.33E+0	3.87E-2	2.64E-1	2.35E-3	-4.07E+0	4.57E+0
WDP	m3 depriv.	1.62E-1	7.21E-4	5.20E-2	2.15E-1	1.19E-4	5.18E-3	1.27E-5	-1.03E-1	1.18E-1
PM	disease inc.	1.18E-8	1.38E-9	4.51E-10	1.37E-8	2.27E-10	1.45E-9	1.61E-11	-6.35E-9	8.99E-9
IR	kBq U-235 eq	8.51E-3	1.03E-3	1.37E-4	9.67E-3	1.69E-4	8.38E-4	1.09E-5	-3.89E-3	6.80E-3
ETP-fw	CTUe	5.60E+0	1.91E-1	2.32E-1	6.02E+0	3.14E-2	3.78E-1	2.40E-3	-2.82E+0	3.61E+0
HTP-c	CTUh	1.03E-10	6.79E-12	1.24E-11	1.23E-10	1.12E-12	3.67E-11	5.88E-14	-5.70E-11	1.03E-10
HTP-nc	CTUh	2.28E-9	2.27E-10	2.57E-10	2.76E-9	3.74E-11	4.63E-10	1.38E-12	-1.27E-9	2.00E-9
SQP	Pt	6.52E+0	2.01E-1	2.68E-2	6.75E+0	3.31E-2	2.03E-1	6.01E-3	-9.29E+0	-2.30E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.08E+0	3.37E-3	5.09E-1	1.60E+0	5.55E-4	1.25E-2	9.29E-5	-1.58E+0	2.98E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.08E+0	3.37E-3	5.09E-1	1.60E+0	5.55E-4	1.25E-2	9.29E-5	-1.58E+0	2.98E-2
PENRE	MJ	8.52E+0	2.49E-1	1.60E-1	8.93E+0	4.10E-2	2.81E-1	2.49E-3	-4.38E+0	4.87E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.52E+0	2.49E-1	1.60E-1	8.93E+0	4.10E-2	2.81E-1	2.49E-3	-4.38E+0	4.87E+0
PET	MJ	9.60E+0	2.53E-1	6.69E-1	1.05E+1	4.16E-2	2.94E-1	2.58E-3	-5.96E+0	4.90E+0
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	2.99E-3	2.66E-5	1.24E-3	4.25E-3	4.38E-6	1.96E-4	2.89E-6	-2.04E-3	2.41E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.41E-6	6.01E-7	1.43E-7	3.15E-6	9.89E-8	4.85E-7	2.83E-9	-1.77E-6	1.97E-6
NHWD	kg	1.88E-2	1.46E-2	1.39E-3	3.47E-2	2.40E-3	1.35E-2	1.03E-2	-7.30E-3	5.36E-2
RWD	kg	9.46E-6	1.60E-6	1.53E-7	1.12E-5	2.63E-7	1.08E-6	1.53E-8	-3.78E-6	8.79E-6
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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