Environmental Profile

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

Ecochain v3.5.64

Product:	3010772 - Ed Tech PP Bend HTB 45° 32
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	4.19E-2	2.94E-3	3.00E-3	4.78E-2	5.94E-4	4.10E-2	2.95E-4	-2.89E-2	6.09E-2
GWP-f	kg CO2 eq	5.65E-2	2.94E-3	2.57E-3	6.20E-2	5.93E-4	2.45E-2	2.95E-4	-3.28E-2	5.45E-2
GWP-b	kg CO2 eq	-1.46E-2	1.79E-6	2.17E-4	-1.44E-2	3.60E-7	1.65E-2	2.60E-7	4.01E-3	6.10E-3
GWP-luluc	kg CO2 eq	4.92E-5	1.04E-6	2.17E-4	2.67E-4	2.10E-7	3.32E-6	5.31E-9	-4.07E-5	2.30E-4
ODP	kg CFC11 eq	3.65E-9	6.77E-10	2.58E-10	4.59E-9	1.37E-10	4.97E-10	7.49E-12	-1.84E-9	3.39E-9
AP	mol H+ eq	2.39E-4	1.67E-5	1.04E-5	2.66E-4	3.38E-6	2.08E-5	1.80E-7	-1.08E-4	1.83E-4
EP-fw	kg P eq	1.29E-6	2.42E-8	3.99E-8	1.35E-6	4.88E-9	9.76E-8	2.41E-10	-7.41E-7	7.12E-7
EP-m	kg N eq	4.37E-5	5.99E-6	1.75E-6	5.15E-5	1.21E-6	6.37E-6	1.44E-7	-2.16E-5	3.76E-5
EP-T	mol N eq	4.88E-4	6.60E-5	1.97E-5	5.73E-4	1.33E-5	7.01E-5	7.28E-7	-2.43E-4	4.14E-4
POCP	kg NMVOC eq	1.99E-4	1.89E-5	6.11E-6	2.24E-4	3.81E-6	2.16E-5	2.72E-7	-9.62E-5	1.54E-4
ADP-mm	kg Sb eq	4.08E-6	7.61E-8	6.25E-8	4.21E-6	1.53E-8	7.93E-8	1.83E-10	-3.36E-7	3.97E-6
ADP-f	MJ	1.79E+0	4.51E-2	3.38E-2	1.87E+0	9.11E-3	6.04E-2	5.48E-4	-9.35E-1	1.01E+0
WDP	m3 depriv.	3.71E-2	1.38E-4	1.20E-2	4.92E-2	2.79E-5	1.20E-3	3.47E-6	-2.07E-2	2.97E-2
PM	disease inc.	2.56E-9	2.65E-10	1.04E-10	2.93E-9	5.36E-11	3.25E-10	3.76E-12	-1.27E-9	2.03E-9
IR	kBq U-235 eq	1.80E-3	1.97E-4	3.15E-5	2.03E-3	3.98E-5	1.89E-4	2.54E-6	-7.62E-4	1.49E-3
ETP-fw	CTUe	1.00E+0	3.66E-2	5.33E-2	1.09E+0	7.39E-3	8.28E-2	5.46E-4	-4.75E-1	7.10E-1
HTP-c	CTUh	2.36E-11	1.30E-12	2.84E-12	2.77E-11	2.63E-13	8.67E-12	1.41E-14	-1.23E-11	2.44E-11
HTP-nc	CTUh	5.08E-10	4.37E-11	5.90E-11	6.10E-10	8.82E-12	1.06E-10	3.20E-13	-2.52E-10	4.73E-10
SQP	Pt	1.50E+0	3.86E-2	6.16E-3	1.55E+0	7.79E-3	4.69E-2	1.40E-3	-1.79E+0	-1.89E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.43E-1	6.47E-4	1.17E-1	3.61E-1	1.31E-4	2.89E-3	2.13E-5	-2.98E-1	6.58E-2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.43E-1	6.47E-4	1.17E-1	3.61E-1	1.31E-4	2.89E-3	2.13E-5	-2.98E-1	6.58E-2
PENRE	MJ	1.92E+0	4.79E-2	3.69E-2	2.01E+0	9.67E-3	6.43E-2	5.81E-4	-1.01E+0	1.07E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.92E+0	4.79E-2	3.69E-2	2.01E+0	9.67E-3	6.43E-2	5.81E-4	-1.01E+0	1.07E+0
PET	MJ	2.16E+0	4.86E-2	1.54E-1	2.37E+0	9.80E-3	6.72E-2	6.02E-4	-1.31E+0	1.14E+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	6.66E-4	5.11E-6	2.84E-4	9.55E-4	1.03E-6	4.37E-5	6.73E-7	-3.87E-4	6.14E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.24E-7	1.15E-7	3.28E-8	6.72E-7	2.33E-8	1.08E-7	6.65E-10	-3.79E-7	4.25E-7
NHWD	kg	4.06E-3	2.80E-3	3.20E-4	7.18E-3	5.64E-4	3.08E-3	2.40E-3	-1.55E-3	1.17E-2
RWD	kg	1.97E-6	3.07E-7	3.51E-8	2.32E-6	6.19E-8	2.43E-7	3.57E-9	-7.43E-7	1.88E-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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