Environmental Profile

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

Ecochain v3.5.80

Product:	3059251 - Tigris PERT/Al/PE Pipe WT 16x2.0 L=5
Unit:	1 piece
Manufacturer:	Wavin - PL - MPC

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	30-06-2023
End of validity:	30-06-2028
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 - PL - MPC (2021). (☑ = 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 EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 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	2.57E+0	6.04E-2	8.02E-2	2.72E+0	7.67E-3	1.35E+0	2.68E-2	2.02E-1	4.30E+0
GWP-f	kg CO2 eq	2.84E+0	6.04E-2	6.36E-2	2.96E+0	7.66E-3	1.08E+0	2.67E-2	2.02E-1	4.28E+0
GWP-b	kg CO2 eq	-2.69E-1	2.72E-5	1.66E-2	-2.52E-1	4.65E-6	2.67E-1	1.23E-4	-2.75E-3	1.23E-2
GWP-luluc	kg CO2 eq	7.36E-3	2.24E-5	4.83E-5	7.44E-3	2.71E-6	3.35E-6	6.46E-7	2.72E-3	1.02E-2
ODP	kg CFC11 eq	1.11E-7	1.33E-8	3.65E-9	1.28E-7	1.77E-9	1.53E-9	7.64E-10	-4.12E-8	9.06E-8
AP	mol H+ eq	1.64E-2	3.73E-4	4.68E-4	1.72E-2	4.36E-5	1.62E-4	1.90E-5	4.58E-3	2.20E-2
EP-fw	kg P eq	8.88E-5	6.04E-7	2.74E-6	9.21E-5	6.30E-8	1.71E-7	2.98E-8	2.40E-5	1.16E-4
EP-m	kg N eq	2.53E-3	1.28E-4	6.00E-5	2.72E-3	1.56E-5	7.20E-5	1.19E-5	5.91E-4	3.41E-3
EP-T	mol N eq	2.84E-2	1.42E-3	6.56E-4	3.05E-2	1.72E-4	8.17E-4	7.68E-5	6.40E-3	3.80E-2
POCP	kg NMVOC eq	9.42E-3	4.02E-4	2.19E-4	1.00E-2	4.92E-5	2.19E-4	2.76E-5	2.08E-3	1.24E-2
ADP-mm	kg Sb eq	1.98E-5	1.51E-6	5.89E-6	2.72E-5	1.98E-7	9.70E-8	1.89E-8	-1.58E-4	-1.31E-4
ADP-f	MJ	4.91E+1	9.09E-1	5.36E-1	5.06E+1	1.18E-1	9.50E-2	5.75E-2	1.34E+0	5.22E+1
WDP	m3 depriv.	1.07E+0	3.23E-3	1.82E-2	1.09E+0	3.61E-4	1.24E-3	2.89E-4	1.45E-1	1.24E+0
PM	disease inc.	1.84E-7	5.37E-9	3.31E-9	1.93E-7	6.91E-10	1.52E-9	3.80E-10	5.65E-8	2.52E-7
IR	kBq U-235 eq	6.10E-2	3.81E-3	5.53E-4	6.54E-2	5.14E-4	3.23E-4	2.98E-4	8.51E-3	7.50E-2
ETP-fw	CTUe	5.90E+1	8.08E-1	3.80E+0	6.36E+1	9.55E-2	3.95E-1	2.74E+1	1.56E+1	1.07E+2
HTP-c	CTUh	3.00E-9	2.65E-11	1.96E-10	3.22E-9	3.40E-12	1.67E-10	2.27E-12	9.55E-10	4.35E-9
HTP-nc	CTUh	5.56E-8	8.82E-10	4.88E-9	6.14E-8	1.14E-10	1.17E-9	4.83E-11	1.65E-8	7.92E-8
SQP	Pt	3.04E+1	7.81E-1	7.15E-1	3.19E+1	1.01E-1	6.32E-2	1.38E-1	-4.32E+0	2.79E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.75E+0	7.26E-5	7.08E+0	1.38E+1	1.69E-3	4.20E-3	3.74E-3	-1.31E-1	1.37E+1
PERM	MJ	0	1.12E-2	0	1.12E-2	0	0	0	0	1.12E-2
PERT	MJ	6.75E+0	1.13E-2	7.08E+0	1.38E+1	1.69E-3	4.20E-3	3.74E-3	-1.31E-1	1.37E+1
PENRE	MJ	5.25E+1	1.14E-2	5.73E-1	5.31E+1	1.25E-1	1.02E-1	6.10E-2	9.74E-1	5.44E+1
PENRM	MJ	0	9.54E-1	0	9.54E-1	0	0	0	0	9.54E-1
PENRT	MJ	5.25E+1	9.65E-1	5.73E-1	5.41E+1	1.25E-1	1.02E-1	6.10E-2	9.74E-1	5.53E+1
PET	MJ	5.93E+1	9.76E-1	7.65E+0	6.79E+1	1.27E-1	1.06E-1	6.47E-2	8.42E-1	6.90E+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	2.68E-2	1.10E-4	5.07E-4	2.74E-2	1.33E-5	2.19E-4	7.21E-5	4.96E-3	3.27E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.13E-4	2.29E-6	2.42E-7	8.15E-4	3.01E-7	4.07E-7	6.86E-8	-3.35E-4	4.81E-4
NHWD	kg	4.13E-1	5.70E-2	4.22E-3	4.74E-1	7.29E-3	1.22E-2	2.34E-1	1.32E-1	8.60E-1
RWD	kg	6.01E-5	5.97E-6	3.54E-7	6.64E-5	8.00E-7	4.13E-7	3.83E-7	8.24E-6	7.62E-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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