Environmental Profile

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

Ecochain v4.3.1

Ecochain

Product:	16717 - TUBO ESG SL DN250X6M PL	LCA standard:	EN15804+A2 (2019)
Unit:	1 piece	Standard database:	Worldwide - Ecoinvent v 3.8 Cut-Off
Manufacturer:	Wavin - BR - Ribeirao das Neves	Externally verified:	No
		Export date:	03-02-2025

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - BR - Ribeirao das Neves (2022). (☑ = 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	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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	A5	C4	Total
GWP-total	kg CO2 eq	4.579E+1	1.829E+0	4.519E-1	4.807E+1	0	2.338E+0	5.040E+1
GWP-f	kg CO2 eq	4.555E+1	1.811E+0	3.952E-1	4.776E+1	0	2.341E+0	5.010E+1
GWP-b	kg CO2 eq	2.060E-1	5.057E-3	5.640E-2	2.674E-1	0	1.066E-4	2.675E-1
GWP-luluc	kg CO2 eq	3.830E-2	1.281E-2	3.745E-4	5.149E-2	0	3.072E-5	5.152E-2
ODP	kg CFC11 eq	1.994E-5	3.836E-7	2.996E-8	2.035E-5	0	2.584E-8	2.038E-5
AP	mol H+ eq	2.147E-1	9.984E-3	2.852E-3	2.276E-1	0	1.065E-3	2.287E-1
EP-fw	kg P eq	1.544E-3	2.100E-5	1.917E-5	1.584E-3	0	5.382E-7	1.584E-3
EP-m	kg N eq	3.781E-2	3.541E-3	6.552E-4	4.201E-2	0	5.808E-4	4.259E-2
EP-T	mol N eq	4.020E-1	3.841E-2	5.599E-3	4.460E-1	0	4.786E-3	4.508E-1
POCP	kg NMVOC eq	1.316E-1	1.110E-2	1.761E-3	1.444E-1	0	1.910E-3	1.463E-1
ADP-mm	kg Sb eq	9.516E-4	6.177E-6	3.387E-5	9.916E-4	0	9.990E-8	9.917E-4
ADP-f	MJ	9.497E+2	2.725E+1	4.249E+0	9.812E+2	0	1.716E+0	9.830E+2
WDP	m3 depriv.	2.444E+1	1.071E-1	1.824E-1	2.473E+1	0	3.029E-2	2.476E+1
PM	disease inc.	1.901E-6	1.970E-7	3.895E-8	2.137E-6	0	2.625E-8	2.163E-6
IR	kBq U-235 eq	1.093E+0	1.141E-1	1.092E-2	1.218E+0	0	7.178E-3	1.225E+0
ETP-fw	CTUe	1.051E+3	2.424E+1	1.900E+1	1.094E+3	0	3.381E+1	1.128E+3
HTP-c	CTUh	3.167E-8	8.719E-10	1.617E-9	3.416E-8	0	5.196E-11	3.421E-8
HTP-nc	CTUh	8.149E-7	2.560E-8	2.369E-8	8.642E-7	0	7.158E-9	8.714E-7
SQP	Pt	1.200E+2	2.455E+1	5.108E+0	1.496E+2	0	5.834E+0	1.555E+2
Resource use	Unit	A1	A2	A3	A1-A3	A5	C4	Total
PERE	MJ	3.463E+1	4.691E-1	2.935E+1	6.445E+1	0	1.263E-2	6.446E+1
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	3.463E+1	4.691E-1	2.935E+1	6.445E+1	0	1.263E-2	6.446E+1
PENRE	MJ	1.020E+3	2.902E+1	4.543E+0	1.054E+3	0	1.823E+0	1.056E+3
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	1.020E+3	2.902E+1	4.543E+0	1.054E+3	0	1.823E+0	1.056E+3
PET	MJ	1.055E+3	2.949E+1	2.227E+0	1.087E+3	0	1.836E+0	1.089E+3
SM	kg	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m3	6.237E-1	3.633E-3	4.875E-3	6.322E-1	0	7.450E-4	6.330E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A5	C4	Total
HWD	kg	1.701E-3	7.119E-5	2.522E-5	1.798E-3	0	3.920E-6	1.801E-3
NHWD	kg	5.021E+0	1.888E+0	3.248E-1	7.233E+0	0	4.012E+0	1.125E+1
RWD	kg	9.349E-4	1.794E-4	1.287E-5	1.127E-3	0	1.155E-5	1.139E-3
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0