Environmental Profile

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

Ecochain v4.3.1

Ecochain

Product:	16730 - TUBO ESG SN DN200X6M 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	4.370E+1	1.746E+0	4.359E-1	4.588E+1	0	2.231E+0	4.811E+1
GWP-f	kg CO2 eq	4.347E+1	1.729E+0	3.801E-1	4.558E+1	0	2.234E+0	4.782E+1
GWP-b	kg CO2 eq	1.966E-1	4.826E-3	5.546E-2	2.569E-1	0	1.018E-4	2.570E-1
GWP-luluc	kg CO2 eq	3.656E-2	1.223E-2	3.582E-4	4.914E-2	0	2.933E-5	4.917E-2
ODP	kg CFC11 eq	1.903E-5	3.662E-7	2.901E-8	1.943E-5	0	2.467E-8	1.945E-5
AP	mol H+ eq	2.050E-1	9.529E-3	2.728E-3	2.172E-1	0	1.017E-3	2.183E-1
EP-fw	kg P eq	1.473E-3	2.004E-5	1.842E-5	1.512E-3	0	5.138E-7	1.512E-3
EP-m	kg N eq	3.609E-2	3.379E-3	6.356E-4	4.010E-2	0	5.544E-4	4.066E-2
EP-T	mol N eq	3.837E-1	3.666E-2	5.407E-3	4.258E-1	0	4.568E-3	4.304E-1
POCP	kg NMVOC eq	1.256E-1	1.059E-2	1.697E-3	1.379E-1	0	1.823E-3	1.397E-1
ADP-mm	kg Sb eq	9.084E-4	5.895E-6	3.207E-5	9.463E-4	0	9.536E-8	9.464E-4
ADP-f	MJ	9.065E+2	2.601E+1	4.096E+0	9.366E+2	0	1.638E+0	9.382E+2
WDP	m3 depriv.	2.333E+1	1.022E-1	1.762E-1	2.361E+1	0	2.892E-2	2.364E+1
PM	disease inc.	1.814E-6	1.881E-7	3.759E-8	2.040E-6	0	2.506E-8	2.065E-6
IR	kBq U-235 eq	1.043E+0	1.089E-1	1.052E-2	1.163E+0	0	6.852E-3	1.169E+0
ETP-fw	CTUe	1.003E+3	2.314E+1	1.815E+1	1.044E+3	0	3.227E+1	1.077E+3
HTP-c	CTUh	3.023E-8	8.322E-10	1.538E-9	3.260E-8	0	4.960E-11	3.265E-8
HTP-nc	CTUh	7.778E-7	2.443E-8	2.251E-8	8.248E-7	0	6.831E-9	8.316E-7
SQP	Pt	1.145E+2	2.343E+1	4.869E+0	1.428E+2	0	5.569E+0	1.484E+2
Resource use	Unit	A1	A2	A3	A1-A3	A5	C4	Total
PERE	MJ	3.305E+1	4.477E-1	2.777E+1	6.127E+1	0	1.206E-2	6.128E+1
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	3.305E+1	4.477E-1	2.777E+1	6.127E+1	0	1.206E-2	6.128E+1
PENRE	MJ	9.739E+2	2.770E+1	4.380E+0	1.006E+3	0	1.740E+0	1.008E+3
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	9.739E+2	2.770E+1	4.380E+0	1.006E+3	0	1.740E+0	1.008E+3
PET	MJ	1.007E+3	2.814E+1	2.192E+0	1.037E+3	0	1.752E+0	1.039E+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	5.953E-1	3.468E-3	4.707E-3	6.035E-1	0	7.112E-4	6.042E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	A5	C4	Total
HWD	kg	1.624E-3	6.794E-5	2.402E-5	1.716E-3	0	3.742E-6	1.720E-3
NHWD	kg	4.793E+0	1.802E+0	3.110E-1	6.906E+0	0	3.830E+0	1.074E+1
RWD	kg	8.923E-4	1.712E-4	1.244E-5	1.076E-3	0	1.102E-5	1.087E-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

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