Environmental Profile

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

Ecochain v4.3.1

Product:	14969 - TUBO PBA CL15 EPDM DN50
Unit:	1 piece
Manufacturer:	Wavin - BR - Suapé

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.8 Cut-Off
Externally verified:	Yes
Issue date:	22-10-2024
End of validity:	22-10-2029
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 - BR - Suapé (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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C3	C4	Total
GWP-total	kg CO2 eq	1.209E+1	3.523E-1	1.393E-1	1.259E+1	1.377E-4	6.231E-1	1.321E+1
GWP-f	kg CO2 eq	1.203E+1	3.509E-1	1.193E-1	1.250E+1	1.377E-4	6.238E-1	1.312E+1
GWP-b	kg CO2 eq	5.528E-2	3.543E-4	1.992E-2	7.555E-2	1.208E-7	2.533E-5	7.557E-2
GWP-luluc	kg CO2 eq	1.042E-2	1.106E-3	6.970E-5	1.159E-2	1.585E-8	6.851E-6	1.160E-2
ODP	kg CFC11 eq	5.303E-6	7.140E-8	7.758E-9	5.382E-6	5.657E-12	6.346E-9	5.388E-6
AP	mol H+ eq	5.628E-2	7.786E-3	3.886E-4	6.445E-2	1.518E-7	2.715E-4	6.472E-2
EP-fw	kg P eq	4.135E-4	2.327E-6	2.297E-6	4.182E-4	2.709E-10	1.280E-7	4.183E-4
EP-m	kg N eq	1.005E-2	1.995E-3	1.079E-4	1.215E-2	7.298E-8	1.518E-4	1.231E-2
EP-T	mol N eq	1.070E-1	2.211E-2	9.617E-4	1.300E-1	5.698E-7	1.229E-3	1.313E-1
POCP	kg NMVOC eq	3.491E-2	5.810E-3	3.128E-4	4.103E-2	1.912E-7	4.957E-4	4.153E-2
ADP-mm	kg Sb eq	2.775E-4	7.540E-7	1.725E-6	2.799E-4	7.220E-11	2.328E-8	2.800E-4
ADP-f	MJ	2.513E+2	4.790E+0	1.138E+0	2.572E+2	4.158E-4	4.196E-1	2.577E+2
WDP	m3 depriv.	6.442E+0	1.270E-2	1.054E-1	6.560E+0	1.143E-5	6.344E-3	6.566E+0
PM	disease inc.	4.967E-7	2.130E-8	7.042E-9	5.251E-7	2.969E-12	6.748E-9	5.318E-7
IR	kBq U-235 eq	3.008E-1	2.032E-2	2.339E-3	3.235E-1	1.659E-6	1.759E-3	3.252E-1
ETP-fw	CTUe	2.916E+2	3.493E+0	2.123E+0	2.972E+2	3.947E-4	8.960E+0	3.062E+2
HTP-c	CTUh	8.301E-9	1.951E-10	2.393E-10	8.736E-9	1.321E-14	1.310E-11	8.749E-9
HTP-nc	CTUh	2.254E-7	2.992E-9	2.091E-9	2.305E-7	3.030E-13	1.888E-9	2.324E-7
SQP	Pt	3.061E+1	2.189E+0	9.563E-1	3.376E+1	7.324E-4	1.476E+0	3.524E+1
Resource use	Unit	A1	A2	A3	A1-A3	C3	C4	Total
PERE	MJ	9.289E+0	5.343E-2	1.127E+1	2.062E+1	6.526E-6	3.008E-3	2.062E+1
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	9.289E+0	5.343E-2	1.127E+1	2.062E+1	6.526E-6	3.008E-3	2.062E+1
PENRE	MJ	2.700E+2	5.093E+0	1.225E+0	2.763E+2	4.418E-4	4.457E-1	2.767E+2
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	2.700E+2	5.093E+0	1.225E+0	2.763E+2	4.418E-4	4.457E-1	2.767E+2
PET	MJ	2.793E+2	5.146E+0	1.250E+1	2.969E+2	4.484E-4	4.487E-1	2.973E+2
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	1.649E-1	4.303E-4	2.622E-3	1.680E-1	2.830E-7	1.573E-4	1.682E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C3	C4	Total
HWD	kg	7.062E-4	7.856E-6	3.782E-6	7.178E-4	8.083E-10	9.884E-7	7.188E-4
NHWD	kg	1.232E+0	1.465E-1	8.347E-2	1.462E+0	1.013E-3	8.175E-1	2.280E+0
RWD	kg	2.583E-4	3.254E-5	2.731E-6	2.935E-4	2.561E-9	2.832E-6	2.964E-4
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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