Environmental Profile

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

Ecochain v3.5.71

Product:	3066558 - PVC-U Soil Branch 87.5° WT 110 D/S S
Unit:	1 piece
Manufacturer:	Wavin - UK - Chippenham - Verified

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	09-02-2023
End of validity:	09-02-2028
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 - UK - Chippenham - Verified (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 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	1.64E+0	2.49E-2	1.24E-1	1.79E+0	1.99E-2	5.63E-1	9.02E-3	-7.87E-1	1.59E+0
GWP-f	kg CO2 eq	1.58E+0	2.49E-2	1.20E-1	1.73E+0	1.99E-2	5.64E-1	9.02E-3	-7.81E-1	1.54E+0
GWP-b	kg CO2 eq	5.13E-2	1.50E-5	3.36E-3	5.47E-2	1.21E-5	-7.46E-4	6.75E-6	-5.77E-3	4.82E-2
GWP-luluc	kg CO2 eq	4.80E-3	8.85E-6	9.76E-5	4.91E-3	7.03E-6	1.12E-4	3.44E-7	-5.29E-4	4.50E-3
ODP	kg CFC11 eq	1.40E-7	5.73E-9	1.13E-8	1.57E-7	4.58E-9	1.46E-8	2.46E-10	-4.00E-7	-2.24E-7
AP	mol H+ eq	1.57E-2	1.46E-4	6.39E-4	1.64E-2	1.13E-4	5.95E-4	6.71E-6	-3.13E-3	1.40E-2
EP-fw	kg P eq	1.64E-4	2.04E-7	1.66E-6	1.66E-4	1.64E-7	3.22E-6	1.31E-8	-3.02E-5	1.39E-4
EP-m	kg N eq	3.09E-3	5.18E-5	1.30E-4	3.27E-3	4.05E-5	1.70E-4	2.82E-6	-5.34E-4	2.95E-3
EP-T	mol N eq	3.85E-2	5.71E-4	1.40E-3	4.04E-2	4.46E-4	1.86E-3	2.51E-5	-5.68E-3	3.71E-2
POCP	kg NMVOC eq	9.10E-3	1.63E-4	6.32E-4	9.89E-3	1.28E-4	5.90E-4	9.17E-6	-2.01E-3	8.61E-3
ADP-mm	kg Sb eq	3.25E-2	6.40E-7	2.81E-6	3.25E-2	5.14E-7	2.43E-6	8.24E-9	-1.68E-5	3.25E-2
ADP-f	MJ	2.62E+1	3.81E-1	1.33E+0	2.80E+1	3.05E-1	1.95E+0	1.86E-2	-1.99E+1	1.03E+1
WDP	m3 depriv.	1.70E+0	1.17E-3	4.12E-2	1.74E+0	9.36E-4	3.63E-2	7.34E-4	-1.19E+0	5.95E-1
PM	disease inc.	7.43E-8	2.23E-9	4.33E-9	8.08E-8	1.79E-9	9.91E-9	1.29E-10	-2.02E-8	7.24E-8
IR	kBq U-235 eq	1.55E-1	1.67E-3	3.40E-3	1.60E-1	1.33E-3	5.85E-3	7.48E-5	-3.79E-2	1.30E-1
ETP-fw	CTUe	3.13E+2	3.09E-1	3.37E+0	3.16E+2	2.48E-1	2.22E+0	1.66E-2	-1.13E+1	3.07E+2
HTP-c	CTUh	7.45E-9	1.10E-11	1.32E-10	7.59E-9	8.82E-12	6.25E-10	9.33E-13	-4.29E-10	7.80E-9
HTP-nc	CTUh	2.20E-7	3.68E-10	7.72E-9	2.28E-7	2.95E-10	4.18E-9	1.32E-11	-1.49E-8	2.17E-7
SQP	Pt	1.26E+1	3.25E-1	4.43E-1	1.34E+1	2.61E-1	1.55E+0	4.47E-2	-2.08E+0	1.31E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.16E+0	5.45E-3	6.87E+0	1.00E+1	4.38E-3	9.55E-2	3.68E-4	-8.60E-1	9.28E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.16E+0	5.45E-3	6.87E+0	1.00E+1	4.38E-3	9.55E-2	3.68E-4	-8.60E-1	9.28E+0
PENRE	MJ	2.79E+1	4.05E-1	1.41E+0	2.97E+1	3.24E-1	2.08E+0	1.98E-2	-2.14E+1	1.08E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.79E+1	4.05E-1	1.41E+0	2.97E+1	3.24E-1	2.08E+0	1.98E-2	-2.14E+1	1.08E+1
PET	MJ	3.11E+1	4.10E-1	8.28E+0	3.98E+1	3.28E-1	2.17E+0	2.02E-2	-2.22E+1	2.01E+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	4.92E-2	4.30E-5	1.18E-3	5.04E-2	3.45E-5	1.10E-3	1.99E-5	-1.24E-2	3.91E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.14E-3	9.71E-7	1.31E-5	4.15E-3	7.80E-7	3.51E-6	2.80E-8	-1.52E-5	4.14E-3
NHWD	kg	2.79E-1	2.35E-2	2.67E-3	3.06E-1	1.89E-2	9.90E-2	7.57E-2	-6.26E-2	4.37E-1
RWD	kg	1.19E-4	2.59E-6	3.47E-6	1.25E-4	2.07E-6	7.42E-6	1.13E-7	-3.32E-5	1.02E-4
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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777