Environmental Profile

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

Ecochain v3.5.71

Product:	3036644 - OsmaS PVCU Branch 45° BK 110x110 S/S
Unit:	1 piece
Manufacturer:	Wavin - UK - Chippenham - Verified

The Wavin Osma soil range offers an exceptional choice of pipe & fittings including brackets, bends, junctions, access fittings, and terminations. To connect to your soil system, we offer push-fit & solvent weld waste ranges, together with trap, overflow & condensate ranges to cover all installation needs.

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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.73E+0	7.24E-2	1.83E-1	1.99E+0	2.20E-2	6.68E-1	7.08E-3	-9.64E-1	1.72E+0
GWP-f	kg CO2 eq	1.72E+0	7.23E-2	1.79E-1	1.97E+0	2.20E-2	6.68E-1	7.08E-3	-9.57E-1	1.71E+0
GWP-b	kg CO2 eq	1.07E-2	-1.08E-5	3.96E-3	1.47E-2	1.33E-5	-6.17E-4	8.69E-6	-6.37E-3	7.71E-3
GWP-luluc	kg CO2 eq	1.39E-3	4.59E-5	1.62E-4	1.59E-3	7.78E-6	2.62E-4	1.83E-7	-5.87E-4	1.28E-3
ODP	kg CFC11 eq	8.80E-7	1.49E-8	1.52E-8	9.10E-7	5.07E-9	7.06E-8	2.59E-10	-4.55E-7	5.32E-7
AP	mol H+ eq	7.97E-3	2.02E-3	9.91E-4	1.10E-2	1.25E-4	1.22E-3	6.30E-6	-3.50E-3	8.84E-3
EP-fw	kg P eq	7.52E-5	3.47E-7	2.52E-6	7.80E-5	1.81E-7	8.72E-6	8.27E-9	-3.34E-5	5.35E-5
EP-m	kg N eq	1.34E-3	5.05E-4	1.88E-4	2.03E-3	4.48E-5	2.98E-4	4.13E-6	-6.09E-4	1.77E-3
EP-T	mol N eq	1.46E-2	5.62E-3	2.06E-3	2.23E-2	4.94E-4	3.28E-3	2.51E-5	-6.48E-3	1.96E-2
POCP	kg NMVOC eq	5.17E-3	1.46E-3	8.75E-4	7.51E-3	1.41E-4	9.84E-4	8.67E-6	-2.27E-3	6.37E-3
ADP-mm	kg Sb eq	9.34E-4	7.63E-7	4.67E-6	9.39E-4	5.69E-7	4.80E-6	6.32E-9	-1.85E-5	9.26E-4
ADP-f	MJ	4.54E+1	9.56E-1	1.98E+0	4.83E+1	3.37E-1	3.34E+0	1.89E-2	-2.33E+1	2.87E+1
WDP	m3 depriv.	2.71E+0	1.70E-3	5.84E-2	2.77E+0	1.04E-3	1.31E-1	1.28E-4	-1.31E+0	1.59E+0
PM	disease inc.	5.60E-8	2.95E-9	6.83E-9	6.58E-8	1.98E-9	1.52E-8	1.30E-10	-2.23E-8	6.09E-8
IR	kBq U-235 eq	9.69E-2	4.12E-3	4.68E-3	1.06E-1	1.47E-3	1.17E-2	8.68E-5	-4.22E-2	7.67E-2
ETP-fw	CTUe	3.57E+1	6.47E-1	5.40E+0	4.17E+1	2.74E-1	2.51E+1	2.78E-1	-1.26E+1	5.48E+1
HTP-c	CTUh	1.25E-9	3.95E-11	2.12E-10	1.50E-9	9.75E-12	3.82E-10	5.22E-13	-4.80E-10	1.42E-9
HTP-nc	CTUh	3.99E-8	5.77E-10	1.05E-8	5.10E-8	3.27E-10	8.91E-9	5.39E-11	-1.66E-8	4.37E-8
SQP	Pt	5.81E+0	2.64E-1	7.00E-1	6.77E+0	2.89E-1	2.08E+0	4.83E-2	-2.34E+0	6.85E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.12E+0	7.87E-3	1.15E+1	1.36E+1	4.84E-3	2.40E-1	7.03E-4	-9.51E-1	1.29E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.12E+0	7.87E-3	1.15E+1	1.36E+1	4.84E-3	2.40E-1	7.03E-4	-9.51E-1	1.29E+1
PENRE	MJ	4.86E+1	1.01E+0	2.11E+0	5.17E+1	3.58E-1	3.56E+0	2.01E-2	-2.51E+1	3.06E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.86E+1	1.01E+0	2.11E+0	5.17E+1	3.58E-1	3.56E+0	2.01E-2	-2.51E+1	3.06E+1
PET	MJ	5.07E+1	1.02E+0	1.36E+1	6.54E+1	3.63E-1	3.80E+0	2.08E-2	-2.60E+1	4.35E+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	3.09E-2	6.12E-5	1.73E-3	3.27E-2	3.82E-5	3.59E-3	2.31E-5	-1.38E-2	2.26E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.42E-4	1.18E-6	1.58E-5	1.59E-4	8.63E-7	5.41E-6	2.30E-8	-1.89E-5	1.46E-4
NHWD	kg	1.61E-1	1.34E-2	3.28E-3	1.78E-1	2.09E-2	1.26E-1	8.36E-2	-6.97E-2	3.38E-1
RWD	kg	8.90E-5	6.62E-6	4.19E-6	9.98E-5	2.29E-6	1.25E-5	1.23E-7	-3.73E-5	7.74E-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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