Environmental Profile

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

Ecochain v3.5.71

Product:	3036405 - OsmaDrain Sealed Cover for 4D900/1 BK
Unit:	1 piece
Manufacturer:	Wavin - UK - Chippenham - Verified

Wavin OsmaDrain - the definitive & comprehensive PVC-U gravity drainage system for residential, commercial & industrial projects. The source for all types of gravity drainage, sewer installation & pressure pipe systems in any private or public development. One of the UK's most trusted & leading names in plastic drainage systems.

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

An Orbia business.

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	9.96E-1	3.62E-2	9.60E-2	1.13E+0	1.09E-2	4.53E-1	3.47E-3	-5.51E-1	1.05E+0
GWP-f	kg CO2 eq	9.93E-1	3.62E-2	9.35E-2	1.12E+0	1.09E-2	4.53E-1	3.46E-3	-5.47E-1	1.04E+0
GWP-b	kg CO2 eq	2.55E-3	-6.76E-6	2.42E-3	4.96E-3	6.63E-6	-2.93E-4	4.34E-6	-3.22E-3	1.46E-3
GWP-luluc	kg CO2 eq	8.13E-4	2.35E-5	7.89E-5	9.15E-4	3.87E-6	1.35E-4	9.19E-8	-3.00E-4	7.54E-4
ODP	kg CFC11 eq	4.61E-7	7.40E-9	8.46E-9	4.77E-7	2.52E-9	3.69E-8	1.30E-10	-2.38E-7	2.78E-7
AP	mol H+ eq	4.58E-3	1.05E-3	5.04E-4	6.14E-3	6.22E-5	6.40E-4	3.15E-6	-1.80E-3	5.04E-3
EP-fw	kg P eq	4.26E-5	1.67E-7	1.30E-6	4.41E-5	8.99E-8	4.50E-6	4.14E-9	-1.70E-5	3.16E-5
EP-m	kg N eq	7.82E-4	2.62E-4	9.98E-5	1.14E-3	2.23E-5	1.59E-4	1.99E-6	-3.21E-4	1.01E-3
EP-T	mol N eq	8.55E-3	2.91E-3	1.09E-3	1.25E-2	2.45E-4	1.75E-3	1.26E-5	-3.42E-3	1.11E-2
POCP	kg NMVOC eq	3.08E-3	7.56E-4	4.79E-4	4.32E-3	7.02E-5	5.21E-4	4.32E-6	-1.19E-3	3.72E-3
ADP-mm	kg Sb eq	4.86E-4	3.54E-7	2.27E-6	4.89E-4	2.83E-7	2.47E-6	3.17E-9	-9.57E-6	4.82E-4
ADP-f	MJ	2.58E+1	4.74E-1	1.03E+0	2.73E+1	1.68E-1	1.71E+0	9.46E-3	-1.27E+1	1.65E+1
WDP	m3 depriv.	1.49E+0	8.07E-4	3.15E-2	1.52E+0	5.15E-4	6.78E-2	6.51E-5	-6.64E-1	9.24E-1
PM	disease inc.	3.23E-8	1.39E-9	3.44E-9	3.72E-8	9.86E-10	7.85E-9	6.51E-11	-1.12E-8	3.48E-8
IR	kBq U-235 eq	5.17E-2	2.04E-3	2.57E-3	5.63E-2	7.33E-4	6.02E-3	4.34E-5	-2.17E-2	4.14E-2
ETP-fw	CTUe	2.00E+1	3.17E-1	2.69E+0	2.30E+1	1.36E-1	1.32E+1	1.46E-1	-6.46E+0	3.01E+1
HTP-c	CTUh	6.85E-10	1.99E-11	1.05E-10	8.10E-10	4.85E-12	2.07E-10	2.62E-13	-2.48E-10	7.74E-10
HTP-nc	CTUh	2.17E-8	2.76E-10	5.82E-9	2.78E-8	1.62E-10	4.71E-9	2.80E-11	-8.44E-9	2.42E-8
SQP	Pt	3.47E+0	1.15E-1	3.52E-1	3.94E+0	1.43E-1	1.06E+0	2.42E-2	-1.22E+0	3.95E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.21E+0	3.74E-3	5.57E+0	6.79E+0	2.41E-3	1.24E-1	3.49E-4	-4.83E-1	6.44E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.21E+0	3.74E-3	5.57E+0	6.79E+0	2.41E-3	1.24E-1	3.49E-4	-4.83E-1	6.44E+0
PENRE	MJ	2.76E+1	5.04E-1	1.10E+0	2.92E+1	1.78E-1	1.82E+0	1.00E-2	-1.37E+1	1.76E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.76E+1	5.04E-1	1.10E+0	2.92E+1	1.78E-1	1.82E+0	1.00E-2	-1.37E+1	1.76E+1
PET	MJ	2.89E+1	5.07E-1	6.67E+0	3.60E+1	1.80E-1	1.95E+0	1.04E-2	-1.42E+1	2.40E+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	1.78E-2	2.90E-5	9.14E-4	1.88E-2	1.90E-5	1.89E-3	1.16E-5	-7.00E-3	1.37E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.52E-5	5.50E-7	9.50E-6	8.53E-5	4.29E-7	2.81E-6	1.15E-8	-1.10E-5	7.75E-5
NHWD	kg	9.35E-2	5.33E-3	1.95E-3	1.01E-1	1.04E-2	6.86E-2	4.18E-2	-3.57E-2	1.86E-1
RWD	kg	4.64E-5	3.29E-6	2.52E-6	5.22E-5	1.14E-6	6.44E-6	6.15E-8	-1.94E-5	4.04E-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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