Environmental Profile

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

Ecochain v3.5.71

Product:	3037169 - OsmaD UnJunc 87° BN 160x110x160 SN8 D/S
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

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	2.93E+0	1.27E-1	3.01E-1	3.36E+0	3.86E-2	1.07E+0	1.27E-2	-1.63E+0	2.85E+0
GWP-f	kg CO2 eq	2.91E+0	1.27E-1	2.93E-1	3.33E+0	3.86E-2	1.07E+0	1.27E-2	-1.62E+0	2.83E+0
GWP-b	kg CO2 eq	1.97E-2	-1.38E-5	7.41E-3	2.71E-2	2.34E-5	-1.11E-3	1.53E-5	-1.10E-2	1.50E-2
GWP-luluc	kg CO2 eq	2.32E-3	7.87E-5	2.49E-4	2.65E-3	1.37E-5	4.46E-4	3.22E-7	-1.01E-3	2.10E-3
ODP	kg CFC11 eq	1.47E-6	2.63E-8	2.63E-8	1.53E-6	8.90E-9	1.19E-7	4.55E-10	-7.74E-7	8.81E-7
AP	mol H+ eq	1.36E-2	3.41E-3	1.58E-3	1.86E-2	2.20E-4	2.07E-3	1.11E-5	-6.07E-3	1.48E-2
EP-fw	kg P eq	1.27E-4	6.33E-7	4.07E-6	1.31E-4	3.18E-7	1.48E-5	1.45E-8	-5.76E-5	8.89E-5
EP-m	kg N eq	2.25E-3	8.54E-4	3.12E-4	3.42E-3	7.87E-5	5.06E-4	7.68E-6	-1.05E-3	2.96E-3
EP-T	mol N eq	2.47E-2	9.49E-3	3.40E-3	3.76E-2	8.67E-4	5.58E-3	4.41E-5	-1.12E-2	3.29E-2
POCP	kg NMVOC eq	8.80E-3	2.48E-3	1.49E-3	1.28E-2	2.48E-4	1.68E-3	1.53E-5	-3.94E-3	1.08E-2
ADP-mm	kg Sb eq	1.58E-3	1.45E-6	7.19E-6	1.59E-3	9.99E-7	8.20E-6	1.11E-8	-3.20E-5	1.57E-3
ADP-f	MJ	7.72E+1	1.69E+0	3.24E+0	8.21E+1	5.93E-1	5.74E+0	3.32E-2	-4.01E+1	4.84E+1
WDP	m3 depriv.	4.55E+0	3.14E-3	9.81E-2	4.65E+0	1.82E-3	2.21E-1	2.21E-4	-2.26E+0	2.61E+0
PM	disease inc.	9.57E-8	5.52E-9	1.08E-8	1.12E-7	3.49E-9	2.61E-8	2.29E-10	-3.90E-8	1.03E-7
IR	kBq U-235 eq	1.67E-1	7.30E-3	7.99E-3	1.82E-1	2.59E-3	1.99E-2	1.53E-4	-7.27E-2	1.32E-1
ETP-fw	CTUe	6.02E+1	1.16E+0	8.48E+0	6.98E+1	4.81E-1	4.19E+1	4.64E-1	-2.16E+1	9.10E+1
HTP-c	CTUh	2.13E-9	6.87E-11	3.33E-10	2.54E-9	1.71E-11	6.45E-10	9.13E-13	-8.26E-10	2.37E-9
HTP-nc	CTUh	6.74E-8	1.06E-9	1.81E-8	8.65E-8	5.74E-10	1.50E-8	9.08E-11	-2.85E-8	7.37E-8
SQP	Pt	9.90E+0	5.29E-1	1.11E+0	1.15E+1	5.07E-1	3.60E+0	8.49E-2	-4.02E+0	1.17E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.58E+0	1.46E-2	1.77E+1	2.13E+1	8.50E-3	4.08E-1	1.25E-3	-1.64E+0	2.00E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.58E+0	1.46E-2	1.77E+1	2.13E+1	8.50E-3	4.08E-1	1.25E-3	-1.64E+0	2.00E+1
PENRE	MJ	8.28E+1	1.80E+0	3.44E+0	8.80E+1	6.29E-1	6.10E+0	3.53E-2	-4.32E+1	5.15E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	8.28E+1	1.80E+0	3.44E+0	8.80E+1	6.29E-1	6.10E+0	3.53E-2	-4.32E+1	5.15E+1
PET	MJ	8.63E+1	1.81E+0	2.11E+1	1.09E+2	6.38E-1	6.51E+0	3.65E-2	-4.49E+1	7.16E+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	5.25E-2	1.14E-4	2.86E-3	5.54E-2	6.71E-5	6.09E-3	4.07E-5	-2.39E-2	3.78E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.35E-4	2.23E-6	2.92E-5	2.67E-4	1.52E-6	9.27E-6	4.05E-8	-3.14E-5	2.46E-4
NHWD	kg	2.73E-1	2.88E-2	5.99E-3	3.08E-1	3.67E-2	2.14E-1	1.47E-1	-1.20E-1	5.85E-1
RWD	kg	1.55E-4	1.17E-5	7.74E-6	1.74E-4	4.03E-6	2.15E-5	2.16E-7	-6.41E-5	1.36E-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

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