Environmental Profile

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

Ecochain v3.5.71

Product:	3032508 - OsmaDrain Junction 87.5° BN 110 SN8 S/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	1.67E+0	6.97E-2	1.47E-1	1.88E+0	2.12E-2	6.43E-1	6.81E-3	-9.28E-1	1.63E+0
GWP-f	kg CO2 eq	1.66E+0	6.97E-2	1.43E-1	1.87E+0	2.11E-2	6.43E-1	6.81E-3	-9.21E-1	1.62E+0
GWP-b	kg CO2 eq	1.03E-2	-1.03E-5	3.43E-3	1.37E-2	1.28E-5	-5.94E-4	8.37E-6	-6.13E-3	7.02E-3
GWP-luluc	kg CO2 eq	1.34E-3	4.41E-5	1.25E-4	1.51E-3	7.48E-6	2.52E-4	1.76E-7	-5.64E-4	1.21E-3
ODP	kg CFC11 eq	8.39E-7	1.43E-8	1.25E-8	8.66E-7	4.87E-9	6.79E-8	2.49E-10	-4.37E-7	5.02E-7
AP	mol H+ eq	7.68E-3	1.95E-3	7.82E-4	1.04E-2	1.20E-4	1.17E-3	6.05E-6	-3.37E-3	8.35E-3
EP-fw	kg P eq	7.27E-5	3.35E-7	2.00E-6	7.50E-5	1.74E-7	8.38E-6	7.94E-9	-3.21E-5	5.15E-5
EP-m	kg N eq	1.29E-3	4.86E-4	1.52E-4	1.93E-3	4.31E-5	2.86E-4	3.98E-6	-5.86E-4	1.67E-3
EP-T	mol N eq	1.41E-2	5.40E-3	1.66E-3	2.12E-2	4.75E-4	3.16E-3	2.41E-5	-6.24E-3	1.86E-2
POCP	kg NMVOC eq	4.98E-3	1.41E-3	7.16E-4	7.10E-3	1.36E-4	9.46E-4	8.34E-6	-2.19E-3	6.01E-3
ADP-mm	kg Sb eq	8.86E-4	7.38E-7	3.61E-6	8.90E-4	5.47E-7	4.61E-6	6.08E-9	-1.78E-5	8.77E-4
ADP-f	MJ	4.33E+1	9.21E-1	1.59E+0	4.58E+1	3.24E-1	3.21E+0	1.82E-2	-2.24E+1	2.69E+1
WDP	m3 depriv.	2.61E+0	1.64E-3	4.74E-2	2.66E+0	9.96E-4	1.26E-1	1.22E-4	-1.26E+0	1.53E+0
PM	disease inc.	5.26E-8	2.85E-9	5.37E-9	6.09E-8	1.91E-9	1.46E-8	1.25E-10	-2.14E-8	5.61E-8
IR	kBq U-235 eq	9.13E-2	3.97E-3	3.84E-3	9.91E-2	1.42E-3	1.12E-2	8.35E-5	-4.06E-2	7.12E-2
ETP-fw	CTUe	3.43E+1	6.24E-1	4.22E+0	3.91E+1	2.63E-1	2.41E+1	2.67E-1	-1.21E+1	5.17E+1
HTP-c	CTUh	1.21E-9	3.80E-11	1.66E-10	1.41E-9	9.38E-12	3.67E-10	5.01E-13	-4.62E-10	1.33E-9
HTP-nc	CTUh	3.85E-8	5.57E-10	8.65E-9	4.77E-8	3.14E-10	8.57E-9	5.18E-11	-1.59E-8	4.07E-8
SQP	Pt	5.56E+0	2.56E-1	5.49E-1	6.37E+0	2.78E-1	2.00E+0	4.65E-2	-2.25E+0	6.44E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.05E+0	7.60E-3	8.89E+0	1.09E+1	4.65E-3	2.31E-1	6.77E-4	-9.14E-1	1.03E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.05E+0	7.60E-3	8.89E+0	1.09E+1	4.65E-3	2.31E-1	6.77E-4	-9.14E-1	1.03E+1
PENRE	MJ	4.64E+1	9.78E-1	1.68E+0	4.91E+1	3.44E-1	3.42E+0	1.93E-2	-2.42E+1	2.87E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.64E+1	9.78E-1	1.68E+0	4.91E+1	3.44E-1	3.42E+0	1.93E-2	-2.42E+1	2.87E+1
PET	MJ	4.84E+1	9.86E-1	1.06E+1	6.00E+1	3.49E-1	3.65E+0	2.00E-2	-2.51E+1	3.89E+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	3.00E-2	5.91E-5	1.39E-3	3.15E-2	3.67E-5	3.46E-3	2.22E-5	-1.32E-2	2.17E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.35E-4	1.14E-6	1.36E-5	1.49E-4	8.30E-7	5.20E-6	2.22E-8	-1.82E-5	1.37E-4
NHWD	kg	1.56E-1	1.30E-2	2.80E-3	1.72E-1	2.01E-2	1.21E-1	8.04E-2	-6.70E-2	3.26E-1
RWD	kg	8.21E-5	6.38E-6	3.60E-6	9.21E-5	2.21E-6	1.20E-5	1.18E-7	-3.59E-5	7.06E-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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