Environmental Profile

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

Ecochain v3.5.71

Product:	3038905 - Wavin UR Junction 45° BN 150 SN8 D/S
Unit:	1 piece
Manufacturer:	Wavin - UK - Chippenham - Verified

Wavin Osma UltraRib Corrugated pipe systems are designed for use in gravity drainage and sewerage installations at depths of up to 10 metres. Osma UltraRib is a fully socketed system of pipe and fittings which combines secure jointing with ease of installation.

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	3.66E+0	1.58E-1	3.00E-1	4.12E+0	4.89E-2	1.33E+0	1.53E-2	-2.04E+0	3.47E+0
GWP-f	kg CO2 eq	3.62E+0	1.58E-1	2.90E-1	4.07E+0	4.89E-2	1.33E+0	1.53E-2	-2.03E+0	3.44E+0
GWP-b	kg CO2 eq	3.23E-2	-3.40E-5	9.37E-3	4.16E-2	2.97E-5	-1.34E-3	1.93E-5	-1.43E-2	2.60E-2
GWP-luluc	kg CO2 eq	3.02E-3	1.04E-4	2.16E-4	3.34E-3	1.73E-5	6.03E-4	4.07E-7	-1.33E-3	2.64E-3
ODP	kg CFC11 eq	2.03E-6	3.22E-8	2.92E-8	2.09E-6	1.13E-8	1.65E-7	5.75E-10	-1.03E-6	1.24E-6
AP	mol H+ eq	1.68E-2	4.73E-3	1.49E-3	2.30E-2	2.78E-4	2.77E-3	1.40E-5	-7.74E-3	1.84E-2
EP-fw	kg P eq	1.66E-4	7.11E-7	3.93E-6	1.70E-4	4.02E-7	2.02E-5	1.83E-8	-7.56E-5	1.15E-4
EP-m	kg N eq	2.83E-3	1.17E-3	3.20E-4	4.33E-3	9.96E-5	6.67E-4	8.60E-6	-1.34E-3	3.77E-3
EP-T	mol N eq	3.09E-2	1.30E-2	3.42E-3	4.73E-2	1.10E-3	7.36E-3	5.58E-5	-1.42E-2	4.16E-2
POCP	kg NMVOC eq	1.05E-2	3.39E-3	1.61E-3	1.54E-2	3.14E-4	2.20E-3	1.92E-5	-4.94E-3	1.30E-2
ADP-mm	kg Sb eq	2.12E-3	1.46E-6	6.19E-6	2.13E-3	1.26E-6	1.10E-5	1.40E-8	-4.20E-5	2.10E-3
ADP-f	MJ	9.25E+1	2.06E+0	3.20E+0	9.78E+1	7.50E-1	7.59E+0	4.20E-2	-4.94E+1	5.68E+1
WDP	m3 depriv.	6.13E+0	3.38E-3	1.03E-1	6.23E+0	2.30E-3	3.04E-1	2.85E-4	-2.96E+0	3.58E+0
PM	disease inc.	1.09E-7	5.76E-9	9.98E-9	1.25E-7	4.41E-9	3.42E-8	2.89E-10	-4.90E-8	1.14E-7
IR	kBq U-235 eq	2.01E-1	8.86E-3	8.66E-3	2.19E-1	3.28E-3	2.67E-2	1.93E-4	-9.53E-2	1.54E-1
ETP-fw	CTUe	7.85E+1	1.37E+0	7.65E+0	8.75E+1	6.09E-1	5.93E+1	6.57E-1	-2.84E+1	1.20E+2
HTP-c	CTUh	2.82E-9	8.77E-11	3.00E-10	3.21E-9	2.17E-11	8.45E-10	1.16E-12	-1.08E-9	3.00E-9
HTP-nc	CTUh	9.08E-8	1.17E-9	1.98E-8	1.12E-7	7.26E-10	2.05E-8	1.26E-10	-3.75E-8	9.56E-8
SQP	Pt	1.19E+1	4.47E-1	1.02E+0	1.33E+1	6.42E-1	4.66E+0	1.07E-1	-5.26E+0	1.35E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.56E+0	1.57E-2	1.50E+1	1.96E+1	1.08E-2	5.53E-1	1.55E-3	-2.15E+0	1.80E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.56E+0	1.57E-2	1.50E+1	1.96E+1	1.08E-2	5.53E-1	1.55E-3	-2.15E+0	1.80E+1
PENRE	MJ	9.93E+1	2.19E+0	3.40E+0	1.05E+2	7.97E-1	8.07E+0	4.46E-2	-5.32E+1	6.05E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.93E+1	2.19E+0	3.40E+0	1.05E+2	7.97E-1	8.07E+0	4.46E-2	-5.32E+1	6.05E+1
PET	MJ	1.04E+2	2.20E+0	1.84E+1	1.24E+2	8.07E-1	8.62E+0	4.61E-2	-5.54E+1	7.85E+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	6.66E-2	1.21E-4	2.90E-3	6.96E-2	8.49E-5	8.28E-3	5.14E-5	-3.08E-2	4.72E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.29E-4	2.27E-6	3.62E-5	3.67E-4	1.92E-6	1.22E-5	5.12E-8	-4.09E-5	3.41E-4
NHWD	kg	3.56E-1	1.87E-2	7.27E-3	3.82E-1	4.65E-2	2.74E-1	1.86E-1	-1.57E-1	7.31E-1
RWD	kg	1.75E-4	1.43E-5	9.58E-6	1.99E-4	5.10E-6	2.84E-5	2.73E-7	-8.40E-5	1.48E-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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