Environmental Profile

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

Ecochain v3.5.71

Product:	3039663 - Wavin UR UnJunc 87° BN 150x110x150 SN8 D
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	2.35E+0	1.02E-1	2.87E-1	2.74E+0	3.13E-2	8.53E-1	9.90E-3	-1.31E+0	2.32E+0
GWP-f	kg CO2 eq	2.33E+0	1.02E-1	2.81E-1	2.71E+0	3.13E-2	8.54E-1	9.89E-3	-1.30E+0	2.30E+0
GWP-b	kg CO2 eq	1.98E-2	-1.97E-5	5.63E-3	2.54E-2	1.90E-5	-8.64E-4	1.23E-5	-9.12E-3	1.55E-2
GWP-luluc	kg CO2 eq	1.93E-3	6.61E-5	2.61E-4	2.25E-3	1.11E-5	3.81E-4	2.61E-7	-8.44E-4	1.80E-3
ODP	kg CFC11 eq	1.28E-6	2.07E-8	2.29E-8	1.32E-6	7.21E-9	1.04E-7	3.69E-10	-6.53E-7	7.79E-7
AP	mol H+ eq	1.08E-2	2.98E-3	1.57E-3	1.54E-2	1.78E-4	1.76E-3	8.96E-6	-4.95E-3	1.24E-2
EP-fw	kg P eq	1.05E-4	4.66E-7	3.98E-6	1.10E-4	2.58E-7	1.27E-5	1.18E-8	-4.81E-5	7.48E-5
EP-m	kg N eq	1.82E-3	7.39E-4	2.91E-4	2.85E-3	6.38E-5	4.24E-4	5.63E-6	-8.55E-4	2.49E-3
EP-T	mol N eq	1.98E-2	8.22E-3	3.21E-3	3.12E-2	7.03E-4	4.67E-3	3.57E-5	-9.09E-3	2.76E-2
POCP	kg NMVOC eq	6.78E-3	2.14E-3	1.33E-3	1.02E-2	2.01E-4	1.40E-3	1.23E-5	-3.17E-3	8.69E-3
ADP-mm	kg Sb eq	1.35E-3	9.79E-7	7.56E-6	1.36E-3	8.10E-7	6.94E-6	9.00E-9	-2.67E-5	1.34E-3
ADP-f	MJ	5.98E+1	1.33E+0	3.11E+0	6.43E+1	4.80E-1	4.82E+0	2.69E-2	-3.18E+1	3.78E+1
WDP	m3 depriv.	3.88E+0	2.24E-3	8.97E-2	3.97E+0	1.47E-3	1.91E-1	1.83E-4	-1.88E+0	2.28E+0
PM	disease inc.	7.12E-8	3.84E-9	1.09E-8	8.59E-8	2.83E-9	2.18E-8	1.85E-10	-3.14E-8	7.92E-8
IR	kBq U-235 eq	1.30E-1	5.72E-3	7.11E-3	1.43E-1	2.10E-3	1.69E-2	1.23E-4	-6.06E-2	1.01E-1
ETP-fw	CTUe	5.00E+1	8.87E-1	8.66E+0	5.96E+1	3.90E-1	3.72E+1	4.12E-1	-1.81E+1	7.94E+1
HTP-c	CTUh	1.79E-9	5.60E-11	3.40E-10	2.19E-9	1.39E-11	5.38E-10	7.44E-13	-6.89E-10	2.05E-9
HTP-nc	CTUh	5.75E-8	7.68E-10	1.59E-8	7.42E-8	4.65E-10	1.29E-8	7.94E-11	-2.38E-8	6.38E-8
SQP	Pt	7.67E+0	3.14E-1	1.12E+0	9.10E+0	4.11E-1	2.97E+0	6.88E-2	-3.35E+0	9.20E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.92E+0	1.04E-2	1.87E+1	2.17E+1	6.89E-3	3.50E-1	9.95E-4	-1.37E+0	2.06E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.92E+0	1.04E-2	1.87E+1	2.17E+1	6.89E-3	3.50E-1	9.95E-4	-1.37E+0	2.06E+1
PENRE	MJ	6.42E+1	1.41E+0	3.30E+0	6.89E+1	5.10E-1	5.12E+0	2.86E-2	-3.42E+1	4.03E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.42E+1	1.41E+0	3.30E+0	6.89E+1	5.10E-1	5.12E+0	2.86E-2	-3.42E+1	4.03E+1
PET	MJ	6.71E+1	1.42E+0	2.20E+1	9.05E+1	5.17E-1	5.47E+0	2.95E-2	-3.56E+1	6.09E+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	4.26E-2	8.06E-5	2.69E-3	4.54E-2	5.44E-5	5.23E-3	3.29E-5	-1.97E-2	3.10E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.08E-4	1.52E-6	2.27E-5	2.32E-4	1.23E-6	7.77E-6	3.28E-8	-2.60E-5	2.15E-4
NHWD	kg	2.27E-1	1.42E-2	4.77E-3	2.46E-1	2.98E-2	1.75E-1	1.19E-1	-1.00E-1	4.69E-1
RWD	kg	1.14E-4	9.22E-6	6.02E-6	1.30E-4	3.27E-6	1.80E-5	1.75E-7	-5.34E-5	9.76E-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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