Environmental Profile

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

Ecochain v3.5.71

Product:	3038097 - Wavin UR Pipe BN BSEN13476 225 SN8 L=3 P
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	2.65E+1	1.33E+0	1.69E+0	2.95E+1	4.11E-1	1.38E+1	1.22E-1	-1.62E+1	2.76E+1
GWP-f	kg CO2 eq	2.92E+1	1.32E+0	1.61E+0	3.21E+1	4.11E-1	1.08E+1	1.22E-1	-1.61E+1	2.73E+1
GWP-b	kg CO2 eq	-2.71E+0	-2.14E-4	8.06E-2	-2.63E+0	2.50E-4	2.98E+0	1.53E-4	-1.13E-1	2.44E-1
GWP-luluc	kg CO2 eq	2.86E-2	8.47E-4	7.62E-4	3.02E-2	1.45E-4	4.89E-3	3.32E-6	-1.09E-2	2.43E-2
ODP	kg CFC11 eq	1.60E-5	2.72E-7	2.06E-7	1.64E-5	9.47E-8	1.32E-6	4.74E-9	-8.15E-6	9.71E-6
AP	mol H+ eq	1.43E-1	3.76E-2	7.26E-3	1.87E-1	2.34E-3	2.28E-2	1.15E-4	-6.26E-2	1.50E-1
EP-fw	kg P eq	1.42E-3	6.28E-6	2.03E-5	1.44E-3	3.38E-6	1.63E-4	1.49E-7	-6.03E-4	1.01E-3
EP-m	kg N eq	2.48E-2	9.36E-3	1.92E-3	3.61E-2	8.38E-4	5.58E-3	6.92E-5	-1.10E-2	3.16E-2
EP-T	mol N eq	2.74E-1	1.04E-1	1.98E-2	3.98E-1	9.23E-3	6.16E-2	4.57E-4	-1.19E-1	3.51E-1
POCP	kg NMVOC eq	8.82E-2	2.71E-2	1.07E-2	1.26E-1	2.64E-3	1.84E-2	1.56E-4	-4.02E-2	1.07E-1
ADP-mm	kg Sb eq	3.98E-2	1.36E-5	2.13E-5	3.98E-2	1.06E-5	8.97E-5	1.15E-7	-3.32E-4	3.96E-2
ADP-f	MJ	7.28E+2	1.75E+1	1.77E+1	7.63E+2	6.31E+0	6.25E+1	3.45E-1	-3.91E+2	4.41E+2
WDP	m3 depriv.	4.89E+1	3.06E-2	6.57E-1	4.96E+1	1.94E-2	2.43E+0	2.40E-3	-2.34E+1	2.86E+1
PM	disease inc.	1.02E-6	5.30E-8	4.51E-8	1.12E-6	3.71E-8	2.85E-7	2.37E-9	-4.12E-7	1.03E-6
IR	kBq U-235 eq	1.70E+0	7.52E-2	5.86E-2	1.83E+0	2.76E-2	2.18E-1	1.58E-3	-7.57E-1	1.32E+0
ETP-fw	CTUe	8.42E+2	1.18E+1	3.20E+1	8.85E+2	5.12E+0	4.68E+2	5.16E+0	-2.38E+2	1.13E+3
HTP-c	CTUh	2.74E-8	7.26E-10	1.26E-9	2.94E-8	1.82E-10	7.20E-9	9.42E-12	-8.75E-9	2.80E-8
HTP-nc	CTUh	8.72E-7	1.04E-8	1.37E-7	1.02E-6	6.11E-9	1.66E-7	9.96E-10	-3.02E-7	8.91E-7
SQP	Pt	3.73E+2	4.64E+0	4.60E+0	3.82E+2	5.40E+0	3.90E+1	8.77E-1	-9.97E+1	3.28E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.85E+1	1.42E-1	4.80E+1	1.27E+2	9.05E-2	4.48E+0	1.24E-2	-2.87E+1	1.03E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.85E+1	1.42E-1	4.80E+1	1.27E+2	9.05E-2	4.48E+0	1.24E-2	-2.87E+1	1.03E+2
PENRE	MJ	7.80E+2	1.85E+1	1.88E+1	8.17E+2	6.70E+0	6.65E+1	3.66E-1	-4.21E+2	4.70E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	7.80E+2	1.85E+1	1.88E+1	8.17E+2	6.70E+0	6.65E+1	3.66E-1	-4.21E+2	4.70E+2
PET	MJ	8.59E+2	1.87E+1	6.67E+1	9.44E+2	6.79E+0	7.10E+1	3.79E-1	-4.50E+2	5.72E+2
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	5.51E-1	1.10E-3	1.71E-2	5.69E-1	7.14E-4	6.67E-2	4.21E-4	-2.45E-1	3.92E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.54E-3	2.11E-5	3.03E-4	5.86E-3	1.61E-5	1.01E-4	4.20E-7	-3.26E-4	5.66E-3
NHWD	kg	3.08E+0	2.29E-1	5.92E-2	3.37E+0	3.91E-1	2.34E+0	1.56E+0	-1.27E+0	6.39E+0
RWD	kg	1.47E-3	1.21E-4	8.02E-5	1.67E-3	4.29E-5	2.34E-4	2.25E-6	-6.68E-4	1.28E-3
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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