Environmental Profile

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

Ecochain v3.5.71

Product:	3038912 - Wavin UR Pipe BN BSEN13476 300 SN8 L=3 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	3.78E+1	1.94E+0	2.46E+0	4.22E+1	5.99E-1	2.10E+1	1.77E-1	-2.36E+1	4.04E+1
GWP-f	kg CO2 eq	4.26E+1	1.94E+0	2.34E+0	4.69E+1	5.99E-1	1.57E+1	1.77E-1	-2.34E+1	4.00E+1
GWP-b	kg CO2 eq	-4.90E+0	-3.04E-4	1.17E-1	-4.79E+0	3.64E-4	5.31E+0	2.23E-4	-1.65E-1	3.55E-1
GWP-luluc	kg CO2 eq	4.22E-2	1.24E-3	1.11E-3	4.46E-2	2.12E-4	7.13E-3	4.84E-6	-1.61E-2	3.58E-2
ODP	kg CFC11 eq	2.33E-5	3.99E-7	3.01E-7	2.40E-5	1.38E-7	1.92E-6	6.91E-9	-1.19E-5	1.42E-5
AP	mol H+ eq	2.09E-1	5.48E-2	1.06E-2	2.74E-1	3.41E-3	3.34E-2	1.67E-4	-9.17E-2	2.20E-1
EP-fw	kg P eq	2.07E-3	9.25E-6	2.96E-5	2.11E-3	4.93E-6	2.37E-4	2.17E-7	-8.80E-4	1.48E-3
EP-m	kg N eq	3.65E-2	1.37E-2	2.80E-3	5.29E-2	1.22E-3	8.18E-3	1.01E-4	-1.61E-2	4.63E-2
EP-T	mol N eq	4.04E-1	1.52E-1	2.89E-2	5.84E-1	1.34E-2	9.02E-2	6.66E-4	-1.75E-1	5.14E-1
POCP	kg NMVOC eq	1.30E-1	3.95E-2	1.56E-2	1.85E-1	3.84E-3	2.70E-2	2.28E-4	-5.89E-2	1.57E-1
ADP-mm	kg Sb eq	5.79E-2	2.02E-5	3.11E-5	5.80E-2	1.55E-5	1.31E-4	1.67E-7	-4.85E-4	5.76E-2
ADP-f	MJ	1.06E+3	2.56E+1	2.57E+1	1.11E+3	9.19E+0	9.11E+1	5.03E-1	-5.70E+2	6.44E+2
WDP	m3 depriv.	7.13E+1	4.51E-2	9.57E-1	7.23E+1	2.82E-2	3.55E+0	3.50E-3	-3.41E+1	4.18E+1
PM	disease inc.	1.54E-6	7.83E-8	6.58E-8	1.68E-6	5.40E-8	4.17E-7	3.45E-9	-6.07E-7	1.55E-6
IR	kBq U-235 eq	2.49E+0	1.10E-1	8.54E-2	2.68E+0	4.02E-2	3.19E-1	2.30E-3	-1.10E+0	1.94E+0
ETP-fw	CTUe	1.23E+3	1.73E+1	4.66E+1	1.29E+3	7.46E+0	6.82E+2	7.52E+0	-3.51E+2	1.64E+3
HTP-c	CTUh	4.03E-8	1.06E-9	1.84E-9	4.32E-8	2.66E-10	1.06E-8	1.37E-11	-1.28E-8	4.12E-8
HTP-nc	CTUh	1.27E-6	1.54E-8	2.00E-7	1.49E-6	8.90E-9	2.42E-7	1.45E-9	-4.42E-7	1.30E-6
SQP	Pt	6.31E+2	6.92E+0	6.71E+0	6.44E+2	7.86E+0	5.69E+1	1.28E+0	-1.64E+2	5.46E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.27E+2	2.09E-1	6.99E+1	1.98E+2	1.32E-1	6.53E+0	1.81E-2	-4.55E+1	1.59E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.27E+2	2.09E-1	6.99E+1	1.98E+2	1.32E-1	6.53E+0	1.81E-2	-4.55E+1	1.59E+2
PENRE	MJ	1.14E+3	2.72E+1	2.73E+1	1.19E+3	9.76E+0	9.70E+1	5.34E-1	-6.14E+2	6.87E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.14E+3	2.72E+1	2.73E+1	1.19E+3	9.76E+0	9.70E+1	5.34E-1	-6.14E+2	6.87E+2
PET	MJ	1.27E+3	2.74E+1	9.73E+1	1.39E+3	9.89E+0	1.03E+2	5.52E-1	-6.59E+2	8.46E+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	8.04E-1	1.63E-3	2.49E-2	8.31E-1	1.04E-3	9.73E-2	6.14E-4	-3.57E-1	5.73E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.07E-3	3.13E-5	4.41E-4	8.55E-3	2.35E-5	1.47E-4	6.13E-7	-4.75E-4	8.24E-3
NHWD	kg	4.53E+0	3.45E-1	8.63E-2	4.96E+0	5.70E-1	3.43E+0	2.28E+0	-1.86E+0	9.38E+0
RWD	kg	2.15E-3	1.78E-4	1.17E-4	2.44E-3	6.25E-5	3.42E-4	3.27E-6	-9.75E-4	1.88E-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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