Environmental Profile

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

Ecochain v3.5.71

Product:	3038146 - Wavin UR Pipe BN BSEN13476 300 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	3.91E+1	2.00E+0	2.54E+0	4.36E+1	6.18E-1	2.15E+1	1.83E-1	-2.43E+1	4.16E+1
GWP-f	kg CO2 eq	4.39E+1	2.00E+0	2.41E+0	4.84E+1	6.17E-1	1.62E+1	1.83E-1	-2.41E+1	4.12E+1
GWP-b	kg CO2 eq	-4.89E+0	-3.15E-4	1.21E-1	-4.77E+0	3.75E-4	5.31E+0	2.30E-4	-1.70E-1	3.66E-1
GWP-luluc	kg CO2 eq	4.34E-2	1.28E-3	1.15E-3	4.58E-2	2.18E-4	7.35E-3	4.99E-6	-1.65E-2	3.69E-2
ODP	kg CFC11 eq	2.40E-5	4.11E-7	3.10E-7	2.47E-5	1.42E-7	1.98E-6	7.13E-9	-1.22E-5	1.46E-5
AP	mol H+ eq	2.15E-1	5.65E-2	1.09E-2	2.83E-1	3.52E-3	3.44E-2	1.72E-4	-9.45E-2	2.26E-1
EP-fw	kg P eq	2.14E-3	9.52E-6	3.05E-5	2.18E-3	5.08E-6	2.45E-4	2.23E-7	-9.07E-4	1.52E-3
EP-m	kg N eq	3.75E-2	1.41E-2	2.89E-3	5.45E-2	1.26E-3	8.42E-3	1.04E-4	-1.66E-2	4.77E-2
EP-T	mol N eq	4.15E-1	1.57E-1	2.98E-2	6.02E-1	1.39E-2	9.29E-2	6.87E-4	-1.80E-1	5.29E-1
POCP	kg NMVOC eq	1.33E-1	4.08E-2	1.61E-2	1.90E-1	3.96E-3	2.78E-2	2.35E-4	-6.07E-2	1.62E-1
ADP-mm	kg Sb eq	5.97E-2	2.08E-5	3.20E-5	5.98E-2	1.60E-5	1.35E-4	1.73E-7	-4.99E-4	5.94E-2
ADP-f	MJ	1.09E+3	2.64E+1	2.65E+1	1.15E+3	9.47E+0	9.39E+1	5.18E-1	-5.88E+2	6.64E+2
WDP	m3 depriv.	7.35E+1	4.64E-2	9.86E-1	7.45E+1	2.91E-2	3.65E+0	3.61E-3	-3.52E+1	4.31E+1
PM	disease inc.	1.58E-6	8.05E-8	6.78E-8	1.73E-6	5.57E-8	4.29E-7	3.56E-9	-6.25E-7	1.59E-6
IR	kBq U-235 eq	2.56E+0	1.14E-1	8.80E-2	2.76E+0	4.14E-2	3.28E-1	2.37E-3	-1.14E+0	2.00E+0
ETP-fw	CTUe	1.27E+3	1.78E+1	4.80E+1	1.33E+3	7.69E+0	7.03E+2	7.75E+0	-3.61E+2	1.69E+3
HTP-c	CTUh	4.14E-8	1.09E-9	1.89E-9	4.44E-8	2.74E-10	1.09E-8	1.41E-11	-1.32E-8	4.24E-8
HTP-nc	CTUh	1.31E-6	1.58E-8	2.06E-7	1.54E-6	9.17E-9	2.49E-7	1.50E-9	-4.55E-7	1.34E-6
SQP	Pt	6.35E+2	7.11E+0	6.91E+0	6.49E+2	8.11E+0	5.86E+1	1.32E+0	-1.66E+2	5.51E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.29E+2	2.15E-1	7.21E+1	2.01E+2	1.36E-1	6.73E+0	1.86E-2	-4.63E+1	1.62E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.29E+2	2.15E-1	7.21E+1	2.01E+2	1.36E-1	6.73E+0	1.86E-2	-4.63E+1	1.62E+2
PENRE	MJ	1.17E+3	2.80E+1	2.82E+1	1.23E+3	1.01E+1	9.99E+1	5.50E-1	-6.33E+2	7.08E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.17E+3	2.80E+1	2.82E+1	1.23E+3	1.01E+1	9.99E+1	5.50E-1	-6.33E+2	7.08E+2
PET	MJ	1.30E+3	2.82E+1	1.00E+2	1.43E+3	1.02E+1	1.07E+2	5.69E-1	-6.79E+2	8.70E+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	8.29E-1	1.67E-3	2.57E-2	8.56E-1	1.07E-3	1.00E-1	6.33E-4	-3.68E-1	5.91E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.33E-3	3.22E-5	4.55E-4	8.81E-3	2.42E-5	1.52E-4	6.31E-7	-4.90E-4	8.50E-3
NHWD	kg	4.66E+0	3.54E-1	8.90E-2	5.10E+0	5.87E-1	3.53E+0	2.35E+0	-1.91E+0	9.66E+0
RWD	kg	2.21E-3	1.83E-4	1.20E-4	2.52E-3	6.44E-5	3.53E-4	3.37E-6	-1.01E-3	1.93E-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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