Environmental Profile

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

Ecochain v3.5.71

Product:	3039655 - Wavin UR Bend 30° 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	1.41E+0	6.11E-2	1.12E-1	1.59E+0	1.89E-2	5.13E-1	5.92E-3	-7.88E-1	1.34E+0
GWP-f	kg CO2 eq	1.40E+0	6.10E-2	1.09E-1	1.57E+0	1.89E-2	5.14E-1	5.91E-3	-7.82E-1	1.33E+0
GWP-b	kg CO2 eq	1.25E-2	-1.31E-5	3.52E-3	1.60E-2	1.15E-5	-5.17E-4	7.44E-6	-5.53E-3	9.96E-3
GWP-luluc	kg CO2 eq	1.17E-3	4.02E-5	8.11E-5	1.29E-3	6.69E-6	2.33E-4	1.58E-7	-5.13E-4	1.02E-3
ODP	kg CFC11 eq	7.82E-7	1.24E-8	1.09E-8	8.06E-7	4.36E-9	6.37E-8	2.22E-10	-3.98E-7	4.76E-7
AP	mol H+ eq	6.50E-3	1.83E-3	5.61E-4	8.89E-3	1.08E-4	1.07E-3	5.41E-6	-2.99E-3	7.08E-3
EP-fw	kg P eq	6.41E-5	2.75E-7	1.47E-6	6.58E-5	1.56E-7	7.78E-6	7.09E-9	-2.92E-5	4.45E-5
EP-m	kg N eq	1.10E-3	4.52E-4	1.20E-4	1.67E-3	3.85E-5	2.58E-4	3.32E-6	-5.17E-4	1.45E-3
EP-T	mol N eq	1.19E-2	5.03E-3	1.28E-3	1.83E-2	4.25E-4	2.84E-3	2.16E-5	-5.49E-3	1.61E-2
POCP	kg NMVOC eq	4.04E-3	1.31E-3	6.03E-4	5.95E-3	1.21E-4	8.51E-4	7.41E-6	-1.91E-3	5.02E-3
ADP-mm	kg Sb eq	8.31E-4	5.63E-7	2.33E-6	8.34E-4	4.89E-7	4.23E-6	5.43E-9	-1.62E-5	8.23E-4
ADP-f	MJ	3.57E+1	7.95E-1	1.20E+0	3.77E+1	2.90E-1	2.93E+0	1.62E-2	-1.91E+1	2.19E+1
WDP	m3 depriv.	2.37E+0	1.31E-3	3.87E-2	2.41E+0	8.90E-4	1.17E-1	1.11E-4	-1.14E+0	1.38E+0
PM	disease inc.	4.21E-8	2.23E-9	3.75E-9	4.81E-8	1.71E-9	1.32E-8	1.12E-10	-1.89E-8	4.42E-8
IR	kBq U-235 eq	7.77E-2	3.42E-3	3.25E-3	8.44E-2	1.27E-3	1.03E-2	7.45E-5	-3.68E-2	5.92E-2
ETP-fw	CTUe	3.04E+1	5.27E-1	2.87E+0	3.38E+1	2.36E-1	2.29E+1	2.54E-1	-1.10E+1	4.62E+1
HTP-c	CTUh	1.09E-9	3.39E-11	1.13E-10	1.24E-9	8.38E-12	3.27E-10	4.50E-13	-4.18E-10	1.16E-9
HTP-nc	CTUh	3.51E-8	4.50E-10	7.45E-9	4.30E-8	2.81E-10	7.91E-9	4.87E-11	-1.45E-8	3.68E-8
SQP	Pt	4.58E+0	1.73E-1	3.83E-1	5.14E+0	2.48E-1	1.80E+0	4.15E-2	-2.03E+0	5.20E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.76E+0	6.05E-3	5.62E+0	7.39E+0	4.16E-3	2.14E-1	5.98E-4	-8.29E-1	6.78E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.76E+0	6.05E-3	5.62E+0	7.39E+0	4.16E-3	2.14E-1	5.98E-4	-8.29E-1	6.78E+0
PENRE	MJ	3.83E+1	8.44E-1	1.27E+0	4.04E+1	3.08E-1	3.12E+0	1.72E-2	-2.06E+1	2.33E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.83E+1	8.44E-1	1.27E+0	4.04E+1	3.08E-1	3.12E+0	1.72E-2	-2.06E+1	2.33E+1
PET	MJ	4.01E+1	8.50E-1	6.90E+0	4.78E+1	3.12E-1	3.33E+0	1.78E-2	-2.14E+1	3.01E+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	2.57E-2	4.70E-5	1.09E-3	2.69E-2	3.28E-5	3.20E-3	1.99E-5	-1.19E-2	1.82E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.29E-4	8.76E-7	1.36E-5	1.43E-4	7.42E-7	4.72E-6	1.98E-8	-1.58E-5	1.33E-4
NHWD	kg	1.38E-1	7.28E-3	2.73E-3	1.48E-1	1.80E-2	1.06E-1	7.19E-2	-6.08E-2	2.83E-1
RWD	kg	6.75E-5	5.52E-6	3.60E-6	7.66E-5	1.97E-6	1.10E-5	1.06E-7	-3.24E-5	5.72E-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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