Environmental Profile

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

Ecochain v3.5.71

Product:	3036387 - Wavin UR Socket Plug BN 150 SN8 P/E
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	4.35E-1	1.83E-2	3.53E-2	4.89E-1	5.72E-3	1.66E-1	2.69E-3	-2.65E-1	3.97E-1
GWP-f	kg CO2 eq	4.33E-1	1.83E-2	3.42E-2	4.86E-1	5.71E-3	1.66E-1	2.69E-3	-2.64E-1	3.96E-1
GWP-b	kg CO2 eq	1.97E-3	1.03E-5	1.11E-3	3.08E-3	3.47E-6	-2.29E-4	2.34E-6	-9.38E-4	1.92E-3
GWP-luluc	kg CO2 eq	1.11E-4	6.73E-6	2.55E-5	1.44E-4	2.02E-6	3.21E-5	4.60E-8	-5.27E-5	1.25E-4
ODP	kg CFC11 eq	7.69E-9	4.19E-9	3.44E-9	1.53E-8	1.32E-9	4.17E-9	6.75E-11	-1.13E-8	9.53E-9
AP	mol H+ eq	1.54E-3	1.30E-4	1.76E-4	1.84E-3	3.25E-5	1.75E-4	1.61E-6	-7.47E-4	1.31E-3
EP-fw	kg P eq	6.28E-6	1.46E-7	4.63E-7	6.89E-6	4.70E-8	9.25E-7	2.11E-9	-3.00E-6	4.86E-6
EP-m	kg N eq	2.54E-4	4.32E-5	3.77E-5	3.35E-4	1.16E-5	5.09E-5	1.05E-6	-1.32E-4	2.67E-4
EP-T	mol N eq	2.86E-3	4.77E-4	4.03E-4	3.74E-3	1.28E-4	5.60E-4	6.54E-6	-1.46E-3	2.98E-3
POCP	kg NMVOC eq	1.33E-3	1.34E-4	1.89E-4	1.65E-3	3.67E-5	1.77E-4	2.46E-6	-6.71E-4	1.20E-3
ADP-mm	kg Sb eq	5.65E-6	4.55E-7	7.31E-7	6.84E-6	1.48E-7	6.94E-7	1.63E-9	-1.80E-6	5.88E-6
ADP-f	MJ	1.55E+1	2.78E-1	3.77E-1	1.61E+1	8.77E-2	5.56E-1	4.93E-3	-8.32E+0	8.45E+0
WDP	m3 depriv.	3.06E-1	8.32E-4	1.22E-2	3.19E-1	2.69E-4	1.09E-2	2.54E-5	-1.48E-1	1.82E-1
PM	disease inc.	1.34E-8	1.59E-9	1.18E-9	1.62E-8	5.16E-10	2.89E-9	3.39E-11	-6.22E-9	1.34E-8
IR	kBq U-235 eq	7.82E-3	1.22E-3	1.02E-3	1.01E-2	3.83E-4	1.68E-3	2.29E-5	-3.98E-3	8.15E-3
ETP-fw	CTUe	2.25E+0	2.24E-1	9.02E-1	3.38E+0	7.12E-2	6.27E-1	4.13E-3	-1.06E+0	3.02E+0
HTP-c	CTUh	9.62E-11	8.19E-12	3.54E-11	1.40E-10	2.53E-12	7.61E-11	1.21E-13	-4.53E-11	1.73E-10
HTP-nc	CTUh	2.74E-9	2.64E-10	2.34E-9	5.34E-9	8.49E-11	9.35E-10	2.66E-12	-1.29E-9	5.07E-9
SQP	Pt	5.06E-1	2.29E-1	1.20E-1	8.56E-1	7.50E-2	4.44E-1	1.27E-2	-2.30E-1	1.16E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.20E-1	3.89E-3	1.77E+0	1.99E+0	1.26E-3	2.74E-2	1.91E-4	-1.06E-1	1.91E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.20E-1	3.89E-3	1.77E+0	1.99E+0	1.26E-3	2.74E-2	1.91E-4	-1.06E-1	1.91E+0
PENRE	MJ	1.66E+1	2.95E-1	4.01E-1	1.73E+1	9.31E-2	5.93E-1	5.23E-3	-8.97E+0	9.01E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.66E+1	2.95E-1	4.01E-1	1.73E+1	9.31E-2	5.93E-1	5.23E-3	-8.97E+0	9.01E+0
PET	MJ	1.68E+1	2.99E-1	2.17E+0	1.93E+1	9.43E-2	6.20E-1	5.42E-3	-9.08E+0	1.09E+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	4.58E-3	3.07E-5	3.42E-4	4.95E-3	9.92E-6	3.21E-4	6.08E-6	-2.19E-3	3.10E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.75E-6	6.91E-7	4.27E-6	6.71E-6	2.24E-7	9.04E-7	5.95E-9	-1.96E-6	5.88E-6
NHWD	kg	1.58E-2	1.65E-2	8.58E-4	3.32E-2	5.43E-3	2.73E-2	2.17E-2	-6.60E-3	8.10E-2
RWD	kg	6.76E-6	1.89E-6	1.13E-6	9.78E-6	5.96E-7	2.12E-6	3.22E-8	-3.58E-6	8.95E-6
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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