Environmental Profile

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

Ecochain v3.5.71

Product:	3039664 - Wavin UR UnJunc 45° BN 150x110x150 SN8 D
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	3.40E+0	1.47E-1	3.10E-1	3.86E+0	4.54E-2	1.24E+0	1.43E-2	-1.90E+0	3.25E+0
GWP-f	kg CO2 eq	3.37E+0	1.47E-1	3.04E-1	3.82E+0	4.54E-2	1.24E+0	1.43E-2	-1.88E+0	3.23E+0
GWP-b	kg CO2 eq	2.90E-2	-2.95E-5	6.08E-3	3.51E-2	2.76E-5	-1.25E-3	1.79E-5	-1.32E-2	2.06E-2
GWP-luluc	kg CO2 eq	2.79E-3	9.61E-5	2.83E-4	3.17E-3	1.61E-5	5.55E-4	3.78E-7	-1.23E-3	2.52E-3
ODP	kg CFC11 eq	1.86E-6	3.00E-8	2.47E-8	1.92E-6	1.05E-8	1.51E-7	5.34E-10	-9.50E-7	1.13E-6
AP	mol H+ eq	1.56E-2	4.34E-3	1.70E-3	2.17E-2	2.59E-4	2.56E-3	1.30E-5	-7.18E-3	1.73E-2
EP-fw	kg P eq	1.53E-4	6.71E-7	4.30E-6	1.58E-4	3.73E-7	1.85E-5	1.70E-8	-6.99E-5	1.07E-4
EP-m	kg N eq	2.63E-3	1.08E-3	3.15E-4	4.02E-3	9.25E-5	6.16E-4	8.11E-6	-1.24E-3	3.50E-3
EP-T	mol N eq	2.86E-2	1.20E-2	3.47E-3	4.40E-2	1.02E-3	6.79E-3	5.18E-5	-1.32E-2	3.87E-2
POCP	kg NMVOC eq	9.77E-3	3.11E-3	1.44E-3	1.43E-2	2.91E-4	2.04E-3	1.78E-5	-4.59E-3	1.21E-2
ADP-mm	kg Sb eq	1.95E-3	1.40E-6	8.18E-6	1.96E-3	1.17E-6	1.01E-5	1.30E-8	-3.88E-5	1.94E-3
ADP-f	MJ	8.65E+1	1.92E+0	3.36E+0	9.17E+1	6.97E-1	7.00E+0	3.90E-2	-4.60E+1	5.34E+1
WDP	m3 depriv.	5.64E+0	3.21E-3	9.70E-2	5.74E+0	2.14E-3	2.79E-1	2.65E-4	-2.73E+0	3.29E+0
PM	disease inc.	1.02E-7	5.50E-9	1.18E-8	1.19E-7	4.10E-9	3.16E-8	2.68E-10	-4.56E-8	1.10E-7
IR	kBq U-235 eq	1.88E-1	8.27E-3	7.69E-3	2.04E-1	3.04E-3	2.46E-2	1.79E-4	-8.80E-2	1.43E-1
ETP-fw	CTUe	7.25E+1	1.28E+0	9.37E+0	8.31E+1	5.66E-1	5.42E+1	6.01E-1	-2.63E+1	1.12E+2
HTP-c	CTUh	2.59E-9	8.13E-11	3.67E-10	3.04E-9	2.01E-11	7.82E-10	1.08E-12	-1.00E-9	2.84E-9
HTP-nc	CTUh	8.35E-8	1.10E-9	1.72E-8	1.02E-7	6.74E-10	1.88E-8	1.16E-10	-3.47E-8	8.67E-8
SQP	Pt	1.10E+1	4.43E-1	1.21E+0	1.26E+1	5.96E-1	4.31E+0	9.97E-2	-4.86E+0	1.28E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.23E+0	1.49E-2	2.03E+1	2.45E+1	9.99E-3	5.09E-1	1.44E-3	-1.98E+0	2.30E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.23E+0	1.49E-2	2.03E+1	2.45E+1	9.99E-3	5.09E-1	1.44E-3	-1.98E+0	2.30E+1
PENRE	MJ	9.27E+1	2.04E+0	3.57E+0	9.83E+1	7.40E-1	7.45E+0	4.14E-2	-4.96E+1	5.70E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.27E+1	2.04E+0	3.57E+0	9.83E+1	7.40E-1	7.45E+0	4.14E-2	-4.96E+1	5.70E+1
PET	MJ	9.70E+1	2.06E+0	2.38E+1	1.23E+2	7.50E-1	7.96E+0	4.28E-2	-5.16E+1	8.00E+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	6.18E-2	1.16E-4	2.91E-3	6.48E-2	7.88E-5	7.62E-3	4.77E-5	-2.85E-2	4.40E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.02E-4	2.17E-6	2.46E-5	3.28E-4	1.78E-6	1.13E-5	4.76E-8	-3.78E-5	3.04E-4
NHWD	kg	3.25E-1	1.96E-2	5.15E-3	3.50E-1	4.32E-2	2.54E-1	1.73E-1	-1.45E-1	6.74E-1
RWD	kg	1.65E-4	1.33E-5	6.51E-6	1.84E-4	4.74E-6	2.62E-5	2.54E-7	-7.76E-5	1.38E-4
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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