Environmental Profile

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

Ecochain v3.5.71

Product:	3039661 - Wavin UR Reducer BN 225x150 SN8 S/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	1.82E+0	7.86E-2	1.44E-1	2.04E+0	2.43E-2	6.60E-1	7.60E-3	-1.01E+0	1.72E+0
GWP-f	kg CO2 eq	1.80E+0	7.85E-2	1.39E-1	2.02E+0	2.43E-2	6.60E-1	7.60E-3	-1.01E+0	1.70E+0
GWP-b	kg CO2 eq	1.60E-2	-1.69E-5	4.51E-3	2.05E-2	1.48E-5	-6.64E-4	9.57E-6	-7.11E-3	1.28E-2
GWP-luluc	kg CO2 eq	1.50E-3	5.17E-5	1.04E-4	1.66E-3	8.60E-6	3.00E-4	2.02E-7	-6.59E-4	1.31E-3
ODP	kg CFC11 eq	1.01E-6	1.60E-8	1.40E-8	1.04E-6	5.60E-9	8.20E-8	2.86E-10	-5.12E-7	6.13E-7
AP	mol H+ eq	8.35E-3	2.35E-3	7.19E-4	1.14E-2	1.38E-4	1.38E-3	6.95E-6	-3.85E-3	9.10E-3
EP-fw	kg P eq	8.24E-5	3.53E-7	1.89E-6	8.46E-5	2.00E-7	1.00E-5	9.11E-9	-3.76E-5	5.72E-5
EP-m	kg N eq	1.41E-3	5.82E-4	1.54E-4	2.14E-3	4.95E-5	3.32E-4	4.27E-6	-6.64E-4	1.87E-3
EP-T	mol N eq	1.53E-2	6.47E-3	1.65E-3	2.35E-2	5.46E-4	3.66E-3	2.77E-5	-7.06E-3	2.06E-2
POCP	kg NMVOC eq	5.19E-3	1.68E-3	7.72E-4	7.65E-3	1.56E-4	1.09E-3	9.52E-6	-2.45E-3	6.46E-3
ADP-mm	kg Sb eq	1.06E-3	7.24E-7	2.98E-6	1.06E-3	6.29E-7	5.44E-6	6.98E-9	-2.08E-5	1.05E-3
ADP-f	MJ	4.60E+1	1.02E+0	1.54E+0	4.85E+1	3.73E-1	3.77E+0	2.09E-2	-2.45E+1	2.81E+1
WDP	m3 depriv.	3.04E+0	1.68E-3	4.96E-2	3.09E+0	1.14E-3	1.51E-1	1.42E-4	-1.47E+0	1.78E+0
PM	disease inc.	5.40E-8	2.87E-9	4.80E-9	6.17E-8	2.19E-9	1.70E-8	1.44E-10	-2.44E-8	5.67E-8
IR	kBq U-235 eq	9.99E-2	4.40E-3	4.17E-3	1.08E-1	1.63E-3	1.32E-2	9.57E-5	-4.73E-2	7.61E-2
ETP-fw	CTUe	3.90E+1	6.78E-1	3.68E+0	4.34E+1	3.03E-1	2.94E+1	3.26E-1	-1.41E+1	5.93E+1
HTP-c	CTUh	1.40E-9	4.36E-11	1.45E-10	1.59E-9	1.08E-11	4.20E-10	5.78E-13	-5.38E-10	1.48E-9
HTP-nc	CTUh	4.51E-8	5.79E-10	9.54E-9	5.52E-8	3.61E-10	1.02E-8	6.27E-11	-1.86E-8	4.72E-8
SQP	Pt	5.89E+0	2.22E-1	4.91E-1	6.60E+0	3.19E-1	2.32E+0	5.33E-2	-2.61E+0	6.68E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.27E+0	7.78E-3	7.21E+0	9.48E+0	5.35E-3	2.75E-1	7.70E-4	-1.07E+0	8.70E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.27E+0	7.78E-3	7.21E+0	9.48E+0	5.35E-3	2.75E-1	7.70E-4	-1.07E+0	8.70E+0
PENRE	MJ	4.93E+1	1.09E+0	1.63E+0	5.20E+1	3.96E-1	4.01E+0	2.22E-2	-2.64E+1	3.00E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.93E+1	1.09E+0	1.63E+0	5.20E+1	3.96E-1	4.01E+0	2.22E-2	-2.64E+1	3.00E+1
PET	MJ	5.16E+1	1.09E+0	8.84E+0	6.15E+1	4.01E-1	4.29E+0	2.29E-2	-2.75E+1	3.87E+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	3.31E-2	6.04E-5	1.40E-3	3.45E-2	4.22E-5	4.11E-3	2.55E-5	-1.53E-2	2.34E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.64E-4	1.13E-6	1.74E-5	1.83E-4	9.54E-7	6.07E-6	2.55E-8	-2.03E-5	1.69E-4
NHWD	kg	1.77E-1	9.34E-3	3.50E-3	1.90E-1	2.31E-2	1.36E-1	9.24E-2	-7.82E-2	3.63E-1
RWD	kg	8.68E-5	7.10E-6	4.61E-6	9.85E-5	2.54E-6	1.41E-5	1.36E-7	-4.17E-5	7.36E-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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