Environmental Profile

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

Ecochain v3.5.80

Product:	3011335 - Tegra 425 PP Straight DN250 OR
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Wavin Tegra manholes are easy to install, easy to access, versatile and durable, making them the ideal choice for public sewer systems. We offer a wide range of well configurations, corrugated riser pipes with diameters from 425 to 1,000 mm and top terminations.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	08-06-2023
End of validity:	08-06-2028
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 - PL -Buk - Extra products (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	1.69E+1	9.00E-1	2.57E-2	1.78E+1	4.08E-1	3.65E+1	1.96E-1	-2.24E+1	3.25E+1
GWP-f	kg CO2 eq	3.89E+1	8.99E-1	2.59E-2	3.98E+1	4.07E-1	1.43E+1	1.96E-1	-2.24E+1	3.23E+1
GWP-b	kg CO2 eq	-2.20E+1	5.46E-4	-2.74E-4	-2.20E+1	2.47E-4	2.22E+1	1.72E-4	-6.44E-2	1.42E-1
GWP-luluc	kg CO2 eq	3.33E-2	3.18E-4	2.65E-5	3.36E-2	1.44E-4	2.30E-3	3.39E-6	-1.43E-2	2.18E-2
ODP	kg CFC11 eq	2.08E-6	2.07E-7	1.47E-9	2.28E-6	9.39E-8	3.21E-7	4.94E-9	-1.29E-6	1.41E-6
AP	mol H+ eq	1.56E-1	5.12E-3	2.62E-4	1.61E-1	2.32E-3	1.35E-2	1.18E-4	-7.26E-2	1.05E-1
EP-fw	kg P eq	7.41E-4	7.40E-6	1.46E-6	7.50E-4	3.35E-6	6.69E-5	1.55E-7	-3.53E-4	4.67E-4
EP-m	kg N eq	2.79E-2	1.83E-3	2.75E-5	2.98E-2	8.30E-4	4.05E-3	8.48E-5	-1.48E-2	2.00E-2
EP-T	mol N eq	3.15E-1	2.02E-2	3.29E-4	3.36E-1	9.15E-3	4.46E-2	4.80E-4	-1.68E-1	2.22E-1
POCP	kg NMVOC eq	1.38E-1	5.77E-3	1.11E-4	1.44E-1	2.62E-3	1.38E-2	1.80E-4	-7.05E-2	8.98E-2
ADP-mm	kg Sb eq	1.46E-3	2.33E-5	3.49E-6	1.48E-3	1.05E-5	5.14E-5	1.19E-7	-2.06E-4	1.34E-3
ADP-f	MJ	1.25E+3	1.38E+1	2.41E-1	1.26E+3	6.25E+0	4.09E+1	3.61E-1	-6.48E+2	6.64E+2
WDP	m3 depriv.	2.53E+1	4.24E-2	9.26E-3	2.53E+1	1.92E-2	7.97E-1	1.90E-3	-1.12E+1	1.50E+1
PM	disease inc.	1.71E-6	8.12E-8	1.61E-9	1.79E-6	3.68E-8	2.15E-7	2.48E-9	-8.37E-7	1.21E-6
IR	kBq U-235 eq	1.04E+0	6.03E-2	1.81E-4	1.10E+0	2.73E-2	1.26E-1	1.68E-3	-4.33E-1	8.23E-1
ETP-fw	CTUe	3.73E+2	1.12E+1	2.14E+0	3.86E+2	5.08E+0	4.91E+1	3.27E-1	-1.63E+2	2.78E+2
HTP-c	CTUh	2.17E-8	3.99E-10	1.09E-10	2.22E-8	1.81E-10	5.74E-9	8.93E-12	-1.12E-8	1.69E-8
HTP-nc	CTUh	3.82E-7	1.34E-8	2.78E-9	3.98E-7	6.05E-9	6.97E-8	2.01E-10	-1.58E-7	3.16E-7
SQP	Pt	1.92E+3	1.18E+1	3.97E-1	1.94E+3	5.35E+0	3.25E+1	9.26E-1	-1.58E+3	3.99E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.05E+2	1.98E-1	4.26E+0	4.09E+2	8.97E-2	1.98E+0	1.41E-2	-2.41E+2	1.70E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.05E+2	1.98E-1	4.26E+0	4.09E+2	8.97E-2	1.98E+0	1.41E-2	-2.41E+2	1.70E+2
PENRE	MJ	1.34E+3	1.47E+1	2.56E-1	1.36E+3	6.64E+0	4.36E+1	3.83E-1	-6.98E+2	7.09E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.34E+3	1.47E+1	2.56E-1	1.36E+3	6.64E+0	4.36E+1	3.83E-1	-6.98E+2	7.09E+2
PET	MJ	1.75E+3	1.49E+1	4.52E+0	1.77E+3	6.73E+0	4.56E+1	3.97E-1	-9.39E+2	8.79E+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	4.27E-1	1.56E-3	2.59E-4	4.29E-1	7.08E-4	2.61E-2	4.45E-4	-1.79E-1	2.77E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.54E-4	3.53E-5	4.85E-11	3.89E-4	1.60E-5	6.93E-5	4.36E-7	-2.81E-4	1.94E-4
NHWD	kg	2.62E+0	8.56E-1	1.87E-4	3.48E+0	3.88E-1	2.08E+0	1.59E+0	-1.34E+0	6.19E+0
RWD	kg	1.13E-3	9.39E-5	1.94E-11	1.22E-3	4.25E-5	1.61E-4	2.36E-6	-4.35E-4	9.93E-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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