Environmental Profile

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

Ecochain v3.5.64

Product:	3015553 - TS PotW Pp BL 160x9.5 L=12
Unit:	1 piece
Manufacturer:	Wavin - DE - Westeregeln - verified
Address:	Borrweg 10 39448 Börde-Hakel Germany
Contact:	https://www.wavin.com/en-en

The TS DOQ is a three-layer pressure pipe made of extremely strong material (PE100-RC N8000). The tube is manufactured by co-extrusion. The protective properties of the material ensure a high degree of reliability.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	11-08-2022
End of validity:	11-08-2027
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 - DE - Westeregeln - 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 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF 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

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.10E+2	4.88E+0	2.47E+0	1.18E+2	1.44E+0	4.70E+1	8.00E-1	-7.24E+1	9.46E+1
GWP-f	kg CO2 eq	1.10E+2	4.87E+0	2.01E+0	1.17E+2	1.44E+0	4.70E+1	8.00E-1	-7.22E+1	9.39E+1
GWP-b	kg CO2 eq	5.43E-1	2.13E-3	2.20E-1	7.65E-1	8.77E-4	-5.28E-2	6.01E-4	-2.74E-1	4.41E-1
GWP-luluc	kg CO2 eq	3.50E-2	1.83E-3	2.49E-1	2.86E-1	5.11E-4	8.11E-3	1.15E-5	-1.64E-2	2.78E-1
ODP	kg CFC11 eq	4.64E-6	1.07E-6	2.52E-7	5.96E-6	3.33E-7	1.06E-6	1.71E-8	-3.46E-6	3.90E-6
AP	mol H+ eq	4.15E-1	3.29E-2	1.21E-2	4.60E-1	8.22E-3	4.44E-2	4.07E-4	-2.00E-1	3.13E-1
EP-fw	kg P eq	1.89E-3	4.81E-5	4.61E-5	1.99E-3	1.19E-5	2.34E-4	5.29E-7	-8.99E-4	1.33E-3
EP-m	kg N eq	6.91E-2	1.10E-2	2.39E-3	8.25E-2	2.94E-3	1.29E-2	2.88E-4	-3.65E-2	6.21E-2
EP-T	mol N eq	7.78E-1	1.22E-1	2.43E-2	9.24E-1	3.24E-2	1.42E-1	1.65E-3	-4.06E-1	6.94E-1
POCP	kg NMVOC eq	3.66E-1	3.43E-2	7.01E-3	4.07E-1	9.27E-3	4.49E-2	6.48E-4	-1.89E-1	2.72E-1
ADP-mm	kg Sb eq	1.34E-3	1.20E-4	6.30E-5	1.52E-3	3.73E-5	1.76E-4	4.09E-7	-4.66E-4	1.27E-3
ADP-f	MJ	3.82E+3	7.31E+1	2.33E+1	3.92E+3	2.22E+1	1.41E+2	1.25E+0	-2.16E+3	1.92E+3
WDP	m3 depriv.	8.63E+1	2.57E-1	1.43E+1	1.01E+2	6.80E-2	2.76E+0	5.71E-3	-4.21E+1	6.16E+1
PM	disease inc.	3.67E-6	4.27E-7	1.04E-7	4.20E-6	1.30E-7	7.30E-7	8.56E-9	-1.58E-6	3.49E-6
IR	kBq U-235 eq	2.99E+0	3.07E-1	5.96E-2	3.36E+0	9.69E-2	4.24E-1	5.81E-3	-1.31E+0	2.58E+0
ETP-fw	CTUe	7.26E+2	6.46E+1	5.99E+1	8.51E+2	1.80E+1	1.60E+2	1.10E+0	-3.14E+2	7.15E+2
HTP-c	CTUh	3.07E-8	2.14E-9	2.23E-9	3.51E-8	6.40E-10	1.89E-8	3.03E-11	-1.50E-8	3.98E-8
HTP-nc	CTUh	7.26E-7	7.02E-8	5.83E-8	8.54E-7	2.15E-8	2.39E-7	6.98E-10	-3.34E-7	7.82E-7
SQP	Pt	1.48E+2	6.18E+1	2.11E+0	2.12E+2	1.90E+1	1.12E+2	3.20E+0	-6.87E+1	2.78E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.47E+1	9.02E-1	1.34E+2	2.00E+2	3.18E-1	6.94E+0	4.93E-2	-3.13E+1	1.76E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.47E+1	9.02E-1	1.34E+2	2.00E+2	3.18E-1	6.94E+0	4.93E-2	-3.13E+1	1.76E+2
PENRE	MJ	4.10E+3	7.76E+1	2.49E+1	4.20E+3	2.35E+1	1.50E+2	1.32E+0	-2.34E+3	2.04E+3
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.10E+3	7.76E+1	2.49E+1	4.20E+3	2.35E+1	1.50E+2	1.32E+0	-2.34E+3	2.04E+3
PET	MJ	4.16E+3	7.85E+1	1.59E+2	4.40E+3	2.38E+1	1.57E+2	1.37E+0	-2.37E+3	2.22E+3
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	1.33E+0	8.74E-3	3.40E-1	1.68E+0	2.51E-3	8.13E-2	1.54E-3	-6.43E-1	1.12E+0

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.48E-4	1.82E-4	3.52E-5	7.64E-4	5.67E-5	2.29E-4	1.50E-6	-6.36E-4	4.15E-4
NHWD	kg	3.94E+0	4.50E+0	4.48E-2	8.49E+0	1.37E+0	6.91E+0	5.49E+0	-1.76E+0	2.05E+1
RWD	kg	3.00E-3	4.81E-4	8.41E-5	3.57E-3	1.51E-4	5.37E-4	8.15E-6	-1.21E-3	3.05E-3
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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