Environmental Profile

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

Ecochain v3.5.64

Product:	3062837 - X-Stream PP Drain Pipe BK 150 L=6 S/PL
Unit:	1 Piece
Manufacturer:	Wavin - SE - Eskilstuna

Wavin X-Stream is a new generation of double-walled pipes and fittings made of polypropylene. The system is suitable for pressureless transport of rainwater and wastewater.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	20-06-2022
End of validity:	20-06-2027
Verifier:	Harry van Ewijk - 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 - SE - Eskilstuna (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

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.56E+1	1.58E+0	5.74E-1	1.78E+1	2.14E-1	7.05E+0	1.01E-1	-9.93E+0	1.52E+1
GWP-f	kg CO2 eq	1.64E+1	1.57E+0	4.16E-1	1.84E+1	2.14E-1	6.21E+0	1.01E-1	-9.90E+0	1.50E+1
GWP-b	kg CO2 eq	-7.69E-1	7.15E-4	1.09E-1	-6.58E-1	1.30E-4	8.37E-1	8.78E-5	-3.47E-2	1.44E-1
GWP-luluc	kg CO2 eq	7.39E-3	5.81E-4	4.84E-2	5.63E-2	7.56E-5	1.20E-3	1.71E-6	-1.92E-3	5.57E-2
ODP	kg CFC11 eq	3.06E-7	3.47E-7	4.71E-8	7.00E-7	4.93E-8	1.56E-7	2.53E-9	-3.65E-7	5.43E-7
AP	mol H+ eq	5.86E-2	9.57E-3	3.52E-3	7.17E-2	1.22E-3	6.55E-3	6.02E-5	-2.78E-2	5.17E-2
EP-fw	kg P eq	2.42E-4	1.58E-5	7.68E-6	2.65E-4	1.76E-6	3.46E-5	7.85E-8	-1.09E-4	1.92E-4
EP-m	kg N eq	9.83E-3	3.32E-3	1.04E-3	1.42E-2	4.36E-4	1.90E-3	3.93E-5	-4.92E-3	1.17E-2
EP-T	mol N eq	1.11E-1	3.66E-2	1.15E-2	1.59E-1	4.80E-3	2.10E-2	2.45E-4	-5.44E-2	1.30E-1
POCP	kg NMVOC eq	5.11E-2	1.04E-2	3.18E-3	6.47E-2	1.37E-3	6.63E-3	9.18E-5	-2.51E-2	4.77E-2
ADP-mm	kg Sb eq	2.22E-4	3.96E-5	1.25E-5	2.74E-4	5.53E-6	2.60E-5	6.07E-8	-6.57E-5	2.40E-4
ADP-f	MJ	5.84E+2	2.37E+1	4.13E+0	6.11E+2	3.28E+0	2.08E+1	1.84E-1	-3.13E+2	3.23E+2
WDP	m3 depriv.	1.17E+1	8.43E-2	2.66E+0	1.45E+1	1.01E-2	4.08E-1	9.20E-4	-5.42E+0	9.47E+0
PM	disease inc.	5.23E-7	1.40E-7	5.95E-8	7.23E-7	1.93E-8	1.08E-7	1.27E-9	-2.33E-7	6.18E-7
IR	kBq U-235 eq	3.01E-1	9.93E-2	1.23E-2	4.12E-1	1.43E-2	6.27E-2	8.56E-4	-1.45E-1	3.45E-1
ETP-fw	CTUe	8.77E+1	2.11E+1	1.15E+1	1.20E+2	2.66E+0	2.35E+1	1.54E-1	-3.86E+1	1.08E+2
HTP-c	CTUh	4.04E-9	6.88E-10	4.55E-10	5.18E-9	9.48E-11	2.83E-9	4.50E-12	-1.65E-9	6.46E-9
HTP-nc	CTUh	1.06E-7	2.30E-8	1.24E-8	1.42E-7	3.18E-9	3.50E-8	9.93E-11	-4.68E-8	1.33E-7
SQP	Pt	9.07E+1	2.04E+1	5.44E-1	1.12E+2	2.81E+0	1.66E+1	4.73E-1	-8.38E+0	1.23E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.01E+1	2.95E-1	2.61E+1	4.65E+1	4.71E-2	1.03E+0	7.15E-3	-3.88E+0	4.37E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	2.01E+1	2.95E-1	2.61E+1	4.65E+1	4.71E-2	1.03E+0	7.15E-3	-3.88E+0	4.37E+1
PENRE	MJ	6.26E+2	2.52E+1	4.39E+0	6.56E+2	3.48E+0	2.22E+1	1.96E-1	-3.37E+2	3.45E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.26E+2	2.52E+1	4.39E+0	6.56E+2	3.48E+0	2.22E+1	1.96E-1	-3.37E+2	3.45E+2
PET	MJ	6.46E+2	2.55E+1	3.05E+1	7.02E+2	3.53E+0	2.32E+1	2.03E-1	-3.41E+2	3.88E+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	1.78E-1	2.87E-3	6.33E-2	2.44E-1	3.71E-4	1.20E-2	2.27E-4	-8.10E-2	1.76E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.36E-5	5.97E-5	6.30E-6	1.40E-4	8.39E-6	3.38E-5	2.22E-7	-7.18E-5	1.10E-4
NHWD	kg	6.65E-1	1.49E+0	1.93E-2	2.18E+0	2.03E-1	1.02E+0	8.13E-1	-2.41E-1	3.97E+0
RWD	kg	2.63E-4	1.56E-4	1.75E-5	4.36E-4	2.23E-5	7.94E-5	1.20E-6	-1.31E-4	4.09E-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

Ecochain

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777