Environmental Profile

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

Ecochain v3.5.64

Product:	3023682 - X-Stream PP Pipe BK 100 SN8 L=6
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	8.18E+0	7.89E-1	2.77E-1	9.25E+0	1.08E-1	3.70E+0	5.12E-2	-5.05E+0	8.05E+0
GWP-f	kg CO2 eq	8.39E+0	7.88E-1	2.01E-1	9.38E+0	1.08E-1	3.46E+0	5.12E-2	-5.03E+0	7.96E+0
GWP-b	kg CO2 eq	-2.08E-1	3.58E-4	5.28E-2	-1.55E-1	6.54E-5	2.38E-1	4.48E-5	-1.72E-2	6.62E-2
GWP-luluc	kg CO2 eq	3.13E-3	2.91E-4	2.33E-2	2.67E-2	3.81E-5	6.94E-4	8.73E-7	-9.64E-4	2.65E-2
ODP	kg CFC11 eq	2.07E-7	1.74E-7	2.27E-8	4.04E-7	2.48E-8	1.49E-7	1.29E-9	-1.94E-7	3.85E-7
AP	mol H+ eq	3.04E-2	4.79E-3	1.70E-3	3.69E-2	6.14E-4	3.92E-3	3.07E-5	-1.40E-2	2.74E-2
EP-fw	kg P eq	1.27E-4	7.90E-6	3.70E-6	1.39E-4	8.86E-7	2.28E-5	4.00E-8	-5.48E-5	1.08E-4
EP-m	kg N eq	5.05E-3	1.66E-3	5.04E-4	7.21E-3	2.20E-4	1.05E-3	2.09E-5	-2.48E-3	6.02E-3
EP-T	mol N eq	5.70E-2	1.83E-2	5.52E-3	8.08E-2	2.42E-3	1.18E-2	1.25E-4	-2.74E-2	6.77E-2
POCP	kg NMVOC eq	2.64E-2	5.21E-3	1.53E-3	3.31E-2	6.92E-4	3.67E-3	4.68E-5	-1.26E-2	2.49E-2
ADP-mm	kg Sb eq	2.04E-4	1.98E-5	6.04E-6	2.30E-4	2.79E-6	1.57E-5	3.09E-8	-3.59E-5	2.13E-4
ADP-f	MJ	2.97E+2	1.19E+1	1.99E+0	3.11E+2	1.65E+0	1.37E+1	9.40E-2	-1.58E+2	1.69E+2
WDP	m3 depriv.	5.93E+0	4.22E-2	1.28E+0	7.26E+0	5.07E-3	4.42E-1	4.68E-4	-2.71E+0	5.00E+0
PM	disease inc.	2.73E-7	7.03E-8	2.87E-8	3.72E-7	9.72E-9	5.73E-8	6.46E-10	-1.17E-7	3.23E-7
IR	kBq U-235 eq	1.70E-1	4.97E-2	5.93E-3	2.25E-1	7.23E-3	3.87E-2	4.36E-4	-7.35E-2	1.98E-1
ETP-fw	CTUe	4.81E+1	1.06E+1	5.56E+0	6.42E+1	1.34E+0	1.40E+1	8.13E-2	-1.95E+1	6.01E+1
HTP-c	CTUh	2.05E-9	3.44E-10	2.19E-10	2.62E-9	4.78E-11	1.51E-9	2.30E-12	-8.32E-10	3.35E-9
HTP-nc	CTUh	5.52E-8	1.15E-8	5.98E-9	7.27E-8	1.60E-9	2.00E-8	5.12E-11	-2.35E-8	7.09E-8
SQP	Pt	3.14E+1	1.02E+1	2.62E-1	4.19E+1	1.41E+0	8.54E+0	2.41E-1	-4.26E+0	4.78E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.73E+0	1.48E-1	1.26E+1	2.04E+1	2.37E-2	6.78E-1	3.66E-3	-1.95E+0	1.92E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.73E+0	1.48E-1	1.26E+1	2.04E+1	2.37E-2	6.78E-1	3.66E-3	-1.95E+0	1.92E+1
PENRE	MJ	3.19E+2	1.26E+1	2.12E+0	3.34E+2	1.76E+0	1.46E+1	9.97E-2	-1.70E+2	1.80E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.19E+2	1.26E+1	2.12E+0	3.34E+2	1.76E+0	1.46E+1	9.97E-2	-1.70E+2	1.80E+2
PET	MJ	3.27E+2	1.27E+1	1.47E+1	3.54E+2	1.78E+0	1.53E+1	1.03E-1	-1.72E+2	1.99E+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	9.11E-2	1.44E-3	3.05E-2	1.23E-1	1.87E-4	8.87E-3	1.16E-4	-4.06E-2	9.16E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.92E-5	2.99E-5	3.04E-6	7.21E-5	4.23E-6	1.95E-5	1.13E-7	-3.78E-5	5.82E-5
NHWD	kg	3.41E-1	7.46E-1	9.30E-3	1.10E+0	1.02E-1	5.16E-1	4.14E-1	-1.21E-1	2.01E+0
RWD	kg	1.58E-4	7.80E-5	8.43E-6	2.44E-4	1.12E-5	4.60E-5	6.14E-7	-6.67E-5	2.36E-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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