Environmental Profile

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

Ecochain v3.5.64

Product:	3062864 - X-Stream PP Branch 45° BK 600/600
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	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	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	5.37E+0	5.37E+0	0	0	0	0	5.37E+0
GWP-f	kg CO2 eq	3.90E+0	3.90E+0	0	0	0	0	3.90E+0
GWP-b	kg CO2 eq	1.03E+0	1.03E+0	0	0	0	0	1.03E+0
GWP-luluc	kg CO2 eq	4.53E-1	4.53E-1	0	0	0	0	4.53E-1
ODP	kg CFC11 eq	4.41E-7	4.41E-7	0	0	0	0	4.41E-7
AP	mol H+ eq	3.30E-2	3.30E-2	0	0	0	0	3.30E-2
EP-fw	kg P eq	7.19E-5	7.19E-5	0	0	0	0	7.19E-5
EP-m	kg N eq	9.78E-3	9.78E-3	0	0	0	0	9.78E-3
EP-T	mol N eq	1.07E-1	1.07E-1	0	0	0	0	1.07E-1
POCP	kg NMVOC eq	2.98E-2	2.98E-2	0	0	0	0	2.98E-2
ADP-mm	kg Sb eq	1.17E-4	1.17E-4	0	0	0	0	1.17E-4
ADP-f	MJ	3.87E+1	3.87E+1	0	0	0	0	3.87E+1
WDP	m3 depriv.	2.49E+1	2.49E+1	0	0	0	0	2.49E+1
PM	disease inc.	5.57E-7	5.57E-7	0	0	0	0	5.57E-7
IR	kBq U-235 eq	1.15E-1	1.15E-1	0	0	0	0	1.15E-1
ETP-fw	CTUe	1.08E+2	1.08E+2	0	0	0	0	1.08E+2
HTP-c	CTUh	4.26E-9	4.26E-9	0	0	0	0	4.26E-9
HTP-nc	CTUh	1.16E-7	1.16E-7	0	0	0	0	1.16E-7
SQP	Pt	5.09E+0	5.09E+0	0	0	0	0	5.09E+0
Resource use	Unit	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	2.44E+2	2.44E+2	0	0	0	0	2.44E+2
PERM	MJ	0	0	0	0	0	0	0
PERT	MJ	2.44E+2	2.44E+2	0	0	0	0	2.44E+2
PENRE	MJ	4.11E+1	4.11E+1	0	0	0	0	4.11E+1
PENRM	MJ	0	0	0	0	0	0	0
PENRT	MJ	4.11E+1	4.11E+1	0	0	0	0	4.11E+1
PET	MJ	2.85E+2	2.85E+2	0	0	0	0	2.85E+2
SM	kg	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0
FW	m3	5.93E-1	5.93E-1	0	0	0	0	5.93E-1

Output flows and waste categories	Unit	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.90E-5	5.90E-5	0	0	0	0	5.90E-5
NHWD	kg	1.81E-1	1.81E-1	0	0	0	0	1.81E-1
RWD	kg	1.64E-4	1.64E-4	0	0	0	0	1.64E-4
CRU	kg	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0

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