Environmental Profile

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

Ecochain v3.5.80

Product:	3015163 - X-Stream PP Reducer BK 600x500
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

Wavin X-Stream is a new generation of double-walled pipes and □ttings made of polypropylene. The system is

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	5.73E+0	8.69E-1	5.55E-2	6.65E+0	2.91E-1	3.04E+1	1.37E-1	-1.59E+1	2.16E+1
GWP-f	kg CO2 eq	2.73E+1	8.69E-1	5.60E-2	2.83E+1	2.90E-1	8.58E+0	1.37E-1	-1.58E+1	2.15E+1
GWP-b	kg CO2 eq	-2.16E+1	5.27E-4	-5.91E-4	-2.16E+1	1.76E-4	2.18E+1	1.19E-4	-4.76E-2	1.52E-1
GWP-luluc	kg CO2 eq	1.81E-2	3.07E-4	5.73E-5	1.84E-2	1.03E-4	1.69E-3	2.33E-6	-1.17E-2	8.56E-3
ODP	kg CFC11 eq	1.13E-6	2.00E-7	3.17E-9	1.33E-6	6.69E-8	2.37E-7	3.43E-9	-8.69E-7	7.73E-7
AP	mol H+ eq	1.07E-1	4.95E-3	5.65E-4	1.12E-1	1.65E-3	1.00E-2	8.19E-5	-5.54E-2	6.87E-2
EP-fw	kg P eq	5.09E-4	7.15E-6	3.16E-6	5.19E-4	2.39E-6	4.89E-5	1.07E-7	-2.70E-4	3.01E-4
EP-m	kg N eq	2.02E-2	1.77E-3	5.95E-5	2.20E-2	5.92E-4	3.04E-3	5.33E-5	-1.15E-2	1.42E-2
EP-T	mol N eq	2.32E-1	1.95E-2	7.11E-4	2.52E-1	6.52E-3	3.36E-2	3.32E-4	-1.33E-1	1.60E-1
POCP	kg NMVOC eq	9.72E-2	5.58E-3	2.41E-4	1.03E-1	1.86E-3	1.04E-2	1.25E-4	-5.38E-2	6.17E-2
ADP-mm	kg Sb eq	5.07E-4	2.25E-5	7.54E-6	5.37E-4	7.51E-6	3.79E-5	8.26E-8	-1.33E-4	4.50E-4
ADP-f	MJ	8.75E+2	1.33E+1	5.20E-1	8.88E+2	4.46E+0	3.01E+1	2.51E-1	-4.64E+2	4.59E+2
WDP	m3 depriv.	1.67E+1	4.09E-2	2.00E-2	1.68E+1	1.37E-2	5.67E-1	1.28E-3	-8.15E+0	9.19E+0
PM	disease inc.	1.34E-6	7.84E-8	3.48E-9	1.42E-6	2.62E-8	1.60E-7	1.72E-9	-6.66E-7	9.46E-7
IR	kBq U-235 eq	6.45E-1	5.83E-2	3.90E-4	7.04E-1	1.95E-2	9.35E-2	1.16E-3	-3.20E-1	4.98E-1
ETP-fw	CTUe	2.32E+2	1.08E+1	4.63E+0	2.47E+2	3.62E+0	3.36E+1	2.10E-1	-1.39E+2	1.46E+2
HTP-c	CTUh	1.63E-8	3.85E-10	2.36E-10	1.69E-8	1.29E-10	4.42E-9	6.13E-12	-8.91E-9	1.25E-8
HTP-nc	CTUh	2.47E-7	1.29E-8	6.00E-9	2.66E-7	4.31E-9	5.07E-8	1.35E-10	-1.26E-7	1.96E-7
SQP	Pt	1.89E+3	1.14E+1	8.59E-1	1.90E+3	3.81E+0	2.40E+1	6.43E-1	-1.33E+3	5.99E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.07E+2	1.91E-1	9.21E+0	3.16E+2	6.39E-2	1.45E+0	9.69E-3	-2.08E+2	1.10E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.07E+2	1.91E-1	9.21E+0	3.16E+2	6.39E-2	1.45E+0	9.69E-3	-2.08E+2	1.10E+2
PENRE	MJ	9.38E+2	1.42E+1	5.54E-1	9.53E+2	4.73E+0	3.20E+1	2.66E-1	-5.00E+2	4.90E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.38E+2	1.42E+1	5.54E-1	9.53E+2	4.73E+0	3.20E+1	2.66E-1	-5.00E+2	4.90E+2
PET	MJ	1.25E+3	1.43E+1	9.77E+0	1.27E+3	4.79E+0	3.35E+1	2.76E-1	-7.07E+2	6.01E+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	2.69E-1	1.51E-3	5.59E-4	2.71E-1	5.04E-4	1.75E-2	3.09E-4	-1.32E-1	1.58E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.93E-4	3.41E-5	1.05E-10	3.27E-4	1.14E-5	5.02E-5	3.02E-7	-1.99E-4	1.90E-4
NHWD	kg	2.16E+0	8.26E-1	4.04E-4	2.99E+0	2.76E-1	1.55E+0	1.10E+0	-1.06E+0	4.86E+0
RWD	kg	6.57E-4	9.07E-5	4.20E-11	7.47E-4	3.03E-5	1.20E-4	1.64E-6	-3.22E-4	5.77E-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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