

Environmental Profile

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

Ecochain v3.5.64



Product: 3010935 - X-Stream PP Bend 45° BK 200 S/S
 Unit: 1 Piece
 Manufacturer: Wavin Poland Buk
 Address: Dobieżyńska 43
 64-320 Buk
 Poland
 Contact: <https://www.wavin.com/en-en>

LCA standard: EN15804+A2 (2019)
 Standard database: Worldwide - Ecoinvent v 3.6 Cut-Off
 Externally verified: Yes
 Issue date: 19-09-2022
 End of validity: 19-09-2027
 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 Wavin X-Stream system is a new generation of profiled pipe system with ring stiffness of SN 8, outside black and inside bright for drainage of foul water and storm water. The Wavin X-Stream structured wall polypropylene (PP) pipes systems incorporate a unique new design for fast, secure assembly.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin Poland Buk (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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					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]

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Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.41E+0	6.40E-2	1.21E-1	2.59E+0	3.15E-2	9.15E-1	1.48E-2	-1.46E+0	2.09E+0
GWP-f	kg CO2 eq	2.40E+0	6.39E-2	1.17E-1	2.58E+0	3.15E-2	9.17E-1	1.49E-2	-1.46E+0	2.08E+0
GWP-b	kg CO2 eq	1.08E-2	2.95E-5	4.42E-3	1.53E-2	1.91E-5	-1.26E-3	1.29E-5	-5.21E-3	8.84E-3
GWP-luluc	kg CO2 eq	6.34E-4	2.34E-5	6.24E-5	7.20E-4	1.12E-5	1.77E-4	2.56E-7	-2.96E-4	6.12E-4
ODP	kg CFC11 eq	4.48E-8	1.41E-8	1.26E-8	7.15E-8	7.26E-9	2.30E-8	3.73E-10	-6.75E-8	3.47E-8
AP	mol H+ eq	8.62E-3	3.71E-4	6.55E-4	9.65E-3	1.79E-4	9.66E-4	8.90E-6	-4.13E-3	6.68E-3
EP-fw	kg P eq	3.53E-5	6.45E-7	3.42E-6	3.94E-5	2.59E-7	5.10E-6	1.17E-8	-1.68E-5	2.80E-5
EP-m	kg N eq	1.42E-3	1.31E-4	8.43E-5	1.63E-3	6.42E-5	2.81E-4	5.76E-6	-7.28E-4	1.26E-3
EP-T	mol N eq	1.61E-2	1.44E-3	9.59E-4	1.85E-2	7.08E-4	3.09E-3	3.61E-5	-8.05E-3	1.43E-2
POCP	kg NMVOC eq	7.37E-3	4.11E-4	3.23E-4	8.10E-3	2.02E-4	9.77E-4	1.36E-5	-3.70E-3	5.60E-3
ADP-mm	kg Sb eq	3.65E-5	1.62E-6	7.50E-6	4.57E-5	8.15E-7	3.83E-6	9.00E-9	-1.01E-5	4.02E-5
ADP-f	MJ	8.49E+1	9.64E-1	1.36E+0	8.73E+1	4.84E-1	3.07E+0	2.72E-2	-4.58E+1	4.50E+1
WDP	m3 depriv.	1.69E+0	3.45E-3	2.17E-2	1.72E+0	1.48E-3	6.02E-2	1.49E-4	-8.23E-1	9.55E-1
PM	disease inc.	7.51E-8	5.74E-9	4.45E-9	8.52E-8	2.84E-9	1.59E-8	1.87E-10	-3.43E-8	6.99E-8
IR	kBq U-235 eq	4.36E-2	4.04E-3	1.90E-3	4.95E-2	2.11E-3	9.24E-3	1.26E-4	-2.23E-2	3.87E-2
ETP-fw	CTUe	1.31E+1	8.60E-1	4.90E+0	1.89E+1	3.93E-1	3.46E+0	2.28E-2	-5.97E+0	1.68E+1
HTP-c	CTUh	5.62E-10	2.79E-11	2.47E-10	8.37E-10	1.40E-11	4.25E-10	6.74E-13	-2.53E-10	1.02E-9
HTP-nc	CTUh	1.57E-8	9.40E-10	6.12E-9	2.27E-8	4.68E-10	5.17E-9	1.47E-11	-7.28E-9	2.11E-8
SQP	Pt	3.03E+0	8.36E-1	9.29E-1	4.80E+0	4.14E-1	2.45E+0	6.98E-2	-1.28E+0	6.45E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.23E+0	1.21E-2	9.05E+0	1.03E+1	6.94E-3	1.51E-1	1.05E-3	-5.91E-1	9.85E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.23E+0	1.21E-2	9.05E+0	1.03E+1	6.94E-3	1.51E-1	1.05E-3	-5.91E-1	9.85E+0
PENRE	MJ	9.11E+1	1.02E+0	1.47E+0	9.36E+1	5.13E-1	3.27E+0	2.89E-2	-4.94E+1	4.81E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	9.11E+1	1.02E+0	1.47E+0	9.36E+1	5.13E-1	3.27E+0	2.89E-2	-4.94E+1	4.81E+1
PET	MJ	9.24E+1	1.04E+0	1.05E+1	1.04E+2	5.20E-1	3.42E+0	2.99E-2	-5.00E+1	5.79E+1
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	2.55E-2	1.17E-4	6.14E-4	2.63E-2	5.47E-5	1.77E-3	3.35E-5	-1.21E-2	1.60E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.06E-5	2.44E-6	1.30E-6	1.43E-5	1.24E-6	4.99E-6	3.29E-8	-1.10E-5	9.63E-6
NHWD	kg	9.52E-2	6.12E-2	3.61E-3	1.60E-1	3.00E-2	1.51E-1	1.20E-1	-3.69E-2	4.23E-1
RWD	kg	3.78E-5	6.33E-6	2.39E-6	4.65E-5	3.29E-6	1.17E-5	1.78E-7	-2.00E-5	4.16E-5
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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