

Environmental Profile

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

Ecochain v3.5.80



Product: 3009645 - KG Multilayer Pipe DN400 L=2
Unit: 1 piece
Manufacturer: Wavin - NL - Hardenberg - Verified
Address: J.C. Kellerlaan 3
7772 SG Hardenberg
Netherlands

LCA standard: NMD Bepalingsmethode 1.1 (2022)
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



The Wavin KG sewer pipes and fittings are suitable for drain and underground sewer applications. This easy push-fit rubber ring jointing system is durable, corrosion free and light weight.

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 - NL - Hardenberg - Verified (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

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3--eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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

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Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	3.07	0.16	0.27	3.5	0.1	2.17	0.01	-0.77	5.01
ADPE	kg Sb-eq	1.15E-3	3.49E-5	4.89E-5	1.23E-3	2.08E-5	1.72E-4	2.17E-7	-1.08E-4	1.32E-3
ADPF	kg Sb-eq	3.08E-1	1.00E-2	1.31E-2	3.31E-1	5.87E-3	6.09E-2	3.07E-4	-9.79E-2	3.00E-1
GWP	kg CO2-eq	2.69E+1	1.36E+0	2.33E+0	3.06E+1	7.99E-1	2.12E+1	1.95E-1	-9.29E+0	4.35E+1
ODP	kg CFC-11-eq	1.23E-5	2.42E-7	2.19E-7	1.27E-5	1.48E-7	2.43E-6	7.39E-9	-2.66E-6	1.27E-5
POCP	kg ethene-eq	1.83E-2	8.23E-4	1.03E-3	2.02E-2	4.80E-4	4.83E-3	5.17E-5	-3.47E-3	2.21E-2
AP	kg SO2-eq	1.07E-1	6.00E-3	9.14E-3	1.22E-1	3.44E-3	3.51E-2	1.64E-4	-1.95E-2	1.41E-1
EP	kg PO4 3--eq	1.47E-2	1.18E-3	1.44E-3	1.73E-2	6.87E-4	5.37E-3	6.56E-5	-2.84E-3	2.06E-2
HTP	kg 1,4-DB-eq	1.02E+1	5.74E-1	8.80E-1	1.17E+1	3.42E-1	9.42E+0	1.68E-2	-1.81E+0	1.97E+1
FAETP	kg 1,4-DB-eq	1.35E+0	1.68E-2	3.58E-2	1.40E+0	1.00E-2	1.39E-1	5.13E-3	-3.67E-2	1.52E+0
MAETP	kg 1,4-DB-eq	8.16E+2	6.03E+1	1.46E+2	1.02E+3	3.58E+1	4.55E+2	6.22E+0	-1.07E+2	1.41E+3
TETP	kg 1,4-DB-eq	5.61E-1	2.03E-3	5.46E-2	6.17E-1	1.21E-3	3.35E-2	5.53E-5	-1.19E-2	6.40E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.10E+1	1.38E+0	2.74E+0	2.51E+1	8.07E-1	2.89E+1	2.27E-1	-9.49E+0	4.56E+1
GWP-f	kg CO2 eq	2.74E+1	1.38E+0	2.15E+0	3.10E+1	8.06E-1	2.13E+1	2.27E-1	-9.45E+0	4.39E+1
GWP-b	kg CO2 eq	-6.62E+0	6.35E-4	4.65E-1	-6.16E+0	4.89E-4	7.59E+0	2.90E-4	-3.34E-2	1.40E+0
GWP-luluc	kg CO2 eq	1.53E-1	5.04E-4	1.31E-1	2.85E-1	2.85E-4	9.37E-3	6.05E-6	-4.21E-3	2.90E-1
ODP	kg CFC11 eq	1.22E-5	3.04E-7	2.60E-7	1.28E-5	1.86E-7	2.51E-6	9.18E-9	-2.70E-6	1.28E-5
AP	mol H+ eq	1.31E-1	7.98E-3	1.17E-2	1.51E-1	4.59E-3	4.41E-2	2.19E-4	-2.45E-2	1.76E-1
EP-fw	kg P eq	1.15E-3	1.39E-5	3.07E-5	1.19E-3	6.63E-6	3.11E-4	2.74E-7	-1.87E-4	1.33E-3
EP-m	kg N eq	2.65E-2	2.81E-3	3.45E-3	3.27E-2	1.64E-3	1.09E-2	1.39E-4	-5.16E-3	4.02E-2
EP-T	mol N eq	2.83E-1	3.10E-2	3.70E-2	3.51E-1	1.81E-2	1.20E-1	8.78E-4	-6.07E-2	4.29E-1
POCP	kg NMVOC eq	9.37E-2	8.85E-3	1.05E-2	1.13E-1	5.17E-3	3.59E-2	2.98E-4	-1.86E-2	1.36E-1
ADP-mm	kg Sb eq	1.15E-3	3.49E-5	4.89E-5	1.23E-3	2.08E-5	1.72E-4	2.17E-7	-1.08E-4	1.32E-3
ADP-f	MJ	6.48E+2	2.07E+1	2.49E+1	6.94E+2	1.24E+1	1.21E+2	6.64E-1	-1.95E+2	6.32E+2
WDP	m3 depriv.	3.72E+1	7.42E-2	1.68E+1	5.41E+1	3.80E-2	4.64E+0	3.50E-3	-6.79E+0	5.20E+1
PM	disease inc.	1.57E-6	1.24E-7	1.82E-7	1.87E-6	7.27E-8	5.54E-7	4.55E-9	-1.85E-7	2.32E-6
IR	kBq U-235 eq	1.40E+0	8.69E-2	4.49E-2	1.53E+0	5.41E-2	4.20E-1	3.05E-3	-2.47E-1	1.76E+0
ETP-fw	CTUe	4.66E+2	1.85E+1	4.15E+1	5.25E+2	1.00E+1	8.85E+2	9.72E+0	-1.03E+2	1.33E+3
HTP-c	CTUh	1.96E-8	6.00E-10	1.42E-9	2.17E-8	3.57E-10	1.33E-8	1.70E-11	-3.15E-9	3.22E-8
HTP-nc	CTUh	5.37E-7	2.02E-8	4.33E-8	6.00E-7	1.20E-8	3.15E-7	1.87E-9	-9.85E-8	8.31E-7
SQP	Pt	7.78E+2	1.80E+1	1.86E+0	7.98E+2	1.06E+1	7.58E+1	1.68E+0	-1.58E+2	7.29E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.32E+2	2.60E-1	7.50E+1	2.07E+2	1.77E-1	8.57E+0	2.40E-2	-3.40E+1	1.82E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.32E+2	2.60E-1	7.50E+1	2.07E+2	1.77E-1	8.57E+0	2.40E-2	-3.40E+1	1.82E+2
PENRE	MJ	6.95E+2	2.20E+1	2.70E+1	7.44E+2	1.31E+1	1.28E+2	7.05E-1	-2.12E+2	6.74E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.95E+2	2.20E+1	2.70E+1	7.44E+2	1.31E+1	1.28E+2	7.05E-1	-2.12E+2	6.74E+2
PET	MJ	8.27E+2	2.23E+1	1.02E+2	9.51E+2	1.33E+1	1.37E+2	7.29E-1	-2.46E+2	8.56E+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	4.45E-1	2.53E-3	3.96E-1	8.44E-1	1.40E-3	1.29E-1	8.15E-4	-7.72E-2	8.97E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	5.56E-4	5.26E-5	3.48E-5	6.44E-4	3.16E-5	1.95E-4	7.98E-7	-1.89E-4	6.82E-4
NHWD	kg	2.80E+0	1.32E+0	5.03E-2	4.17E+0	7.67E-1	4.59E+0	3.08E+0	-4.35E-1	1.22E+1
RWD	kg	1.33E-3	1.36E-4	6.26E-5	1.53E-3	8.41E-5	4.53E-4	4.35E-6	-2.33E-4	1.84E-3
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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