

Environmental Profile

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

Ecochain v3.5.80



Product: 3009644 - KG Multilayer Pipe DN400 L=1
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	1.78	0.09	0.14	2.01	0.05	1.19	0.01	-0.44	2.82
ADPE	kg Sb-eq	8.24E-4	1.92E-5	2.61E-5	8.70E-4	1.12E-5	9.28E-5	1.17E-7	-6.54E-5	9.08E-4
ADPF	kg Sb-eq	1.76E-1	5.54E-3	7.01E-3	1.88E-1	3.16E-3	3.28E-2	1.66E-4	-5.48E-2	1.70E-1
GWP	kg CO2-eq	1.55E+1	7.53E-1	1.25E+0	1.75E+1	4.30E-1	1.19E+1	1.06E-1	-5.24E+0	2.46E+1
ODP	kg CFC-11-eq	6.74E-6	1.34E-7	1.17E-7	6.99E-6	7.98E-8	1.30E-6	4.00E-9	-1.46E-6	6.91E-6
POCP	kg ethene-eq	1.10E-2	4.54E-4	5.49E-4	1.20E-2	2.58E-4	2.63E-3	2.81E-5	-2.05E-3	1.29E-2
AP	kg SO2-eq	6.30E-2	3.31E-3	4.89E-3	7.12E-2	1.85E-3	1.91E-2	8.86E-5	-1.17E-2	8.06E-2
EP	kg PO4 3--eq	8.77E-3	6.50E-4	7.72E-4	1.02E-2	3.70E-4	2.95E-3	3.63E-5	-1.86E-3	1.17E-2
HTP	kg 1,4-DB-eq	5.97E+0	3.17E-1	4.70E-1	6.76E+0	1.84E-1	5.07E+0	9.11E-3	-1.07E+0	1.10E+1
FAETP	kg 1,4-DB-eq	7.34E-1	9.26E-3	1.92E-2	7.62E-1	5.39E-3	7.47E-2	2.78E-3	-2.17E-2	8.24E-1
MAETP	kg 1,4-DB-eq	4.76E+2	3.33E+1	7.82E+1	5.87E+2	1.93E+1	2.45E+2	3.37E+0	-6.09E+1	7.94E+2
TETP	kg 1,4-DB-eq	3.02E-1	1.12E-3	2.92E-2	3.33E-1	6.52E-4	1.80E-2	3.00E-5	-6.91E-3	3.44E-1
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	8.84E+0	7.60E-1	1.47E+0	1.11E+1	4.34E-1	1.94E+1	1.23E-1	-5.35E+0	2.57E+1
GWP-f	kg CO2 eq	1.58E+1	7.59E-1	1.15E+0	1.77E+1	4.34E-1	1.19E+1	1.23E-1	-5.33E+0	2.48E+1
GWP-b	kg CO2 eq	-7.00E+0	3.51E-4	2.49E-1	-6.75E+0	2.63E-4	7.50E+0	1.58E-4	-1.77E-2	7.35E-1
GWP-luluc	kg CO2 eq	8.43E-2	2.78E-4	7.01E-2	1.55E-1	1.53E-4	5.03E-3	3.28E-6	-2.76E-3	1.57E-1
ODP	kg CFC11 eq	6.73E-6	1.68E-7	1.39E-7	7.04E-6	9.99E-8	1.35E-6	4.97E-9	-1.48E-6	7.01E-6
AP	mol H+ eq	7.76E-2	4.40E-3	6.27E-3	8.82E-2	2.47E-3	2.40E-2	1.19E-4	-1.49E-2	9.99E-2
EP-fw	kg P eq	6.62E-4	7.66E-6	1.64E-5	6.87E-4	3.57E-6	1.67E-4	1.48E-7	-1.06E-4	7.51E-4
EP-m	kg N eq	1.58E-2	1.55E-3	1.85E-3	1.92E-2	8.84E-4	5.99E-3	7.72E-5	-3.28E-3	2.29E-2
EP-T	mol N eq	1.71E-1	1.71E-2	1.98E-2	2.08E-1	9.74E-3	6.61E-2	4.75E-4	-4.04E-2	2.44E-1
POCP	kg NMVOC eq	5.64E-2	4.89E-3	5.60E-3	6.68E-2	2.78E-3	1.97E-2	1.62E-4	-1.15E-2	7.80E-2
ADP-mm	kg Sb eq	8.24E-4	1.92E-5	2.61E-5	8.70E-4	1.12E-5	9.28E-5	1.17E-7	-6.54E-5	9.08E-4
ADP-f	MJ	3.70E+2	1.15E+1	1.33E+1	3.94E+2	6.66E+0	6.50E+1	3.60E-1	-1.09E+2	3.58E+2
WDP	m3 depriv.	2.05E+1	4.10E-2	9.00E+0	2.95E+1	2.04E-2	2.49E+0	1.89E-3	-3.67E+0	2.84E+1
PM	disease inc.	1.05E-6	6.82E-8	9.73E-8	1.22E-6	3.91E-8	3.00E-7	2.46E-9	-1.27E-7	1.43E-6
IR	kBq U-235 eq	8.33E-1	4.80E-2	2.40E-2	9.05E-1	2.91E-2	2.27E-1	1.65E-3	-1.39E-1	1.02E+0
ETP-fw	CTUe	2.78E+2	1.02E+1	2.22E+1	3.10E+2	5.40E+0	4.74E+2	5.21E+0	-6.98E+1	7.25E+2
HTP-c	CTUh	1.21E-8	3.31E-10	7.57E-10	1.32E-8	1.92E-10	7.38E-9	9.23E-12	-1.92E-9	1.89E-8
HTP-nc	CTUh	3.08E-7	1.12E-8	2.32E-8	3.43E-7	6.44E-9	1.70E-7	1.01E-9	-5.91E-8	4.61E-7
SQP	Pt	7.33E+2	9.94E+0	9.95E-1	7.44E+2	5.69E+0	4.09E+1	9.12E-1	-1.51E+2	6.40E+2

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.18E+2	1.43E-1	4.01E+1	1.59E+2	9.55E-2	4.60E+0	1.31E-2	-3.16E+1	1.32E+2
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.18E+2	1.43E-1	4.01E+1	1.59E+2	9.55E-2	4.60E+0	1.31E-2	-3.16E+1	1.32E+2
PENRE	MJ	3.96E+2	1.22E+1	1.44E+1	4.23E+2	7.07E+0	6.91E+1	3.82E-1	-1.19E+2	3.81E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.96E+2	1.22E+1	1.44E+1	4.23E+2	7.07E+0	6.91E+1	3.82E-1	-1.19E+2	3.81E+2
PET	MJ	5.15E+2	1.23E+1	5.45E+1	5.81E+2	7.16E+0	7.37E+1	3.95E-1	-1.50E+2	5.12E+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	2.54E-1	1.39E-3	2.12E-1	4.68E-1	7.53E-4	6.99E-2	4.41E-4	-4.23E-2	4.97E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.31E-4	2.90E-5	1.86E-5	3.79E-4	1.70E-5	1.06E-4	4.32E-7	-1.08E-4	3.94E-4
NHWD	kg	1.71E+0	7.27E-1	2.69E-2	2.47E+0	4.13E-1	2.54E+0	1.67E+0	-2.64E-1	6.82E+0
RWD	kg	8.16E-4	7.52E-5	3.35E-5	9.24E-4	4.53E-5	2.45E-4	2.35E-6	-1.33E-4	1.08E-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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