Environmental Profile

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

Ecochain v3.5.71

Product:	4013647 - Hep20 Barrier Pipe-Blu Cndut 28mm L=25
Unit:	1 piece
Manufacturer:	Wavin - UK - Doncaster - Verified

Suitable for various professional plumbing jobs. Hep20 is packed with unique features that make push-fit plumbing fitting easier quicker and more secure for installers. No additional equipment or tools required when installing or demounting fittings compared to others where a solder or glue is required. Just push the pipework into the fitting to create a watertight seal. A wide range of plastic fittings, plumbing pipes and tubes are available. It is the only system with joint recognition and se

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	09-02-2023
End of validity:	09-02-2028
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 - UK - Doncaster - 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

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	1.92E+1	4.82E-1	3.44E-1	2.00E+1	1.37E-1	1.25E+1	5.97E-2	-1.56E+1	1.71E+1
GWP-f	kg CO2 eq	2.36E+1	4.81E-1	3.45E-1	2.44E+1	1.37E-1	4.50E+0	5.97E-2	-1.20E+1	1.71E+1
GWP-b	kg CO2 eq	-4.38E+0	2.74E-4	-7.16E-4	-4.38E+0	8.31E-5	7.99E+0	5.96E-5	-3.60E+0	9.29E-3
GWP-luluc	kg CO2 eq	5.29E-3	1.76E-4	4.38E-4	5.91E-3	4.84E-5	-1.07E-3	1.15E-6	-3.58E-4	4.52E-3
ODP	kg CFC11 eq	3.49E-7	1.10E-7	1.61E-8	4.75E-7	3.15E-8	5.55E-8	1.62E-9	-2.40E-7	3.24E-7
AP	mol H+ eq	1.50E-1	3.32E-3	2.20E-3	1.56E-1	7.80E-4	1.32E-3	4.02E-5	-5.69E-2	1.01E-1
EP-fw	kg P eq	1.97E-4	3.87E-6	5.26E-6	2.06E-4	1.13E-6	-1.86E-6	5.31E-8	-1.39E-5	1.92E-4
EP-m	kg N eq	1.87E-2	1.11E-3	3.15E-4	2.02E-2	2.79E-4	5.19E-4	7.36E-5	-7.74E-3	1.33E-2
EP-T	mol N eq	2.07E-1	1.23E-2	3.70E-3	2.23E-1	3.07E-3	5.36E-3	1.60E-4	-8.52E-2	1.46E-1
POCP	kg NMVOC eq	1.05E-1	3.46E-3	1.13E-3	1.10E-1	8.79E-4	7.58E-4	5.83E-5	-4.57E-2	6.59E-2
ADP-mm	kg Sb eq	1.86E-4	1.20E-5	1.28E-5	2.11E-4	3.54E-6	8.10E-6	3.93E-8	-3.36E-6	2.20E-4
ADP-f	MJ	5.24E+2	7.33E+0	3.84E+0	5.36E+2	2.10E+0	4.48E+0	1.19E-1	-2.60E+2	2.83E+2
WDP	m3 depriv.	5.25E+0	2.20E-2	8.67E-2	5.36E+0	6.45E-3	1.33E-1	5.52E-4	-1.19E+0	4.32E+0
PM	disease inc.	1.22E-6	4.22E-8	1.61E-8	1.28E-6	1.24E-8	4.76E-10	8.14E-10	-4.82E-7	8.08E-7
IR	kBq U-235 eq	1.81E-1	3.20E-2	5.83E-3	2.19E-1	9.18E-3	1.67E-2	5.75E-4	-1.72E-2	2.28E-1
ETP-fw	CTUe	1.04E+2	5.91E+0	1.34E+1	1.23E+2	1.71E+0	7.79E+0	2.44E-1	-1.23E+1	1.21E+2
HTP-c	CTUh	8.81E-9	2.15E-10	5.25E-10	9.55E-9	6.07E-11	5.74E-10	3.15E-12	-8.68E-10	9.32E-9
HTP-nc	CTUh	1.20E-7	6.97E-9	1.20E-8	1.39E-7	2.03E-9	1.43E-8	9.97E-11	-1.94E-8	1.36E-7
SQP	Pt	3.97E+2	6.08E+0	1.65E+0	4.05E+2	1.80E+0	-2.86E+2	3.03E-1	-1.62E+1	1.05E+2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.03E+1	1.03E-1	3.24E+1	9.28E+1	3.01E-2	-4.23E+1	5.47E-3	-4.86E+0	4.57E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.03E+1	1.03E-1	3.24E+1	9.28E+1	3.01E-2	-4.23E+1	5.47E-3	-4.86E+0	4.57E+1
PENRE	MJ	5.63E+2	7.79E+0	4.08E+0	5.75E+2	2.23E+0	4.76E+0	1.27E-1	-2.80E+2	3.02E+2
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.63E+2	7.79E+0	4.08E+0	5.75E+2	2.23E+0	4.76E+0	1.27E-1	-2.80E+2	3.02E+2
PET	MJ	6.23E+2	7.89E+0	3.65E+1	6.68E+2	2.26E+0	-3.75E+1	1.32E-1	-2.85E+2	3.47E+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	1.27E-1	8.12E-4	3.01E-3	1.31E-1	2.38E-4	3.86E-3	1.49E-4	-2.62E-2	1.09E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.92E-5	1.83E-5	3.65E-8	1.18E-4	5.37E-6	7.44E-7	1.42E-7	-4.70E-5	7.68E-5
NHWD	kg	1.82E+0	4.38E-1	8.45E-4	2.26E+0	1.30E-1	5.78E-1	5.21E-1	-1.28E-1	3.36E+0
RWD	kg	1.80E-4	4.99E-5	2.74E-8	2.30E-4	1.43E-5	2.31E-5	7.87E-7	-2.06E-5	2.48E-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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