Environmental Profile

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

Ecochain v3.5.71

Product:	3030679 - Hep20 Pb Elbow 45° Spigot W 10 PF/SP
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	9.16E-2	1.49E-3	8.25E-3	1.01E-1	3.17E-4	2.53E-2	1.49E-4	-4.74E-2	7.96E-2
GWP-f	kg CO2 eq	9.58E-2	1.48E-3	7.82E-3	1.05E-1	3.17E-4	1.50E-2	1.49E-4	-4.90E-2	7.16E-2
GWP-b	kg CO2 eq	-4.24E-3	8.60E-7	4.28E-4	-3.81E-3	1.92E-7	1.03E-2	1.49E-7	1.60E-3	8.07E-3
GWP-luluc	kg CO2 eq	3.87E-5	5.39E-7	4.92E-6	4.42E-5	1.12E-7	1.73E-8	2.90E-9	-3.72E-5	7.15E-6
ODP	kg CFC11 eq	2.48E-9	3.41E-10	7.44E-10	3.56E-9	7.29E-11	2.73E-10	4.06E-12	-1.07E-9	2.84E-9
AP	mol H+ eq	4.58E-4	9.80E-6	2.76E-5	4.96E-4	1.80E-6	1.01E-5	1.01E-7	-1.93E-4	3.14E-4
EP-fw	kg P eq	1.46E-6	1.20E-8	7.32E-8	1.54E-6	2.60E-9	3.20E-8	1.33E-10	-8.34E-7	7.43E-7
EP-m	kg N eq	8.65E-5	3.33E-6	4.90E-6	9.47E-5	6.45E-7	3.44E-6	1.90E-7	-4.03E-5	5.87E-5
EP-T	mol N eq	8.79E-4	3.67E-5	5.16E-5	9.67E-4	7.11E-6	3.70E-5	4.00E-7	-4.16E-4	5.96E-4
POCP	kg NMVOC eq	3.24E-4	1.04E-5	1.63E-5	3.51E-4	2.03E-6	1.02E-5	1.46E-7	-1.50E-4	2.13E-4
ADP-mm	kg Sb eq	2.98E-6	3.74E-8	1.39E-7	3.16E-6	8.19E-9	3.97E-8	9.83E-11	-3.23E-7	2.89E-6
ADP-f	MJ	1.38E+0	2.27E-2	1.04E-1	1.51E+0	4.86E-3	2.59E-2	2.99E-4	-6.95E-1	8.43E-1
WDP	m3 depriv.	3.04E-2	6.84E-5	1.33E-3	3.18E-2	1.49E-5	5.65E-4	1.38E-6	-1.83E-2	1.41E-2
PM	disease inc.	4.20E-9	1.31E-10	2.02E-10	4.54E-9	2.86E-11	1.25E-10	2.04E-12	-2.02E-9	2.67E-9
IR	kBq U-235 eq	9.20E-4	9.90E-5	1.05E-4	1.12E-3	2.12E-5	8.81E-5	1.44E-6	-3.75E-4	8.59E-4
ETP-fw	CTUe	9.46E-1	1.83E-2	1.56E-1	1.12E+0	3.95E-3	5.08E-2	6.30E-4	-4.37E-1	7.38E-1
HTP-c	CTUh	2.50E-11	6.62E-13	6.27E-12	3.19E-11	1.40E-13	3.67E-12	7.91E-15	-6.80E-12	2.89E-11
HTP-nc	CTUh	4.21E-10	2.16E-11	1.38E-10	5.80E-10	4.70E-12	5.70E-11	2.54E-13	-1.84E-10	4.58E-10
SQP	Pt	6.57E-1	1.89E-2	2.04E-2	6.96E-1	4.16E-3	-2.70E-1	7.59E-4	-9.60E-1	-5.30E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.14E-1	3.20E-4	3.43E-1	4.58E-1	6.97E-5	-4.13E-2	1.38E-5	-1.77E-1	2.39E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.14E-1	3.20E-4	3.43E-1	4.58E-1	6.97E-5	-4.13E-2	1.38E-5	-1.77E-1	2.39E-1
PENRE	MJ	1.49E+0	2.41E-2	1.13E-1	1.62E+0	5.16E-3	2.76E-2	3.17E-4	-7.52E-1	9.05E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.49E+0	2.41E-2	1.13E-1	1.62E+0	5.16E-3	2.76E-2	3.17E-4	-7.52E-1	9.05E-1
PET	MJ	1.60E+0	2.44E-2	4.56E-1	2.08E+0	5.23E-3	-1.38E-2	3.31E-4	-9.29E-1	1.14E+0
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	7.53E-4	2.52E-6	4.25E-5	7.98E-4	5.50E-7	2.24E-5	3.72E-7	-4.50E-4	3.72E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.30E-7	5.69E-8	8.39E-8	4.71E-7	1.24E-8	4.45E-8	3.56E-10	-1.95E-7	3.33E-7
NHWD	kg	5.34E-3	1.37E-3	3.96E-4	7.10E-3	3.01E-4	1.73E-3	1.30E-3	-8.30E-4	9.60E-3
RWD	kg	1.12E-6	1.54E-7	6.34E-8	1.33E-6	3.30E-8	1.17E-7	1.97E-9	-3.76E-7	1.11E-6
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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