Environmental Profile

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

Ecochain v3.5.71

Product:	3029614 - Hep20 Elbow 90° Spigot Red W 15x10 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	1.07E-1	1.74E-3	9.13E-3	1.18E-1	4.22E-4	1.63E-2	1.94E-4	-5.41E-2	8.11E-2
GWP-f	kg CO2 eq	1.07E-1	1.74E-3	8.62E-3	1.18E-1	4.22E-4	1.63E-2	1.94E-4	-5.40E-2	8.06E-2
GWP-b	kg CO2 eq	2.01E-4	9.99E-7	5.01E-4	7.02E-4	2.56E-7	-1.53E-5	1.95E-7	-1.27E-4	5.61E-4
GWP-luluc	kg CO2 eq	7.95E-6	6.33E-7	5.10E-6	1.37E-5	1.49E-7	2.37E-6	3.79E-9	-3.86E-7	1.58E-5
ODP	kg CFC11 eq	1.90E-9	3.98E-10	8.44E-10	3.15E-9	9.72E-11	3.44E-10	5.31E-12	-7.09E-10	2.88E-9
AP	mol H+ eq	5.40E-4	1.17E-5	2.90E-5	5.81E-4	2.40E-6	1.38E-5	1.32E-7	-2.12E-4	3.85E-4
EP-fw	kg P eq	1.17E-6	1.40E-8	7.77E-8	1.26E-6	3.47E-9	6.96E-8	1.74E-10	-3.80E-7	9.55E-7
EP-m	kg N eq	8.93E-5	3.96E-6	5.26E-6	9.85E-5	8.60E-7	4.15E-6	2.49E-7	-4.01E-5	6.36E-5
EP-T	mol N eq	9.22E-4	4.36E-5	5.47E-5	1.02E-3	9.47E-6	4.54E-5	5.24E-7	-4.10E-4	6.66E-4
POCP	kg NMVOC eq	3.76E-4	1.23E-5	1.73E-5	4.06E-4	2.71E-6	1.39E-5	1.91E-7	-1.68E-4	2.55E-4
ADP-mm	kg Sb eq	2.98E-6	4.37E-8	1.44E-7	3.16E-6	1.09E-8	5.09E-8	1.29E-10	-2.87E-7	2.94E-6
ADP-f	MJ	1.67E+0	2.65E-2	1.15E-1	1.81E+0	6.48E-3	4.06E-2	3.91E-4	-8.21E-1	1.03E+0
WDP	m3 depriv.	3.14E-2	7.98E-5	1.43E-3	3.29E-2	1.99E-5	8.95E-4	1.81E-6	-1.15E-2	2.23E-2
PM	disease inc.	4.57E-9	1.53E-10	2.13E-10	4.93E-9	3.81E-11	2.09E-10	2.66E-12	-1.89E-9	3.29E-9
IR	kBq U-235 eq	7.18E-4	1.16E-4	1.14E-4	9.47E-4	2.83E-5	1.23E-4	1.89E-6	-5.03E-5	1.05E-3
ETP-fw	CTUe	3.21E-1	2.14E-2	1.62E-1	5.04E-1	5.26E-3	6.98E-2	8.24E-4	-3.94E-2	5.41E-1
HTP-c	CTUh	2.52E-11	7.76E-13	6.54E-12	3.25E-11	1.87E-13	5.59E-12	1.03E-14	-4.19E-12	3.41E-11
HTP-nc	CTUh	3.98E-10	2.52E-11	1.43E-10	5.66E-10	6.27E-12	7.46E-11	3.32E-13	-9.07E-11	5.57E-10
SQP	Pt	8.66E-2	2.20E-2	2.14E-2	1.30E-1	5.54E-3	3.16E-2	9.92E-4	-4.60E-3	1.64E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.99E-2	3.73E-4	3.53E-1	3.74E-1	9.29E-5	2.05E-3	1.80E-5	-3.90E-3	3.72E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.99E-2	3.73E-4	3.53E-1	3.74E-1	9.29E-5	2.05E-3	1.80E-5	-3.90E-3	3.72E-1
PENRE	MJ	1.79E+0	2.81E-2	1.26E-1	1.95E+0	6.87E-3	4.32E-2	4.14E-4	-8.89E-1	1.11E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.79E+0	2.81E-2	1.26E-1	1.95E+0	6.87E-3	4.32E-2	4.14E-4	-8.89E-1	1.11E+0
PET	MJ	1.81E+0	2.85E-2	4.79E-1	2.32E+0	6.97E-3	4.53E-2	4.32E-4	-8.92E-1	1.48E+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	7.52E-4	2.94E-6	4.52E-5	8.00E-4	7.33E-7	3.11E-5	4.86E-7	-2.69E-4	5.63E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.29E-7	6.63E-8	9.79E-8	3.93E-7	1.66E-8	7.03E-8	4.66E-10	-1.30E-7	3.50E-7
NHWD	kg	5.34E-3	1.59E-3	4.60E-4	7.39E-3	4.01E-4	2.05E-3	1.70E-3	-4.86E-4	1.11E-2
RWD	kg	8.98E-7	1.80E-7	7.40E-8	1.15E-6	4.40E-8	1.54E-7	2.58E-9	-6.72E-8	1.29E-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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