Environmental Profile

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

Ecochain v3.5.80

Product:	3003127 - Wadal PVC Bend 88° GY 40 S/S
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

With Wadal you opt for a tensile-resistant system whose connections cannot slide apart. There is a solution for every indoor drainage situation, thanks to the very extensive range of PVC adhesive fittings and pipes. KOMO certified.

LCA standard:	EN15804+A2 (2019)
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

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 - PL -Buk - Extra products (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	1.41E-1	1.98E-3	1.45E-4	1.43E-1	1.87E-3	1.00E-1	5.98E-4	-9.01E-2	1.56E-1
GWP-f	kg CO2 eq	1.73E-1	1.97E-3	1.46E-4	1.75E-1	1.86E-3	6.50E-2	5.98E-4	-9.36E-2	1.49E-1
GWP-b	kg CO2 eq	-3.19E-2	1.20E-6	-1.54E-6	-3.19E-2	1.13E-6	3.51E-2	7.45E-7	3.61E-3	6.77E-3
GWP-luluc	kg CO2 eq	1.83E-4	6.98E-7	1.49E-7	1.84E-4	6.60E-7	2.34E-5	1.60E-8	-9.68E-5	1.11E-4
ODP	kg CFC11 eq	8.03E-8	4.55E-10	8.26E-12	8.08E-8	4.30E-10	6.44E-9	2.21E-11	-4.17E-8	4.59E-8
AP	mol H+ eq	8.34E-4	1.12E-5	1.47E-6	8.46E-4	1.06E-5	1.12E-4	5.40E-7	-3.57E-4	6.12E-4
EP-fw	kg P eq	7.83E-6	1.62E-8	8.24E-9	7.85E-6	1.53E-8	7.81E-7	7.17E-10	-3.53E-6	5.12E-6
EP-m	kg N eq	1.48E-4	4.02E-6	1.55E-7	1.52E-4	3.80E-6	2.77E-5	3.30E-7	-6.66E-5	1.17E-4
EP-T	mol N eq	1.62E-3	4.43E-5	1.85E-6	1.67E-3	4.19E-5	3.05E-4	2.15E-6	-7.22E-4	1.30E-3
POCP	kg NMVOC eq	5.44E-4	1.27E-5	6.28E-7	5.57E-4	1.20E-5	9.10E-5	7.41E-7	-2.47E-4	4.14E-4
ADP-mm	kg Sb eq	1.49E-4	5.11E-8	1.97E-8	1.49E-4	4.82E-8	4.35E-7	5.45E-10	-1.74E-6	1.48E-4
ADP-f	MJ	4.18E+0	3.03E-2	1.36E-3	4.21E+0	2.86E-2	2.99E-1	1.62E-3	-2.18E+0	2.36E+0
WDP	m3 depriv.	2.53E-1	9.30E-5	5.22E-5	2.53E-1	8.79E-5	1.17E-2	1.20E-5	-1.23E-1	1.42E-1
PM	disease inc.	6.13E-9	1.78E-10	9.08E-12	6.31E-9	1.68E-10	1.38E-9	1.11E-11	-2.92E-9	4.95E-9
IR	kBq U-235 eq	9.01E-3	1.32E-4	1.02E-6	9.14E-3	1.25E-4	1.06E-3	7.40E-6	-4.22E-3	6.11E-3
ETP-fw	CTUe	4.72E+0	2.46E-2	1.21E-2	4.76E+0	2.32E-2	2.28E+0	2.52E-2	-1.56E+0	5.53E+0
HTP-c	CTUh	1.52E-10	8.75E-13	6.17E-13	1.53E-10	8.27E-13	3.57E-11	4.57E-14	-5.71E-11	1.33E-10
HTP-nc	CTUh	4.50E-9	2.93E-11	1.57E-11	4.54E-9	2.77E-11	8.10E-10	4.85E-12	-1.65E-9	3.73E-9
SQP	Pt	3.54E+0	2.59E-2	2.24E-3	3.57E+0	2.45E-2	1.84E-1	4.13E-3	-3.29E+0	4.90E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.83E-1	4.35E-4	2.40E-2	1.01E+0	4.11E-4	2.14E-2	5.95E-5	-5.70E-1	4.60E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.83E-1	4.35E-4	2.40E-2	1.01E+0	4.11E-4	2.14E-2	5.95E-5	-5.70E-1	4.60E-1
PENRE	MJ	4.48E+0	3.22E-2	1.44E-3	4.51E+0	3.04E-2	3.18E-1	1.72E-3	-2.35E+0	2.51E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.48E+0	3.22E-2	1.44E-3	4.51E+0	3.04E-2	3.18E-1	1.72E-3	-2.35E+0	2.51E+0
PET	MJ	5.46E+0	3.26E-2	2.55E-2	5.52E+0	3.08E-2	3.39E-1	1.78E-3	-2.92E+0	2.97E+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	3.04E-3	3.43E-6	1.46E-6	3.05E-3	3.24E-6	3.23E-4	1.97E-6	-1.40E-3	1.97E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.16E-5	7.75E-8	2.73E-13	2.17E-5	7.32E-8	4.92E-7	1.98E-9	-1.99E-6	2.03E-5
NHWD	kg	1.83E-2	1.88E-3	1.05E-6	2.02E-2	1.77E-3	1.15E-2	7.09E-3	-7.80E-3	3.27E-2
RWD	kg	7.94E-6	2.06E-7	1.10E-13	8.15E-6	1.95E-7	1.14E-6	1.05E-8	-3.82E-6	5.67E-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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