Environmental Profile

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

Ecochain v3.5.80

Product:	3003116 - Wadal PVC Bend 45° GY 90 S/SP
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	5.48E-1	7.78E-3	1.45E-4	5.56E-1	7.19E-3	3.35E-1	2.28E-3	-3.15E-1	5.86E-1
GWP-f	kg CO2 eq	6.41E-1	7.78E-3	1.46E-4	6.49E-1	7.18E-3	2.20E-1	2.28E-3	-3.47E-1	5.31E-1
GWP-b	kg CO2 eq	-9.34E-2	4.72E-6	-1.54E-6	-9.34E-2	4.36E-6	1.15E-1	2.88E-6	3.29E-2	5.46E-2
GWP-luluc	kg CO2 eq	7.61E-4	2.75E-6	1.49E-7	7.64E-4	2.54E-6	9.13E-5	6.00E-8	-4.90E-4	3.67E-4
ODP	kg CFC11 eq	3.15E-7	1.79E-9	8.26E-12	3.17E-7	1.66E-9	2.54E-8	8.51E-11	-1.60E-7	1.85E-7
AP	mol H+ eq	3.08E-3	4.43E-5	1.47E-6	3.12E-3	4.09E-5	4.37E-4	2.07E-6	-1.42E-3	2.18E-3
EP-fw	kg P eq	3.00E-5	6.40E-8	8.24E-9	3.00E-5	5.91E-8	3.06E-6	2.71E-9	-1.50E-5	1.82E-5
EP-m	kg N eq	5.61E-4	1.59E-5	1.55E-7	5.77E-4	1.46E-5	1.08E-4	1.28E-6	-2.65E-4	4.36E-4
EP-T	mol N eq	6.06E-3	1.75E-4	1.85E-6	6.24E-3	1.61E-4	1.19E-3	8.25E-6	-2.88E-3	4.72E-3
POCP	kg NMVOC eq	1.97E-3	4.99E-5	6.28E-7	2.02E-3	4.61E-5	3.56E-4	2.84E-6	-9.61E-4	1.47E-3
ADP-mm	kg Sb eq	5.46E-4	2.01E-7	1.97E-8	5.46E-4	1.86E-7	1.72E-6	2.08E-9	-6.75E-6	5.41E-4
ADP-f	MJ	1.54E+1	1.19E-1	1.36E-3	1.55E+1	1.10E-1	1.17E+0	6.21E-3	-8.15E+0	8.67E+0
WDP	m3 depriv.	9.63E-1	3.66E-4	5.22E-5	9.63E-1	3.38E-4	4.58E-2	4.07E-5	-4.98E-1	5.12E-1
PM	disease inc.	2.28E-8	7.02E-10	9.08E-12	2.35E-8	6.48E-10	5.40E-9	4.28E-11	-1.25E-8	1.71E-8
IR	kBq U-235 eq	3.45E-2	5.22E-4	1.02E-6	3.50E-2	4.82E-4	4.16E-3	2.86E-5	-1.71E-2	2.25E-2
ETP-fw	CTUe	1.97E+1	9.70E-2	1.21E-2	1.98E+1	8.95E-2	9.00E+0	9.90E-2	-7.31E+0	2.17E+1
HTP-c	CTUh	5.68E-10	3.45E-12	6.17E-13	5.72E-10	3.19E-12	1.33E-10	1.72E-13	-2.19E-10	4.89E-10
HTP-nc	CTUh	1.72E-8	1.16E-10	1.57E-11	1.73E-8	1.07E-10	3.14E-9	1.90E-11	-6.63E-9	1.39E-8
SQP	Pt	1.19E+1	1.02E-1	2.24E-3	1.20E+1	9.43E-2	7.14E-1	1.59E-2	-1.41E+1	-1.27E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	3.78E+0	1.71E-3	2.40E-2	3.81E+0	1.58E-3	8.39E-2	2.32E-4	-2.51E+0	1.38E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	3.78E+0	1.71E-3	2.40E-2	3.81E+0	1.58E-3	8.39E-2	2.32E-4	-2.51E+0	1.38E+0
PENRE	MJ	1.65E+1	1.27E-1	1.44E-3	1.67E+1	1.17E-1	1.24E+0	6.59E-3	-8.78E+0	9.25E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.65E+1	1.27E-1	1.44E-3	1.67E+1	1.17E-1	1.24E+0	6.59E-3	-8.78E+0	9.25E+0
PET	MJ	2.03E+1	1.28E-1	2.55E-2	2.05E+1	1.19E-1	1.33E+0	6.83E-3	-1.13E+1	1.06E+1
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	1.12E-2	1.35E-5	1.46E-6	1.12E-2	1.25E-5	1.26E-3	7.61E-6	-6.06E-3	6.45E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	7.99E-5	3.05E-7	2.73E-13	8.02E-5	2.82E-7	1.93E-6	7.57E-9	-7.35E-6	7.51E-5
NHWD	kg	6.86E-2	7.40E-3	1.05E-6	7.60E-2	6.83E-3	4.32E-2	2.73E-2	-3.03E-2	1.23E-1
RWD	kg	3.05E-5	8.12E-7	1.10E-13	3.13E-5	7.50E-7	4.48E-6	4.04E-8	-1.55E-5	2.11E-5
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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