Environmental Profile

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

Ecochain v3.5.80

Product:	3080475 - Wadal PVC Bend 88° WT 32 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	7.98E-2	1.31E-4	1.45E-4	8.01E-2	1.10E-3	7.86E-2	3.46E-4	-5.85E-2	1.02E-1
GWP-f	kg CO2 eq	1.12E-1	1.31E-4	1.46E-4	1.13E-1	1.10E-3	4.39E-2	3.46E-4	-6.14E-2	9.67E-2
GWP-b	kg CO2 eq	-3.27E-2	7.94E-8	-1.54E-6	-3.27E-2	6.69E-7	3.47E-2	4.44E-7	2.92E-3	4.91E-3
GWP-luluc	kg CO2 eq	1.15E-4	4.63E-8	1.49E-7	1.16E-4	3.90E-7	1.43E-5	8.89E-9	-6.91E-5	6.11E-5
ODP	kg CFC11 eq	5.01E-8	3.01E-11	8.26E-12	5.01E-8	2.54E-10	4.00E-9	1.30E-11	-2.53E-8	2.91E-8
AP	mol H+ eq	5.18E-4	7.45E-7	1.47E-6	5.20E-4	6.28E-6	6.94E-5	3.16E-7	-2.31E-4	3.65E-4
EP-fw	kg P eq	4.76E-6	1.08E-9	8.24E-9	4.77E-6	9.06E-9	4.80E-7	4.06E-10	-2.25E-6	3.00E-6
EP-m	kg N eq	9.33E-5	2.66E-7	1.55E-7	9.37E-5	2.25E-6	1.74E-5	1.99E-7	-4.45E-5	6.90E-5
EP-T	mol N eq	1.01E-3	2.94E-6	1.85E-6	1.01E-3	2.47E-5	1.92E-4	1.26E-6	-4.87E-4	7.44E-4
POCP	kg NMVOC eq	3.57E-4	8.39E-7	6.28E-7	3.58E-4	7.07E-6	5.71E-5	4.34E-7	-1.67E-4	2.56E-4
ADP-mm	kg Sb eq	2.94E-6	3.38E-9	1.97E-8	2.96E-6	2.85E-8	2.68E-7	3.14E-10	-1.07E-6	2.19E-6
ADP-f	MJ	2.75E+0	2.01E-3	1.36E-3	2.75E+0	1.69E-2	1.83E-1	9.51E-4	-1.39E+0	1.56E+0
WDP	m3 depriv.	1.58E-1	6.16E-6	5.22E-5	1.58E-1	5.19E-5	7.19E-3	5.16E-6	-7.45E-2	9.06E-2
PM	disease inc.	4.18E-9	1.18E-11	9.08E-12	4.20E-9	9.94E-11	8.49E-10	6.54E-12	-2.07E-9	3.08E-9
IR	kBq U-235 eq	5.49E-3	8.77E-6	1.02E-6	5.50E-3	7.39E-5	6.52E-4	4.39E-6	-2.65E-3	3.59E-3
ETP-fw	CTUe	2.29E+0	1.63E-3	1.21E-2	2.31E+0	1.37E-2	1.42E+0	1.56E-2	-1.05E+0	2.70E+0
HTP-c	CTUh	8.56E-11	5.80E-14	6.17E-13	8.62E-11	4.89E-13	2.12E-11	2.56E-14	-3.94E-11	6.86E-11
HTP-nc	CTUh	2.33E-9	1.94E-12	1.57E-11	2.35E-9	1.64E-11	5.00E-10	2.97E-12	-9.87E-10	1.88E-9
SQP	Pt	3.27E+0	1.72E-3	2.24E-3	3.28E+0	1.45E-2	1.12E-1	2.44E-3	-3.04E+0	3.60E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.59E-1	2.88E-5	2.40E-2	7.83E-1	2.43E-4	1.32E-2	3.60E-5	-5.06E-1	2.91E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.59E-1	2.88E-5	2.40E-2	7.83E-1	2.43E-4	1.32E-2	3.60E-5	-5.06E-1	2.91E-1
PENRE	MJ	2.95E+0	2.13E-3	1.44E-3	2.95E+0	1.80E-2	1.95E-1	1.01E-3	-1.50E+0	1.66E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.95E+0	2.13E-3	1.44E-3	2.95E+0	1.80E-2	1.95E-1	1.01E-3	-1.50E+0	1.66E+0
PET	MJ	3.71E+0	2.16E-3	2.55E-2	3.73E+0	1.82E-2	2.08E-1	1.04E-3	-2.01E+0	1.95E+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	1.88E-3	2.27E-7	1.46E-6	1.88E-3	1.91E-6	1.99E-4	1.17E-6	-8.81E-4	1.20E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.18E-6	5.13E-9	2.73E-13	2.19E-6	4.32E-8	3.03E-7	1.15E-9	-1.36E-6	1.18E-6
NHWD	kg	1.19E-2	1.24E-4	1.05E-6	1.20E-2	1.05E-3	7.19E-3	4.19E-3	-5.25E-3	1.92E-2
RWD	kg	4.93E-6	1.36E-8	1.10E-13	4.95E-6	1.15E-7	7.03E-7	6.20E-9	-2.43E-6	3.34E-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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