Environmental Profile

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

Ecochain v3.5.80

Product:	3080519 - Wadal PVC Bend 45° WT 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	8.64E-2	1.43E-4	1.45E-4	8.67E-2	1.18E-3	8.13E-2	3.70E-4	-6.12E-2	1.08E-1
GWP-f	kg CO2 eq	1.19E-1	1.43E-4	1.46E-4	1.19E-1	1.18E-3	4.62E-2	3.70E-4	-6.50E-2	1.02E-1
GWP-b	kg CO2 eq	-3.26E-2	8.70E-8	-1.54E-6	-3.26E-2	7.17E-7	3.51E-2	4.76E-7	3.89E-3	6.40E-3
GWP-luluc	kg CO2 eq	1.25E-4	5.07E-8	1.49E-7	1.25E-4	4.18E-7	1.53E-5	9.51E-9	-7.85E-5	6.27E-5
ODP	kg CFC11 eq	5.37E-8	3.30E-11	8.26E-12	5.37E-8	2.72E-10	4.29E-9	1.40E-11	-2.71E-8	3.12E-8
AP	mol H+ eq	5.46E-4	8.17E-7	1.47E-6	5.49E-4	6.72E-6	7.44E-5	3.38E-7	-2.47E-4	3.83E-4
EP-fw	kg P eq	5.05E-6	1.18E-9	8.24E-9	5.06E-6	9.71E-9	5.14E-7	4.35E-10	-2.46E-6	3.13E-6
EP-m	kg N eq	9.89E-5	2.92E-7	1.55E-7	9.93E-5	2.41E-6	1.87E-5	2.13E-7	-4.77E-5	7.29E-5
EP-T	mol N eq	1.07E-3	3.22E-6	1.85E-6	1.07E-3	2.65E-5	2.06E-4	1.35E-6	-5.21E-4	7.84E-4
POCP	kg NMVOC eq	3.74E-4	9.20E-7	6.28E-7	3.76E-4	7.58E-6	6.12E-5	4.65E-7	-1.77E-4	2.68E-4
ADP-mm	kg Sb eq	3.09E-6	3.71E-9	1.97E-8	3.11E-6	3.05E-8	2.88E-7	3.36E-10	-1.14E-6	2.29E-6
ADP-f	MJ	2.91E+0	2.20E-3	1.36E-3	2.92E+0	1.81E-2	1.96E-1	1.02E-3	-1.48E+0	1.65E+0
WDP	m3 depriv.	1.68E-1	6.75E-6	5.22E-5	1.68E-1	5.56E-5	7.72E-3	5.47E-6	-8.08E-2	9.55E-2
PM	disease inc.	4.37E-9	1.29E-11	9.08E-12	4.40E-9	1.07E-10	9.11E-10	7.01E-12	-2.23E-9	3.19E-9
IR	kBq U-235 eq	5.86E-3	9.62E-6	1.02E-6	5.87E-3	7.92E-5	7.00E-4	4.70E-6	-2.87E-3	3.78E-3
ETP-fw	CTUe	2.49E+0	1.79E-3	1.21E-2	2.50E+0	1.47E-2	1.52E+0	1.67E-2	-1.16E+0	2.90E+0
HTP-c	CTUh	8.50E-11	6.36E-14	6.17E-13	8.57E-11	5.24E-13	2.27E-11	2.74E-14	-4.17E-11	6.72E-11
HTP-nc	CTUh	2.42E-9	2.13E-12	1.57E-11	2.44E-9	1.75E-11	5.35E-10	3.19E-12	-1.12E-9	1.88E-9
SQP	Pt	3.33E+0	1.88E-3	2.24E-3	3.33E+0	1.55E-2	1.20E-1	2.62E-3	-3.23E+0	2.38E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	7.73E-1	3.16E-5	2.40E-2	7.97E-1	2.60E-4	1.41E-2	3.86E-5	-5.42E-1	2.69E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	7.73E-1	3.16E-5	2.40E-2	7.97E-1	2.60E-4	1.41E-2	3.86E-5	-5.42E-1	2.69E-1
PENRE	MJ	3.12E+0	2.34E-3	1.44E-3	3.13E+0	1.92E-2	2.09E-1	1.08E-3	-1.60E+0	1.76E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.12E+0	2.34E-3	1.44E-3	3.13E+0	1.92E-2	2.09E-1	1.08E-3	-1.60E+0	1.76E+0
PET	MJ	3.90E+0	2.37E-3	2.55E-2	3.92E+0	1.95E-2	2.23E-1	1.12E-3	-2.14E+0	2.03E+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	2.00E-3	2.49E-7	1.46E-6	2.00E-3	2.05E-6	2.14E-4	1.25E-6	-9.68E-4	1.25E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.30E-6	5.63E-9	2.73E-13	2.30E-6	4.63E-8	3.25E-7	1.23E-9	-1.41E-6	1.26E-6
NHWD	kg	1.24E-2	1.36E-4	1.05E-6	1.26E-2	1.12E-3	7.66E-3	4.49E-3	-5.57E-3	2.03E-2
RWD	kg	5.26E-6	1.50E-8	1.10E-13	5.27E-6	1.23E-7	7.54E-7	6.64E-9	-2.63E-6	3.53E-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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