Environmental Profile

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

Ecochain v3.5.80

Product:	3003156 - Wadal PVC Branch 88° GY 90 S/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	8.55E-1	1.26E-2	1.45E-4	8.68E-1	1.14E-2	5.34E-1	3.63E-3	-5.06E-1	9.11E-1
GWP-f	kg CO2 eq	1.01E+0	1.26E-2	1.46E-4	1.02E+0	1.14E-2	3.48E-1	3.63E-3	-5.47E-1	8.39E-1
GWP-b	kg CO2 eq	-1.56E-1	7.64E-6	-1.54E-6	-1.56E-1	6.93E-6	1.86E-1	4.58E-6	4.14E-2	7.11E-2
GWP-luluc	kg CO2 eq	1.16E-3	4.45E-6	1.49E-7	1.16E-3	4.04E-6	1.45E-4	9.55E-8	-7.08E-4	6.02E-4
ODP	kg CFC11 eq	5.00E-7	2.90E-9	8.26E-12	5.03E-7	2.63E-9	4.02E-8	1.35E-10	-2.53E-7	2.93E-7
AP	mol H+ eq	4.85E-3	7.17E-5	1.47E-6	4.93E-3	6.51E-5	6.89E-4	3.29E-6	-2.22E-3	3.47E-3
EP-fw	kg P eq	4.71E-5	1.04E-7	8.24E-9	4.72E-5	9.40E-8	4.85E-6	4.32E-9	-2.30E-5	2.92E-5
EP-m	kg N eq	8.77E-4	2.56E-5	1.55E-7	9.03E-4	2.33E-5	1.70E-4	2.04E-6	-4.11E-4	6.87E-4
EP-T	mol N eq	9.51E-3	2.83E-4	1.85E-6	9.80E-3	2.57E-4	1.88E-3	1.31E-5	-4.47E-3	7.48E-3
POCP	kg NMVOC eq	3.11E-3	8.08E-5	6.28E-7	3.19E-3	7.33E-5	5.60E-4	4.52E-6	-1.50E-3	2.33E-3
ADP-mm	kg Sb eq	8.93E-4	3.26E-7	1.97E-8	8.93E-4	2.95E-7	2.71E-6	3.30E-9	-1.07E-5	8.85E-4
ADP-f	MJ	2.44E+1	1.93E-1	1.36E-3	2.45E+1	1.75E-1	1.85E+0	9.88E-3	-1.29E+1	1.37E+1
WDP	m3 depriv.	1.53E+0	5.93E-4	5.22E-5	1.53E+0	5.38E-4	7.27E-2	6.52E-5	-7.76E-1	8.25E-1
PM	disease inc.	3.56E-8	1.14E-9	9.08E-12	3.67E-8	1.03E-9	8.51E-9	6.80E-11	-1.89E-8	2.74E-8
IR	kBq U-235 eq	5.44E-2	8.44E-4	1.02E-6	5.53E-2	7.66E-4	6.56E-3	4.54E-5	-2.66E-2	3.60E-2
ETP-fw	CTUe	3.02E+1	1.57E-1	1.21E-2	3.04E+1	1.42E-1	1.43E+1	1.57E-1	-1.08E+1	3.41E+1
HTP-c	CTUh	9.08E-10	5.58E-12	6.17E-13	9.15E-10	5.07E-12	2.10E-10	2.74E-13	-3.45E-10	7.85E-10
HTP-nc	CTUh	2.74E-8	1.87E-10	1.57E-11	2.76E-8	1.70E-10	4.98E-9	3.02E-11	-1.03E-8	2.24E-8
SQP	Pt	1.91E+1	1.65E-1	2.24E-3	1.93E+1	1.50E-1	1.13E+0	2.53E-2	-2.10E+1	-4.01E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.12E+0	2.77E-3	2.40E-2	6.15E+0	2.51E-3	1.33E-1	3.68E-4	-3.72E+0	2.56E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.12E+0	2.77E-3	2.40E-2	6.15E+0	2.51E-3	1.33E-1	3.68E-4	-3.72E+0	2.56E+0
PENRE	MJ	2.61E+1	2.05E-1	1.44E-3	2.63E+1	1.86E-1	1.97E+0	1.05E-2	-1.39E+1	1.46E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.61E+1	2.05E-1	1.44E-3	2.63E+1	1.86E-1	1.97E+0	1.05E-2	-1.39E+1	1.46E+1
PET	MJ	3.22E+1	2.08E-1	2.55E-2	3.25E+1	1.89E-1	2.10E+0	1.09E-2	-1.76E+1	1.72E+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	1.77E-2	2.19E-5	1.46E-6	1.77E-2	1.98E-5	2.00E-3	1.21E-5	-9.23E-3	1.05E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.30E-4	4.94E-7	2.73E-13	1.30E-4	4.48E-7	3.04E-6	1.20E-8	-1.16E-5	1.22E-4
NHWD	kg	1.08E-1	1.20E-2	1.05E-6	1.20E-1	1.09E-2	6.82E-2	4.34E-2	-4.76E-2	1.95E-1
RWD	kg	4.81E-5	1.31E-6	1.10E-13	4.94E-5	1.19E-6	7.06E-6	6.43E-8	-2.40E-5	3.37E-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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