Environmental Profile

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

Ecochain v3.5.80

Product:	3003158 - Wadal PVC Branch 88° GY 32 S/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	1.18E-1	1.70E-3	1.45E-4	1.20E-1	1.58E-3	9.21E-2	5.08E-4	-7.77E-2	1.37E-1
GWP-f	kg CO2 eq	1.50E-1	1.70E-3	1.46E-4	1.52E-1	1.58E-3	5.70E-2	5.08E-4	-8.13E-2	1.30E-1
GWP-b	kg CO2 eq	-3.22E-2	1.03E-6	-1.54E-6	-3.22E-2	9.57E-7	3.51E-2	6.28E-7	3.69E-3	6.64E-3
GWP-luluc	kg CO2 eq	1.65E-4	6.01E-7	1.49E-7	1.66E-4	5.58E-7	1.96E-5	1.37E-8	-8.88E-5	9.73E-5
ODP	kg CFC11 eq	6.74E-8	3.91E-10	8.26E-12	6.78E-8	3.63E-10	5.41E-9	1.87E-11	-3.55E-8	3.81E-8
AP	mol H+ eq	7.31E-4	9.67E-6	1.47E-6	7.42E-4	8.97E-6	9.45E-5	4.57E-7	-3.10E-4	5.36E-4
EP-fw	kg P eq	6.83E-6	1.40E-8	8.24E-9	6.85E-6	1.30E-8	6.56E-7	6.13E-10	-3.07E-6	4.45E-6
EP-m	kg N eq	1.31E-4	3.46E-6	1.55E-7	1.35E-4	3.21E-6	2.36E-5	2.78E-7	-5.85E-5	1.03E-4
EP-T	mol N eq	1.44E-3	3.81E-5	1.85E-6	1.48E-3	3.54E-5	2.60E-4	1.82E-6	-6.36E-4	1.14E-3
POCP	kg NMVOC eq	4.81E-4	1.09E-5	6.28E-7	4.93E-4	1.01E-5	7.76E-5	6.27E-7	-2.17E-4	3.64E-4
ADP-mm	kg Sb eq	1.48E-4	4.39E-8	1.97E-8	1.48E-4	4.08E-8	3.67E-7	4.63E-10	-1.49E-6	1.47E-4
ADP-f	MJ	3.60E+0	2.61E-2	1.36E-3	3.63E+0	2.42E-2	2.53E-1	1.37E-3	-1.88E+0	2.03E+0
WDP	m3 depriv.	2.15E-1	7.99E-5	5.22E-5	2.15E-1	7.42E-5	9.80E-3	1.09E-5	-1.05E-1	1.20E-1
PM	disease inc.	5.46E-9	1.53E-10	9.08E-12	5.62E-9	1.42E-10	1.17E-9	9.42E-12	-2.63E-9	4.32E-9
IR	kBq U-235 eq	7.78E-3	1.14E-4	1.02E-6	7.90E-3	1.06E-4	8.94E-4	6.25E-6	-3.65E-3	5.26E-3
ETP-fw	CTUe	4.33E+0	2.12E-2	1.21E-2	4.36E+0	1.96E-2	1.91E+0	2.10E-2	-1.39E+0	4.92E+0
HTP-c	CTUh	1.36E-10	7.53E-13	6.17E-13	1.37E-10	6.99E-13	3.10E-11	3.92E-14	-5.05E-11	1.18E-10
HTP-nc	CTUh	3.97E-9	2.52E-11	1.57E-11	4.01E-9	2.34E-11	6.84E-10	4.05E-12	-1.42E-9	3.30E-9
SQP	Pt	3.47E+0	2.23E-2	2.24E-3	3.49E+0	2.07E-2	1.56E-1	3.49E-3	-3.26E+0	4.09E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.96E-1	3.74E-4	2.40E-2	9.20E-1	3.47E-4	1.80E-2	4.99E-5	-5.57E-1	3.82E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.96E-1	3.74E-4	2.40E-2	9.20E-1	3.47E-4	1.80E-2	4.99E-5	-5.57E-1	3.82E-1
PENRE	MJ	3.86E+0	2.77E-2	1.44E-3	3.89E+0	2.57E-2	2.69E-1	1.45E-3	-2.03E+0	2.16E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.86E+0	2.77E-2	1.44E-3	3.89E+0	2.57E-2	2.69E-1	1.45E-3	-2.03E+0	2.16E+0
PET	MJ	4.76E+0	2.80E-2	2.55E-2	4.81E+0	2.60E-2	2.87E-1	1.50E-3	-2.58E+0	2.54E+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	2.64E-3	2.95E-6	1.46E-6	2.65E-3	2.74E-6	2.71E-4	1.67E-6	-1.22E-3	1.70E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.12E-5	6.66E-8	2.73E-13	2.12E-5	6.18E-8	4.18E-7	1.68E-9	-1.74E-6	2.00E-5
NHWD	kg	1.61E-2	1.61E-3	1.05E-6	1.77E-2	1.50E-3	9.82E-3	5.99E-3	-6.85E-3	2.82E-2
RWD	kg	6.87E-6	1.77E-7	1.10E-13	7.04E-6	1.64E-7	9.65E-7	8.87E-9	-3.31E-6	4.87E-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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