Environmental Profile

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

Ecochain v3.5.80

Product:	3003157 - Wadal PVC Branch 45° 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	1.39E-1	1.95E-3	1.45E-4	1.41E-1	1.84E-3	9.94E-2	5.90E-4	-8.90E-2	1.54E-1
GWP-f	kg CO2 eq	1.71E-1	1.95E-3	1.46E-4	1.73E-1	1.84E-3	6.43E-2	5.90E-4	-9.25E-2	1.47E-1
GWP-b	kg CO2 eq	-3.19E-2	1.18E-6	-1.54E-6	-3.19E-2	1.12E-6	3.51E-2	7.34E-7	3.62E-3	6.76E-3
GWP-luluc	kg CO2 eq	1.81E-4	6.89E-7	1.49E-7	1.82E-4	6.51E-7	2.30E-5	1.58E-8	-9.61E-5	1.10E-4
ODP	kg CFC11 eq	7.91E-8	4.48E-10	8.26E-12	7.96E-8	4.24E-10	6.35E-9	2.18E-11	-4.12E-8	4.52E-8
AP	mol H+ eq	8.24E-4	1.11E-5	1.47E-6	8.37E-4	1.05E-5	1.10E-4	5.32E-7	-3.53E-4	6.05E-4
EP-fw	kg P eq	7.74E-6	1.60E-8	8.24E-9	7.76E-6	1.51E-8	7.70E-7	7.08E-10	-3.49E-6	5.06E-6
EP-m	kg N eq	1.46E-4	3.97E-6	1.55E-7	1.51E-4	3.75E-6	2.73E-5	3.26E-7	-6.58E-5	1.16E-4
EP-T	mol N eq	1.61E-3	4.37E-5	1.85E-6	1.65E-3	4.13E-5	3.01E-4	2.12E-6	-7.14E-4	1.28E-3
POCP	kg NMVOC eq	5.38E-4	1.25E-5	6.28E-7	5.52E-4	1.18E-5	8.98E-5	7.30E-7	-2.44E-4	4.10E-4
ADP-mm	kg Sb eq	1.49E-4	5.03E-8	1.97E-8	1.49E-4	4.76E-8	4.28E-7	5.38E-10	-1.72E-6	1.48E-4
ADP-f	MJ	4.13E+0	2.99E-2	1.36E-3	4.16E+0	2.82E-2	2.95E-1	1.59E-3	-2.15E+0	2.33E+0
WDP	m3 depriv.	2.50E-1	9.17E-5	5.22E-5	2.50E-1	8.66E-5	1.15E-2	1.19E-5	-1.21E-1	1.40E-1
PM	disease inc.	6.07E-9	1.76E-10	9.08E-12	6.25E-9	1.66E-10	1.36E-9	1.10E-11	-2.90E-9	4.89E-9
IR	kBq U-235 eq	8.90E-3	1.31E-4	1.02E-6	9.03E-3	1.23E-4	1.04E-3	7.30E-6	-4.17E-3	6.03E-3
ETP-fw	CTUe	4.69E+0	2.43E-2	1.21E-2	4.73E+0	2.29E-2	2.25E+0	2.48E-2	-1.55E+0	5.48E+0
HTP-c	CTUh	1.50E-10	8.63E-13	6.17E-13	1.52E-10	8.16E-13	3.53E-11	4.51E-14	-5.65E-11	1.31E-10
HTP-nc	CTUh	4.45E-9	2.89E-11	1.57E-11	4.50E-9	2.73E-11	7.99E-10	4.78E-12	-1.63E-9	3.70E-9
SQP	Pt	3.53E+0	2.56E-2	2.24E-3	3.56E+0	2.41E-2	1.82E-1	4.08E-3	-3.29E+0	4.82E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.76E-1	4.29E-4	2.40E-2	1.00E+0	4.05E-4	2.11E-2	5.86E-5	-5.68E-1	4.54E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.76E-1	4.29E-4	2.40E-2	1.00E+0	4.05E-4	2.11E-2	5.86E-5	-5.68E-1	4.54E-1
PENRE	MJ	4.42E+0	3.17E-2	1.44E-3	4.46E+0	3.00E-2	3.13E-1	1.69E-3	-2.32E+0	2.48E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.42E+0	3.17E-2	1.44E-3	4.46E+0	3.00E-2	3.13E-1	1.69E-3	-2.32E+0	2.48E+0
PET	MJ	5.40E+0	3.21E-2	2.55E-2	5.46E+0	3.04E-2	3.35E-1	1.75E-3	-2.89E+0	2.94E+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	3.00E-3	3.38E-6	1.46E-6	3.01E-3	3.19E-6	3.18E-4	1.95E-6	-1.39E-3	1.94E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.16E-5	7.64E-8	2.73E-13	2.17E-5	7.22E-8	4.85E-7	1.96E-9	-1.96E-6	2.03E-5
NHWD	kg	1.81E-2	1.85E-3	1.05E-6	1.99E-2	1.75E-3	1.13E-2	6.99E-3	-7.72E-3	3.23E-2
RWD	kg	7.85E-6	2.03E-7	1.10E-13	8.05E-6	1.92E-7	1.12E-6	1.03E-8	-3.78E-6	5.60E-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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