Environmental Profile

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

Ecochain v3.5.80

Product:	3003194 - Wadal PVC Branch 88° GY 160x110 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	1.87E+0	3.04E-2	1.45E-4	1.90E+0	2.44E-2	1.31E+0	7.74E-3	-1.10E+0	2.14E+0
GWP-f	kg CO2 eq	2.28E+0	3.03E-2	1.46E-4	2.31E+0	2.44E-2	8.13E-1	7.73E-3	-1.25E+0	1.90E+0
GWP-b	kg CO2 eq	-4.11E-1	1.84E-5	-1.54E-6	-4.11E-1	1.48E-5	5.01E-1	9.78E-6	1.51E-1	2.41E-1
GWP-luluc	kg CO2 eq	2.88E-3	1.07E-5	1.49E-7	2.89E-3	8.63E-6	3.12E-4	2.03E-7	-1.98E-3	1.23E-3
ODP	kg CFC11 eq	1.08E-6	6.99E-9	8.26E-12	1.09E-6	5.62E-9	8.71E-8	2.89E-10	-5.50E-7	6.29E-7
AP	mol H+ eq	1.07E-2	1.73E-4	1.47E-6	1.09E-2	1.39E-4	1.52E-3	7.02E-6	-5.12E-3	7.46E-3
EP-fw	kg P eq	1.06E-4	2.50E-7	8.24E-9	1.06E-4	2.01E-7	1.05E-5	9.19E-9	-5.50E-5	6.16E-5
EP-m	kg N eq	2.03E-3	6.19E-5	1.55E-7	2.09E-3	4.97E-5	3.80E-4	4.35E-6	-9.75E-4	1.55E-3
EP-T	mol N eq	2.18E-2	6.82E-4	1.85E-6	2.25E-2	5.47E-4	4.19E-3	2.80E-5	-1.06E-2	1.66E-2
POCP	kg NMVOC eq	7.13E-3	1.95E-4	6.28E-7	7.32E-3	1.56E-4	1.25E-3	9.64E-6	-3.52E-3	5.22E-3
ADP-mm	kg Sb eq	1.88E-3	7.85E-7	1.97E-8	1.88E-3	6.30E-7	5.94E-6	7.04E-9	-2.34E-5	1.87E-3
ADP-f	MJ	5.50E+1	4.66E-1	1.36E-3	5.55E+1	3.74E-1	4.02E+0	2.11E-2	-2.90E+1	3.09E+1
WDP	m3 depriv.	3.33E+0	1.43E-3	5.22E-5	3.33E+0	1.15E-3	1.56E-1	1.36E-4	-1.75E+0	1.74E+0
PM	disease inc.	8.31E-8	2.74E-9	9.08E-12	8.58E-8	2.20E-9	1.88E-8	1.45E-10	-4.78E-8	5.92E-8
IR	kBq U-235 eq	1.22E-1	2.04E-3	1.02E-6	1.24E-1	1.64E-3	1.44E-2	9.69E-5	-6.14E-2	7.83E-2
ETP-fw	CTUe	7.06E+1	3.78E-1	1.21E-2	7.10E+1	3.04E-1	3.07E+1	3.37E-1	-2.82E+1	7.42E+1
HTP-c	CTUh	1.88E-9	1.35E-11	6.17E-13	1.90E-9	1.08E-11	4.66E-10	5.82E-13	-8.03E-10	1.57E-9
HTP-nc	CTUh	5.66E-8	4.51E-10	1.57E-11	5.70E-8	3.62E-10	1.08E-8	6.45E-11	-2.36E-8	4.47E-8
SQP	Pt	4.96E+1	3.99E-1	2.24E-3	5.00E+1	3.20E-1	2.46E+0	5.40E-2	-6.14E+1	-8.57E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	9.14E+0	6.68E-3	2.40E-2	9.17E+0	5.37E-3	2.87E-1	7.87E-4	-1.08E+1	-1.31E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	9.14E+0	6.68E-3	2.40E-2	9.17E+0	5.37E-3	2.87E-1	7.87E-4	-1.08E+1	-1.31E+0
PENRE	MJ	5.90E+1	4.95E-1	1.44E-3	5.95E+1	3.97E-1	4.28E+0	2.24E-2	-3.12E+1	3.30E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	5.90E+1	4.95E-1	1.44E-3	5.95E+1	3.97E-1	4.28E+0	2.24E-2	-3.12E+1	3.30E+1
PET	MJ	6.81E+1	5.01E-1	2.55E-2	6.87E+1	4.03E-1	4.57E+0	2.32E-2	-4.20E+1	3.17E+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	3.97E-2	5.27E-5	1.46E-6	3.97E-2	4.23E-5	4.31E-3	2.58E-5	-2.22E-2	2.19E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.77E-4	1.19E-6	2.73E-13	2.78E-4	9.57E-7	6.70E-6	2.57E-8	-2.67E-5	2.59E-4
NHWD	kg	2.51E-1	2.89E-2	1.05E-6	2.79E-1	2.32E-2	1.52E-1	9.27E-2	-1.10E-1	4.37E-1
RWD	kg	1.08E-4	3.17E-6	1.10E-13	1.11E-4	2.54E-6	1.55E-5	1.37E-7	-5.58E-5	7.37E-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

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777