Environmental Profile

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

Ecochain v3.5.80

Product:	3003106 - Wadal PVC Expansion piece GY 110
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	1.47E+0	2.08E-2	1.45E-4	1.49E+0	1.88E-2	8.33E-1	6.21E-3	-8.31E-1	1.52E+0
GWP-f	kg CO2 eq	1.66E+0	2.08E-2	1.46E-4	1.68E+0	1.87E-2	6.04E-1	6.21E-3	-8.91E-1	1.41E+0
GWP-b	kg CO2 eq	-1.84E-1	1.26E-5	-1.54E-6	-1.84E-1	1.14E-5	2.28E-1	7.63E-6	6.09E-2	1.05E-1
GWP-luluc	kg CO2 eq	1.79E-3	7.36E-6	1.49E-7	1.80E-3	6.63E-6	2.29E-4	1.59E-7	-1.06E-3	9.78E-4
ODP	kg CFC11 eq	7.86E-7	4.79E-9	8.26E-12	7.91E-7	4.32E-9	6.28E-8	2.25E-10	-3.95E-7	4.63E-7
AP	mol H+ eq	7.90E-3	1.18E-4	1.47E-6	8.02E-3	1.07E-4	1.09E-3	5.47E-6	-3.49E-3	5.73E-3
EP-fw	kg P eq	7.46E-5	1.71E-7	8.24E-9	7.48E-5	1.54E-7	7.64E-6	7.18E-9	-3.55E-5	4.72E-5
EP-m	kg N eq	1.41E-3	4.24E-5	1.55E-7	1.45E-3	3.82E-5	2.72E-4	3.57E-6	-6.43E-4	1.12E-3
EP-T	mol N eq	1.53E-2	4.67E-4	1.85E-6	1.57E-2	4.21E-4	2.99E-3	2.18E-5	-6.97E-3	1.22E-2
POCP	kg NMVOC eq	5.12E-3	1.34E-4	6.28E-7	5.25E-3	1.20E-4	8.94E-4	7.55E-6	-2.37E-3	3.90E-3
ADP-mm	kg Sb eq	1.41E-3	5.38E-7	1.97E-8	1.41E-3	4.85E-7	4.29E-6	5.49E-9	-1.73E-5	1.39E-3
ADP-f	MJ	4.08E+1	3.19E-1	1.36E-3	4.12E+1	2.88E-1	2.94E+0	1.64E-2	-2.12E+1	2.32E+1
WDP	m3 depriv.	2.43E+0	9.80E-4	5.22E-5	2.43E+0	8.83E-4	1.15E-1	1.08E-4	-1.22E+0	1.33E+0
PM	disease inc.	5.84E-8	1.88E-9	9.08E-12	6.03E-8	1.69E-9	1.36E-8	1.13E-10	-2.90E-8	4.67E-8
IR	kBq U-235 eq	8.90E-2	1.40E-3	1.02E-6	9.04E-2	1.26E-3	1.04E-2	7.55E-5	-4.15E-2	6.06E-2
ETP-fw	CTUe	4.75E+1	2.59E-1	1.21E-2	4.78E+1	2.34E-1	2.22E+1	2.45E-1	-1.65E+1	5.40E+1
HTP-c	CTUh	1.41E-9	9.22E-12	6.17E-13	1.42E-9	8.31E-12	3.36E-10	4.54E-13	-5.20E-10	1.24E-9
HTP-nc	CTUh	4.30E-8	3.09E-10	1.57E-11	4.33E-8	2.78E-10	7.86E-9	4.74E-11	-1.60E-8	3.55E-8
SQP	Pt	2.48E+1	2.73E-1	2.24E-3	2.51E+1	2.46E-1	1.81E+0	4.20E-2	-2.79E+1	-7.05E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	8.80E+0	4.58E-3	2.40E-2	8.83E+0	4.13E-3	2.10E-1	6.16E-4	-5.07E+0	3.97E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	8.80E+0	4.58E-3	2.40E-2	8.83E+0	4.13E-3	2.10E-1	6.16E-4	-5.07E+0	3.97E+0
PENRE	MJ	4.38E+1	3.39E-1	1.44E-3	4.41E+1	3.05E-1	3.13E+0	1.74E-2	-2.29E+1	2.47E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	4.38E+1	3.39E-1	1.44E-3	4.41E+1	3.05E-1	3.13E+0	1.74E-2	-2.29E+1	2.47E+1
PET	MJ	5.26E+1	3.43E-1	2.55E-2	5.30E+1	3.10E-1	3.34E+0	1.80E-2	-2.79E+1	2.87E+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	2.87E-2	3.61E-5	1.46E-6	2.88E-2	3.26E-5	3.20E-3	2.01E-5	-1.45E-2	1.76E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.02E-4	8.16E-7	2.73E-13	2.03E-4	7.36E-7	4.86E-6	2.00E-8	-1.82E-5	1.90E-4
NHWD	kg	1.67E-1	1.98E-2	1.05E-6	1.86E-1	1.78E-2	1.10E-1	7.22E-2	-7.24E-2	3.14E-1
RWD	kg	8.04E-5	2.17E-6	1.10E-13	8.26E-5	1.96E-6	1.12E-5	1.07E-7	-3.74E-5	5.84E-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