

Environmental Profile

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

Ecochain v3.5.80



Product: 3003136 - Wadal PVC Bend 45° GY 110 S/S
Unit: 1 piece
Manufacturer: Wavin - NL - Hardenberg - Verified
Address: J.C. Kellerlaan 3
7772 SG Hardenberg
Netherlands

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: NMD Bepalingsmethode 1.1 (2022)
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 - NL - Hardenberg - Verified (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					Use stage							End-of-Life stage				
A1 Raw material supply A2 Transport A3 Manufacturing					B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment B6 Operational energy use B7 Operational water use							C1 De-construction demolition C2 Transport C3 Waste processing C4 Disposal				
Construction process stage					Benefits and loads beyond the system boundaries											
A4 Transport gate to site A5 Assembly / Construction installation process					D Reuse- Recovery- Recycling- potential											

Environmental impacts and parameters

ECI = Environmental Costs Indicator [euro]; **ADPE** = Abiotic depletion potential for non-fossil resources [kg Sb-eq]; **ADPF** = Abiotic depletion potential for fossil resources [kg Sb-eq]; **GWP** = Global warming potential [kg CO2-eq]; **ODP** = Depletion potential of the stratospheric ozone layer [kg CFC-11-eq]; **POCP** = Formation potential of tropospheric ozone photochemical oxidants [kg ethene-eq]; **AP** = Acidification potential of land and water [kg SO2-eq]; **EP** = Eutrophication potential [kg PO4 3--eq]; **HTP** = Human toxicity potential [kg 1,4-DB-eq]; **FAETP** = Freshwater aquatic ecotoxicity potential [kg 1,4-DB-eq]; **MAETP** = Marine aquatic ecotoxicity potential [kg 1,4-DB-eq]; **TETP** = Terrestrial ecotoxicity potential [kg 1,4-DB-eq]; **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

This document and supporting material contain confidential and proprietary business information of Wavin - NL - Hardenberg - Verified. These materials may be printed or (photo) copied or otherwise used only with the written consent of Wavin - NL - Hardenberg - Verified.

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.07	0	0	0.08	0	0.02	0	-0.04	0.07
ADPE	kg Sb-eq	6.59E-4	2.28E-7	1.02E-6	6.60E-4	2.17E-7	1.95E-6	2.42E-9	-7.50E-6	6.55E-4
ADPF	kg Sb-eq	7.68E-3	6.56E-5	1.76E-4	7.92E-3	6.10E-5	6.76E-4	3.35E-6	-4.21E-3	4.45E-3
GWP	kg CO2-eq	6.41E-1	8.93E-3	3.33E-2	6.84E-1	8.30E-3	2.31E-1	2.28E-3	-3.60E-1	5.65E-1
ODP	kg CFC-11-eq	3.64E-7	1.58E-9	2.63E-9	3.69E-7	1.54E-9	2.84E-8	7.98E-11	-1.84E-7	2.15E-7
POCP	kg ethene-eq	3.68E-4	5.39E-6	1.45E-5	3.87E-4	4.98E-6	5.32E-5	5.91E-7	-1.86E-4	2.60E-4
AP	kg SO2-eq	2.57E-3	3.92E-5	1.43E-4	2.76E-3	3.57E-5	3.94E-4	1.80E-6	-1.22E-3	1.97E-3
EP	kg PO4 3--eq	3.27E-4	7.71E-6	1.84E-5	3.53E-4	7.14E-6	5.96E-5	7.11E-7	-1.62E-4	2.59E-4
HTP	kg 1,4-DB-eq	2.51E-1	3.76E-3	1.55E-2	2.70E-1	3.55E-3	1.03E-1	1.89E-4	-1.17E-1	2.60E-1
FAETP	kg 1,4-DB-eq	7.44E-3	1.10E-4	5.29E-4	8.08E-3	1.04E-4	1.56E-3	5.83E-5	-3.16E-3	6.64E-3
MAETP	kg 1,4-DB-eq	1.77E+1	3.95E-1	2.08E+0	2.02E+1	3.72E-1	5.35E+0	7.13E-2	-7.57E+0	1.84E+1
TETP	kg 1,4-DB-eq	1.85E-3	1.33E-5	1.15E-3	3.02E-3	1.26E-5	3.67E-4	6.37E-7	-1.05E-3	2.34E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.63E-1	9.01E-3	3.81E-2	7.10E-1	8.38E-3	2.44E-1	2.66E-3	-3.44E-1	6.21E-1
GWP-f	kg CO2 eq	6.56E-1	9.00E-3	2.93E-2	6.95E-1	8.37E-3	2.33E-1	2.66E-3	-3.68E-1	5.70E-1
GWP-b	kg CO2 eq	6.53E-3	4.16E-6	6.05E-3	1.26E-2	5.08E-6	1.14E-2	3.36E-6	2.41E-2	4.80E-2
GWP-luluc	kg CO2 eq	7.13E-4	3.30E-6	2.78E-3	3.50E-3	2.96E-6	1.06E-4	6.97E-8	-4.17E-4	3.19E-3
ODP	kg CFC11 eq	3.59E-7	1.99E-9	3.10E-9	3.64E-7	1.93E-9	2.93E-8	9.91E-11	-1.82E-7	2.14E-7
AP	mol H+ eq	3.13E-3	5.22E-5	1.79E-4	3.36E-3	4.77E-5	4.94E-4	2.41E-6	-1.48E-3	2.43E-3
EP-fw	kg P eq	3.17E-5	9.08E-8	5.13E-7	3.23E-5	6.89E-8	3.54E-6	3.16E-9	-1.55E-5	2.04E-5
EP-m	kg N eq	5.56E-4	1.84E-5	4.22E-5	6.16E-4	1.71E-5	1.20E-4	1.50E-6	-2.62E-4	4.93E-4
EP-T	mol N eq	6.00E-3	2.03E-4	4.65E-4	6.67E-3	1.88E-4	1.33E-3	9.62E-6	-2.81E-3	5.38E-3
POCP	kg NMVOC eq	1.93E-3	5.79E-5	1.32E-4	2.12E-3	5.37E-5	3.97E-4	3.31E-6	-9.43E-4	1.63E-3
ADP-mm	kg Sb eq	6.59E-4	2.28E-7	1.02E-6	6.60E-4	2.17E-7	1.95E-6	2.42E-9	-7.50E-6	6.55E-4
ADP-f	MJ	1.64E+1	1.36E-1	3.28E-1	1.68E+1	1.28E-1	1.34E+0	7.24E-3	-8.87E+0	9.43E+0
WDP	m3 depriv.	1.09E+0	4.86E-4	2.54E-1	1.34E+0	3.94E-4	5.32E-2	4.69E-5	-5.54E-1	8.43E-1
PM	disease inc.	2.09E-8	8.08E-10	2.21E-9	2.39E-8	7.56E-10	6.10E-9	4.99E-11	-1.11E-8	1.97E-8
IR	kBq U-235 eq	3.74E-2	5.69E-4	5.21E-4	3.85E-2	5.62E-4	4.73E-3	3.33E-5	-1.83E-2	2.56E-2
ETP-fw	CTUe	1.95E+1	1.21E-1	7.61E-1	2.04E+1	1.04E-1	1.05E+1	1.16E-1	-6.97E+0	2.41E+1
HTP-c	CTUh	5.46E-10	3.93E-12	2.63E-11	5.76E-10	3.71E-12	1.48E-10	2.00E-13	-2.04E-10	5.24E-10
HTP-nc	CTUh	1.81E-8	1.32E-10	8.22E-10	1.90E-8	1.24E-10	3.61E-9	2.22E-11	-7.07E-9	1.57E-8
SQP	Pt	3.21E+0	1.18E-1	2.45E-2	3.35E+0	1.10E-1	8.15E-1	1.86E-2	-5.68E+0	-1.39E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.04E+0	1.70E-3	1.59E+0	2.64E+0	1.84E-3	9.70E-2	2.70E-4	-1.24E+0	1.50E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.04E+0	1.70E-3	1.59E+0	2.64E+0	1.84E-3	9.70E-2	2.70E-4	-1.24E+0	1.50E+0
PENRE	MJ	1.76E+1	1.44E-1	3.54E-1	1.80E+1	1.36E-1	1.42E+0	7.68E-3	-9.55E+0	1.01E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.76E+1	1.44E-1	3.54E-1	1.80E+1	1.36E-1	1.42E+0	7.68E-3	-9.55E+0	1.01E+1
PET	MJ	1.86E+1	1.46E-1	1.95E+0	2.07E+1	1.38E-1	1.52E+0	7.95E-3	-1.08E+1	1.16E+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	1.22E-2	1.65E-5	5.99E-3	1.82E-2	1.45E-5	1.46E-3	8.87E-6	-6.37E-3	1.33E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	9.47E-5	3.44E-7	3.48E-7	9.53E-5	3.29E-7	2.18E-6	8.82E-9	-7.48E-6	9.04E-5
NHWD	kg	6.79E-2	8.61E-3	5.37E-4	7.71E-2	7.96E-3	4.81E-2	3.18E-2	-2.96E-2	1.35E-1
RWD	kg	3.25E-5	8.91E-7	6.45E-7	3.40E-5	8.74E-7	5.06E-6	4.71E-8	-1.62E-5	2.38E-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