Environmental Profile

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

Ecochain v3.5.80

Product:	3085242 - PVC Vent. Bend 90° BL 195 S/S
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3 7772 SG Hardenberg Netherlands

With the new Ventiza air distribution system, Wavin offers a solution from the ventilation to the valve. A good indoor climate is arranged in no time!

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

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

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

Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.14	0	0.01	0.15	0	0.05	0	-0.07	0.13
ADPE	kg Sb-eq	1.38E-3	4.20E-7	2.04E-6	1.38E-3	4.27E-7	3.74E-6	4.78E-9	-1.44E-5	1.37E-3
ADPF	kg Sb-eq	1.53E-2	1.21E-4	3.50E-4	1.58E-2	1.20E-4	1.31E-3	6.61E-6	-8.14E-3	9.11E-3
GWP	kg CO2-eq	1.31E+0	1.64E-2	6.64E-2	1.39E+0	1.64E-2	4.51E-1	4.52E-3	-6.85E-1	1.18E+0
ODP	kg CFC-11-eq	6.87E-7	2.91E-9	5.25E-9	6.95E-7	3.04E-9	5.51E-8	1.57E-10	-3.57E-7	3.97E-7
POCP	kg ethene-eq	8.10E-4	9.91E-6	2.89E-5	8.49E-4	9.82E-6	1.01E-4	1.17E-6	-3.51E-4	6.10E-4
AP	kg SO2-eq	5.38E-3	7.22E-5	2.86E-4	5.74E-3	7.05E-5	7.56E-4	3.56E-6	-2.23E-3	4.34E-3
EP	kg PO4 3−-eq	6.40E-4	1.42E-5	3.67E-5	6.91E-4	1.41E-5	1.13E-4	1.40E-6	-2.69E-4	5.52E-4
HTP	kg 1,4-DB-eq	4.74E-1	6.91E-3	3.09E-2	5.11E-1	7.00E-3	1.99E-1	3.74E-4	-2.17E-1	5.01E-1
FAETP	kg 1,4-DB-eq	1.30E-2	2.02E-4	1.05E-3	1.42E-2	2.05E-4	3.00E-3	1.18E-4	-4.85E-3	1.27E-2
MAETP	kg 1,4-DB-eq	3.36E+1	7.26E-1	4.15E+0	3.85E+1	7.33E-1	1.01E+1	1.44E-1	-1.40E+1	3.54E+1
TETP	kg 1,4-DB-eq	3.39E-3	2.44E-5	2.29E-3	5.70E-3	2.48E-5	7.16E-4	1.25E-6	-1.62E-3	4.83E-3
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.35E+0	1.66E-2	7.60E-2	1.45E+0	1.65E-2	4.57E-1	5.27E-3	-7.01E-1	1.22E+0
GWP-f	kg CO2 eq	1.34E+0	1.66E-2	5.84E-2	1.41E+0	1.65E-2	4.55E-1	5.27E-3	-7.00E-1	1.19E+0
GWP-b	kg CO2 eq	1.24E-2	7.64E-6	1.21E-2	2.44E-2	1.00E-5	1.68E-3	6.62E-6	-3.57E-5	2.61E-2
GWP-luluc	kg CO2 eq	1.12E-3	6.07E-6	5.55E-3	6.68E-3	5.84E-6	2.06E-4	1.38E-7	-4.90E-4	6.40E-3
ODP	kg CFC11 eq	6.77E-7	3.65E-9	6.17E-9	6.87E-7	3.80E-9	5.66E-8	1.95E-10	-3.53E-7	3.94E-7
AP	mol H+ eq	6.48E-3	9.60E-5	3.56E-4	6.93E-3	9.40E-5	9.47E-4	4.76E-6	-2.69E-3	5.29E-3
EP-fw	kg P eq	6.19E-5	1.67E-7	1.02E-6	6.31E-5	1.36E-7	6.88E-6	6.25E-9	-2.64E-5	4.37E-5
EP-m	kg N eq	1.12E-3	3.38E-5	8.41E-5	1.23E-3	3.36E-5	2.28E-4	2.95E-6	-4.65E-4	1.03E-3
EP-T	mol N eq	1.18E-2	3.73E-4	9.28E-4	1.31E-2	3.71E-4	2.51E-3	1.90E-5	-4.95E-3	1.10E-2
POCP	kg NMVOC eq	4.02E-3	1.07E-4	2.64E-4	4.39E-3	1.06E-4	7.52E-4	6.54E-6	-1.72E-3	3.53E-3
ADP-mm	kg Sb eq	1.38E-3	4.20E-7	2.04E-6	1.38E-3	4.27E-7	3.74E-6	4.78E-9	-1.44E-5	1.37E-3
ADP-f	MJ	3.26E+1	2.50E-1	6.53E-1	3.36E+1	2.53E-1	2.58E+0	1.43E-2	-1.71E+1	1.93E+1
WDP	m3 depriv.	2.09E+0	8.93E-4	5.05E-1	2.59E+0	7.77E-4	1.04E-1	9.51E-5	-1.02E+0	1.67E+0
PM	disease inc.	4.20E-8	1.49E-9	4.40E-9	4.79E-8	1.49E-9	1.16E-8	9.83E-11	-1.73E-8	4.38E-8
IR	kBq U-235 eq	6.99E-2	1.05E-3	1.04E-3	7.20E-2	1.11E-3	9.09E-3	6.56E-5	-3.30E-2	4.92E-2
ETP-fw	CTUe	3.29E+1	2.23E-1	1.52E+0	3.47E+1	2.06E-1	2.03E+1	2.26E-1	-1.01E+1	4.53E+1
HTP-c	CTUh	1.06E-9	7.22E-12	5.25E-11	1.12E-9	7.32E-12	2.87E-10	3.96E-13	-3.74E-10	1.04E-9
HTP-nc	CTUh	3.49E-8	2.44E-10	1.64E-9	3.67E-8	2.45E-10	7.00E-9	4.33E-11	-1.30E-8	3.11E-8
SQP	Pt	4.34E+0	2.17E-1	4.88E-2	4.60E+0	2.17E-1	1.58E+0	3.66E-2	-2.68E+0	3.76E+0

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.63E+0	3.13E-3	3.18E+0	4.81E+0	3.63E-3	1.89E-1	5.32E-4	-8.96E-1	4.10E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.63E+0	3.13E-3	3.18E+0	4.81E+0	3.63E-3	1.89E-1	5.32E-4	-8.96E-1	4.10E+0
PENRE	MJ	3.50E+1	2.65E-1	7.06E-1	3.60E+1	2.69E-1	2.75E+0	1.52E-2	-1.84E+1	2.06E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.50E+1	2.65E-1	7.06E-1	3.60E+1	2.69E-1	2.75E+0	1.52E-2	-1.84E+1	2.06E+1
PET	MJ	3.67E+1	2.68E-1	3.88E+0	4.08E+1	2.73E-1	2.94E+0	1.57E-2	-1.93E+1	2.47E+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	2.33E-2	3.04E-5	1.19E-2	3.53E-2	2.87E-5	2.83E-3	1.75E-5	-1.08E-2	2.74E-2
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.95E-4	6.33E-7	6.94E-7	1.96E-4	6.48E-7	4.17E-6	1.74E-8	-1.41E-5	1.87E-4
NHWD	kg	1.24E-1	1.58E-2	1.07E-3	1.41E-1	1.57E-2	9.29E-2	6.28E-2	-5.44E-2	2.58E-1
RWD	kg	6.02E-5	1.64E-6	1.29E-6	6.31E-5	1.72E-6	9.66E-6	9.29E-8	-2.91E-5	4.55E-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

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