Environmental Profile

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

Ecochain v4.3.1

Ecochain

Product:	3093396 - AquaCell 85 Without Capillarity
Unit:	1 piece
Manufacturer:	Wavin - NL - Hardenberg - Verified
Address:	J.C. Kellerlaan 3
	7772 SG Hardenberg
	Netherlands

LCA standard:	NMD Bepalingsmethode 1.1 (2022)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	18-03-2024
End of validity:	18-03-2029
Verifier:	Martijn van Hövell - SGS Search

WAVIN
An Orbia business.

SGS | SEARCH

AquaCell 85 is a water retention unit, as part of a PolderRoof solution. PolderRoof is Wavin's complete water retention, level and flow control solution, enabling rain water storage on roofs as well as re-use (for example to keep roof top gardens green).

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	0.18	0.04	0.05	0.27	0.01	0.23	0	0.02	0.54
ADPE	kg Sb-eq	2.01E-5	8.67E-6	1.27E-5	4.14E-5	2.38E-6	1.13E-5	2.64E-8	7.37E-6	6.25E-5
ADPF	kg Sb-eq	1.15E-2	2.49E-3	2.18E-3	1.61E-2	6.70E-4	4.41E-3	3.68E-5	1.24E-2	3.36E-2
GWP	kg CO2-eq	1.36E+0	3.39E-1	4.14E-1	2.12E+0	9.13E-2	2.67E+0	3.70E-2	1.30E-1	5.04E+0
ODP	kg CFC-11-eq	2.18E-7	6.02E-8	3.27E-8	3.11E-7	1.69E-8	5.80E-8	8.78E-10	-1.41E-7	2.46E-7
POCP	kg ethene-eq	6.45E-4	2.05E-4	1.80E-4	1.03E-3	5.48E-5	4.40E-4	8.43E-6	7.54E-4	2.29E-3
AP	kg SO2-eq	6.22E-3	1.49E-3	1.78E-3	9.49E-3	3.93E-4	2.26E-3	1.94E-5	2.40E-3	1.46E-2
EP	kg PO4 3--eq	9.47E-4	2.93E-4	2.29E-4	1.47E-3	7.85E-5	4.01E-4	8.40E-6	6.32E-5	2.02E-3
HTP	kg 1,4-DB-eq	7.22E-1	1.43E-1	1.92E-1	1.06E+0	3.90E-2	8.93E-1	2.89E-3	-6.38E-3	1.99E+0
FAETP	kg 1,4-DB-eq	2.00E-2	4.17E-3	6.56E-3	3.07E-2	1.14E-3	1.91E-2	3.11E-3	-1.12E-3	5.30E-2
MAETP	kg 1,4-DB-eq	6.16E+1	1.50E+1	2.59E+1	1.02E+2	4.09E+0	4.31E+1	3.11E+0	3.98E+0	1.57E+2
TETP	kg 1,4-DB-eq	7.29E-3	5.05E-4	1.43E-2	2.21E-2	1.38E-4	2.76E-3	4.76E-6	-8.16E-5	2.49E-2

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	2.40E-1	3.42E-1	4.73E-1	1.06E+0	9.21E-2	3.97E+0	4.33E-2	1.77E-1	5.34E+0
GWP-f	kg CO2 eq	1.29E+0	3.42E-1	3.64E-1	2.00E+0	9.20E-2	2.68E+0	4.34E-2	1.73E-1	4.99E+0
GWP-b	kg CO2 eq	-1.05E+0	1.58E-4	7.51E-2	-9.80E-1	5.59E-5	1.29E+0	3.76E-5	4.96E-3	3.14E-1
GWP-luluc	kg CO2 eq	2.50E-3	1.25E-4	3.45E-2	3.71E-2	3.26E-5	5.20E-4	7.59E-7	-1.35E-4	3.76E-2
ODP	kg CFC11 eq	2.32E-7	7.55E-8	3.84E-8	3.46E-7	2.12E-8	6.87E-8	1.09E-9	-1.55E-7	2.81E-7
AP	mol H+ eq	7.54E-3	1.98E-3	2.22E-3	1.17E-2	5.24E-4	2.92E-3	2.61E-5	2.69E-3	1.79E-2
EP-fw	kg P eq	9.27E-5	3.45E-6	6.37E-6	1.03E-4	7.57E-7	1.50E-5	3.45E-8	8.74E-6	1.27E-4
EP-m	kg N eq	1.32E-3	6.99E-4	5.24E-4	2.55E-3	1.88E-4	8.61E-4	1.68E-5	2.42E-4	3.85E-3
EP-T	mol N eq	1.45E-2	7.71E-3	5.78E-3	2.79E-2	2.07E-3	9.48E-3	1.06E-4	2.15E-3	4.18E-2
POCP	kg NMVOC eq	4.13E-3	2.20E-3	1.64E-3	7.97E-3	5.91E-4	2.98E-3	3.96E-5	2.19E-3	1.38E-2
ADP-mm	kg Sb eq	2.01E-5	8.67E-6	1.27E-5	4.14E-5	2.38E-6	1.13E-5	2.64E-8	7.37E-6	6.25E-5
ADP-f	MJ	2.75E+1	5.16E+0	4.07E+0	3.67E+1	1.41E+0	9.08E+0	7.96E-2	2.83E+1	7.56E+1
WDP	m3 depriv.	2.46E-1	1.85E-2	3.15E+0	3.41E+0	4.34E-3	1.77E-1	4.74E-4	7.12E-1	4.30E+0
PM	disease inc.	1.32E-7	3.07E-8	2.74E-8	1.90E-7	8.31E-9	4.75E-8	5.47E-10	2.01E-8	2.66E-7
IR	kBq U-235 eq	1.77E-1	2.16E-2	6.46E-3	2.05E-1	6.17E-3	2.75E-2	3.68E-4	9.63E-3	2.48E-1
ETP-fw	CTUe	3.79E+1	4.60E+0	9.44E+0	5.19E+1	1.15E+0	1.02E+1	6.66E-2	-1.84E+0	6.15E+1
HTP-c	CTUh	1.09E-9	1.49E-10	3.27E-10	1.56E-9	4.08E-11	1.32E-9	2.00E-12	-9.54E-11	2.83E-9
HTP-nc	CTUh	1.95E-8	5.03E-9	1.02E-8	3.47E-8	1.37E-9	1.54E-8	4.32E-11	1.83E-9	5.34E-8
SQP	Pt	1.22E+2	4.47E+0	3.04E-1	1.26E+2	1.21E+0	7.25E+0	2.04E-1	-4.99E+1	8.52E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.98E+1	6.46E-2	1.98E+1	3.96E+1	2.03E-2	4.46E-1	3.04E-3	-7.84E+0	3.22E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.98E+1	6.46E-2	1.98E+1	3.96E+1	2.03E-2	4.46E-1	3.04E-3	-7.84E+0	3.22E+1
PENRE	MJ	2.91E+1	5.48E+0	4.40E+0	3.90E+1	1.50E+0	9.67E+0	8.45E-2	2.97E+1	8.00E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.91E+1	5.48E+0	4.40E+0	3.90E+1	1.50E+0	9.67E+0	8.45E-2	2.97E+1	8.00E+1
PET	MJ	4.88E+1	5.54E+0	2.42E+1	7.86E+1	1.52E+0	1.01E+1	8.75E-2	2.19E+1	1.12E+2
SM	kg	3.38E+0	0	0	3.38E+0	0	0	0	0	3.38E+0
RSF	MJ	0	0	0	0	0	0	0	RSF	0
NRSF	MJ	0	0	0	0	0	0	0	NRSF	0
FW	m3	1.49E-2	6.28E-4	7.44E-2	8.99E-2	1.60E-4	5.28E-3	9.78E-5	1.06E-2	1.06E-1

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.50E-5	1.31E-5	4.32E-6	4.24E-5	3.61E-6	1.49E-5	9.65E-8	-2.11E-5	4.00E-5
NHWD	kg	2.18E-1	3.27E-1	6.67E-3	5.51E-1	8.76E-2	4.58E-1	3.50E-1	-1.60E-3	1.45E+0
RWD	kg	1.78E-4	3.39E-5	8.00E-6	2.20E-4	9.61E-6	3.49E-5	5.19E-7	4.38E-6	2.69E-4
CRU	kg	0	0	0	0	0	1.91E-1	0	0	1.91E-1
MFR	kg	0	0	0	0	0	2.49E+0	0	0	2.49E+0
MER	kg	0	0	0	0	0	9.03E-1	0	0	9.03E-1
EE	MJ	0	0	0	0	0	0	0	2.63E+1	2.63E+1
EET	MJ	0	0	0	0	0	0	0	9.38E+0	9.38E+0
EEE	MJ	0	0	0	0	0	0	0	3.79E+0	3.79E+0