

# Environmental Profile

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

Ecochain v4.3.1



Product: 3093913 - AquaCell 160 Half 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



AquaCell 160 is a water retention units, 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					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

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# Results

Environmental impact SBK set 1	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
ECI	euro	0.19	0.04	0.05	0.29	0.01	0.24	0	0.01	0.55
ADPE	kg Sb-eq	3.74E-5	8.86E-6	1.29E-5	5.91E-5	2.42E-6	1.15E-5	2.72E-8	5.90E-6	7.90E-5
ADPF	kg Sb-eq	1.22E-2	2.55E-3	2.21E-3	1.70E-2	6.82E-4	4.49E-3	3.75E-5	1.16E-2	3.38E-2
GWP	kg CO2-eq	1.49E+0	3.47E-1	4.20E-1	2.26E+0	9.30E-2	2.72E+0	3.77E-2	6.65E-2	5.17E+0
ODP	kg CFC-11-eq	2.33E-7	6.15E-8	3.32E-8	3.28E-7	1.72E-8	5.91E-8	8.95E-10	-1.77E-7	2.28E-7
POCP	kg ethene-eq	7.01E-4	2.09E-4	1.83E-4	1.09E-3	5.58E-5	4.48E-4	8.59E-6	7.20E-4	2.33E-3
AP	kg SO2-eq	7.07E-3	1.53E-3	1.81E-3	1.04E-2	4.00E-4	2.30E-3	1.98E-5	2.18E-3	1.53E-2
EP	kg PO4 3--eq	1.06E-3	3.00E-4	2.32E-4	1.59E-3	7.99E-5	4.08E-4	8.50E-6	3.69E-5	2.12E-3
HTP	kg 1,4-DB-eq	7.77E-1	1.46E-1	1.95E-1	1.12E+0	3.98E-2	9.09E-1	2.93E-3	-2.81E-2	2.04E+0
FAETP	kg 1,4-DB-eq	2.41E-2	4.26E-3	6.67E-3	3.50E-2	1.16E-3	1.94E-2	3.13E-3	-1.60E-3	5.72E-2
MAETP	kg 1,4-DB-eq	6.85E+1	1.53E+1	2.63E+1	1.10E+2	4.16E+0	4.38E+1	3.13E+0	2.58E+0	1.64E+2
TETP	kg 1,4-DB-eq	7.52E-3	5.16E-4	1.45E-2	2.26E-2	1.41E-4	2.82E-3	4.90E-6	-2.41E-4	2.53E-2
Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	3.70E-1	3.50E-1	4.81E-1	1.20E+0	9.38E-2	4.02E+0	4.41E-2	1.12E-1	5.47E+0
GWP-f	kg CO2 eq	1.42E+0	3.50E-1	3.70E-1	2.14E+0	9.37E-2	2.73E+0	4.41E-2	1.08E-1	5.12E+0
GWP-b	kg CO2 eq	-1.05E+0	1.61E-4	7.63E-2	-9.78E-1	5.69E-5	1.29E+0	3.82E-5	4.46E-3	3.15E-1
GWP-luluc	kg CO2 eq	2.62E-3	1.28E-4	3.51E-2	3.78E-2	3.32E-5	5.29E-4	7.90E-7	-1.81E-4	3.82E-2
ODP	kg CFC11 eq	2.47E-7	7.72E-8	3.91E-8	3.63E-7	2.16E-8	6.99E-8	1.11E-9	-1.91E-7	2.65E-7
AP	mol H+ eq	8.58E-3	2.03E-3	2.25E-3	1.29E-2	5.34E-4	2.97E-3	2.66E-5	2.43E-3	1.88E-2
EP-fw	kg P eq	9.73E-5	3.53E-6	6.47E-6	1.07E-4	7.71E-7	1.53E-5	3.57E-8	6.09E-6	1.29E-4
EP-m	kg N eq	1.45E-3	7.15E-4	5.32E-4	2.70E-3	1.91E-4	8.75E-4	1.70E-5	1.97E-4	3.98E-3
EP-T	mol N eq	1.63E-2	7.88E-3	5.87E-3	3.00E-2	2.10E-3	9.64E-3	1.08E-4	1.67E-3	4.36E-2
POCP	kg NMVOC eq	4.53E-3	2.25E-3	1.67E-3	8.45E-3	6.02E-4	3.03E-3	4.04E-5	2.02E-3	1.41E-2
ADP-mm	kg Sb eq	3.74E-5	8.86E-6	1.29E-5	5.91E-5	2.42E-6	1.15E-5	2.72E-8	5.90E-6	7.90E-5
ADP-f	MJ	2.89E+1	5.28E+0	4.13E+0	3.83E+1	1.44E+0	9.24E+0	8.12E-2	2.66E+1	7.57E+1
WDP	m3 depriv.	3.54E-1	1.89E-2	3.20E+0	3.57E+0	4.41E-3	1.80E-1	5.42E-4	6.09E-1	4.36E+0
PM	disease inc.	1.40E-7	3.14E-8	2.78E-8	1.99E-7	8.46E-9	4.84E-8	5.58E-10	1.84E-8	2.75E-7
IR	kBq U-235 eq	1.81E-1	2.21E-2	6.57E-3	2.09E-1	6.29E-3	2.80E-2	3.74E-4	6.31E-3	2.50E-1
ETP-fw	CTUe	4.18E+1	4.70E+0	9.60E+0	5.61E+1	1.17E+0	1.04E+1	6.79E-2	-2.83E+0	6.49E+1
HTP-c	CTUh	1.21E-9	1.53E-10	3.32E-10	1.69E-9	4.16E-11	1.38E-9	2.08E-12	-1.33E-10	2.98E-9
HTP-nc	CTUh	2.25E-8	5.15E-9	1.04E-8	3.80E-8	1.39E-9	1.58E-8	4.43E-11	5.15E-10	5.58E-8
SQP	Pt	1.22E+2	4.58E+0	3.09E-1	1.27E+2	1.23E+0	7.38E+0	2.08E-1	-5.01E+1	8.59E+1

Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.99E+1	6.61E-2	2.01E+1	4.00E+1	2.06E-2	4.54E-1	3.07E-3	-7.91E+0	3.26E+1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.99E+1	6.61E-2	2.01E+1	4.00E+1	2.06E-2	4.54E-1	3.07E-3	-7.91E+0	3.26E+1
PENRE	MJ	3.06E+1	5.60E+0	4.47E+0	4.06E+1	1.53E+0	9.85E+0	8.61E-2	2.80E+1	8.01E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	3.06E+1	5.60E+0	4.47E+0	4.06E+1	1.53E+0	9.85E+0	8.61E-2	2.80E+1	8.01E+1
PET	MJ	5.04E+1	5.67E+0	2.46E+1	8.06E+1	1.55E+0	1.03E+1	8.92E-2	2.01E+1	1.13E+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	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	1.76E-2	6.43E-4	7.56E-2	9.39E-2	1.63E-4	5.37E-3	9.95E-5	9.48E-3	1.09E-1
Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	2.81E-5	1.34E-5	4.39E-6	4.58E-5	3.68E-6	1.52E-5	9.90E-8	-2.24E-5	4.24E-5
NHWD	kg	2.41E-1	3.35E-1	6.77E-3	5.83E-1	8.92E-2	4.66E-1	3.56E-1	-7.08E-3	1.49E+0
RWD	kg	1.82E-4	3.46E-5	8.13E-6	2.25E-4	9.78E-6	3.55E-5	5.28E-7	1.47E-6	2.72E-4
CRU	kg	0	0	0	0	0	1.91E-1	0	0	1.91E-1
MFR	kg	0	0	0	0	0	2.54E+0	0	0	2.54E+0
MER	kg	0	0	0	0	0	9.15E-1	0	0	9.15E-1
EE	MJ	0	0	0	0	0	0	0	2.65E+1	2.65E+1
EET	MJ	0	0	0	0	0	0	0	9.42E+0	9.42E+0
EEE	MJ	0	0	0	0	0	0	0	3.81E+0	3.81E+0



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