Environmental Profile

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

Ecochain v3.5.80

Product:	3025464 - PP Bracket WT 32
Unit:	1 piece
Manufacturer:	Wavin - PL -Buk - Extra products

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	2.07E-2	5.87E-4	1.45E-4	2.14E-2	2.37E-4	5.02E-2	1.11E-4	-2.35E-2	4.84E-2
GWP-f	kg CO2 eq	5.38E-2	5.86E-4	1.46E-4	5.46E-2	2.37E-4	1.64E-2	1.11E-4	-2.45E-2	4.68E-2
GWP-b	kg CO2 eq	-3.32E-2	3.56E-7	-1.54E-6	-3.32E-2	1.44E-7	3.38E-2	9.53E-8	1.04E-3	1.58E-3
GWP-luluc	kg CO2 eq	5.15E-5	2.07E-7	1.49E-7	5.19E-5	8.38E-8	1.63E-6	2.15E-9	-2.38E-5	2.98E-5
ODP	kg CFC11 eq	2.91E-9	1.35E-10	8.26E-12	3.05E-9	5.46E-11	2.81E-10	2.82E-12	-2.18E-9	1.21E-9
AP	mol H+ eq	2.64E-4	3.34E-6	1.47E-6	2.68E-4	1.35E-6	1.21E-5	6.83E-8	-8.24E-5	1.99E-4
EP-fw	kg P eq	1.69E-6	4.82E-9	8.24E-9	1.71E-6	1.95E-9	5.04E-8	9.49E-11	-5.68E-7	1.19E-6
EP-m	kg N eq	4.85E-5	1.19E-6	1.55E-7	4.99E-5	4.83E-7	3.84E-6	4.19E-8	-1.83E-5	3.59E-5
EP-T	mol N eq	5.50E-4	1.32E-5	1.85E-6	5.65E-4	5.32E-6	4.25E-5	2.74E-7	-2.10E-4	4.03E-4
POCP	kg NMVOC eq	2.06E-4	3.76E-6	6.28E-7	2.11E-4	1.52E-6	1.27E-5	1.03E-7	-8.76E-5	1.37E-4
ADP-mm	kg Sb eq	1.20E-6	1.52E-8	1.97E-8	1.24E-6	6.13E-9	4.39E-8	7.08E-11	-1.76E-7	1.11E-6
ADP-f	MJ	1.22E+0	9.00E-3	1.36E-3	1.23E+0	3.64E-3	3.11E-2	2.06E-4	-5.41E-1	7.26E-1
WDP	m3 depriv.	2.60E-2	2.76E-5	5.22E-5	2.61E-2	1.12E-5	5.18E-4	1.90E-6	-1.07E-2	1.59E-2
PM	disease inc.	3.11E-9	5.29E-11	9.08E-12	3.17E-9	2.14E-11	1.81E-10	1.42E-12	-1.15E-9	2.23E-9
IR	kBq U-235 eq	1.68E-3	3.93E-5	1.02E-6	1.72E-3	1.59E-5	1.05E-4	9.42E-7	-4.56E-4	1.38E-3
ETP-fw	CTUe	1.08E+0	7.31E-3	1.21E-2	1.10E+0	2.95E-3	3.94E-2	1.73E-4	-3.72E-1	7.68E-1
HTP-c	CTUh	2.53E-10	2.60E-13	6.17E-13	2.54E-10	1.05E-13	5.61E-12	5.69E-15	-1.56E-11	2.44E-10
HTP-nc	CTUh	1.05E-9	8.71E-12	1.57E-11	1.07E-9	3.52E-12	6.20E-11	1.15E-13	3.94E-10	1.53E-9
SQP	Pt	2.99E+0	7.70E-3	2.24E-3	3.00E+0	3.11E-3	2.59E-2	5.26E-4	-2.54E+0	4.84E-1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	4.79E-1	1.29E-4	2.40E-2	5.03E-1	5.22E-5	1.50E-3	7.51E-6	-3.89E-1	1.15E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	4.79E-1	1.29E-4	2.40E-2	5.03E-1	5.22E-5	1.50E-3	7.51E-6	-3.89E-1	1.15E-1
PENRE	MJ	1.31E+0	9.55E-3	1.44E-3	1.32E+0	3.86E-3	3.31E-2	2.19E-4	-5.84E-1	7.73E-1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	1.31E+0	9.55E-3	1.44E-3	1.32E+0	3.86E-3	3.31E-2	2.19E-4	-5.84E-1	7.73E-1
PET	MJ	1.79E+0	9.68E-3	2.55E-2	1.82E+0	3.91E-3	3.46E-2	2.27E-4	-9.73E-1	8.89E-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	5.69E-4	1.02E-6	1.46E-6	5.72E-4	4.12E-7	1.76E-5	2.50E-7	-1.94E-4	3.96E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	8.21E-7	2.30E-8	2.73E-13	8.44E-7	9.30E-9	5.91E-8	2.56E-10	-7.62E-7	1.51E-7
NHWD	kg	2.00E-2	5.58E-4	1.05E-6	2.06E-2	2.25E-4	1.95E-3	9.01E-4	-2.04E-3	2.16E-2
RWD	kg	1.61E-6	6.12E-8	1.10E-13	1.67E-6	2.47E-8	1.37E-7	1.34E-9	-5.13E-7	1.32E-6
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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