Environmental Product Declaration

According to EN15804+A2 (+indicators A1)

This declaration is for:
EcoCocon Average Wall Panel

Provided by:
Eco Cocon s.r.o.



program operator
Stichting MRPI®
publisher
Stichting MRPI®
www.mrpi.nl

MRPI® registration
1.1.00555.2024
date of first issue
13-6-2024
date of this issue
13-6-2024
expiry date
13-6-2029

COMPANY INFORMATION

EcoCocon s.r.o.
Záhradnícka 60
821 08
Bratislava
+421 905 313 078
Bjørn Kierulf
https://ecococon.eu/

MRPI® REGISTRATION

1.1.00555.2024

DATE OF ISSUE

13-6-2024

EXPIRY DATE

13-6-2029

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Tim Mol, EcoReview. The LCA study has been done by Zoë Tan, Hedgehog Company BV. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®
Kingsfordweg 151
1043 GR
Amsterdam

Ing. L. L. Oosterveen MSc. MBA
Managing Director MRPI

PRODUCT

EcoCocon Average Wall Panel

DECLARED UNIT/FUNCTIONAL UNIT

1 m2

DESCRIPTION OF PRODUCT

The product is a weighted average of the six wall panels made by EcoCocon; Standard, Braced, Sill, Lintel, Column and Inclined. They serve as constructive and insulating elements.

VISUAL PRODUCT



MORE INFORMATION

https://ecococon.eu/

DEMONSTRATION OF VERIFICATION
CEN standard EN15804 serves as the core PCR(a)
Independent verification of the declaration an data according to EN15804+A2 (+indicators A1) internal: external: x
Third party verifier: Tim Mol, EcoReview
[a] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

This study concerns an average wall panel from an EcoCocon construction. The constructions typically consist of six types of EcoCocon panel, which are always 40 cm deep. The exact dimensions of the EcoCocon panels vary. The LCA studies the panel types Standard, Braced, Sill, Lintel, Column and Inclined. The products are produced in Kybartai, Lithuania by EcoCocon UAB. It consists of a wooden frame with straw filling. The wall panels serve as constructive and insulating elements. Its reference service life is 75 years. The average panel is calculated based on the production data of 2023.

Table 3 lists the material inputs for 1 m2 panel. This data is obtained from EcoCocon UAB and based on one year.

Average product dimensions	Width (m)	Height (m)	Production share
Standard panel	0,7	2,6	40%
Braced panel	0,8	2,6	34,60%
Sil panel	1,6	0,85	4,90%
Lintel panel	1,6	0,6	4,90%
Column panel	0,45	2,5	3,10%
Inclined panel	0,7	1,4	12,50%

Material	Standard (kg/m2)	Braced (kg/m2)	Sill (kg/m2)	Lintel (kg/m2)	Column (kg/m2)	Inclined (kg/m2)	Average (kg/m2)
Pine wood (420 kg/m3)	16,676	19,809	20,184	27,064	25,182	20,46	19,182
Plywood (700 kg/m3)	3,377	2,687	12,802	15,574	20,652	6,009	5,07
Straw (110 kg/m3)	47,21	47,581	44,133	41,252	41,431	46,347	46,605
Woodfibre board (280 kg/m3)	0,348	0,505	-	-	-	0,353	0,358
Screws	0,64	0,914	0,884	1,526	1,023	0,808	0,823
Total weight excl. production loss	65,038	68,142	74,336	81,427	84,14	70,5	72,038
Packaging: Wooden sticks	1,3	1,3	1,3	1,3	1,3	1,3	1,3
Total weight incl. packaging	66,338	69,442	75,636	82,727	85,44	71,8	73,338

Component (> 1%)	(%)
Pine wood (420 kg/m3)	19,182
Plywood (700 kg/m3)	5,07
Straw (110 kg/m3)	46,605
Woodfibre board (280 kg/m3)	0,358
Screws	0,823
Packaging: Wooden sticks	1,3

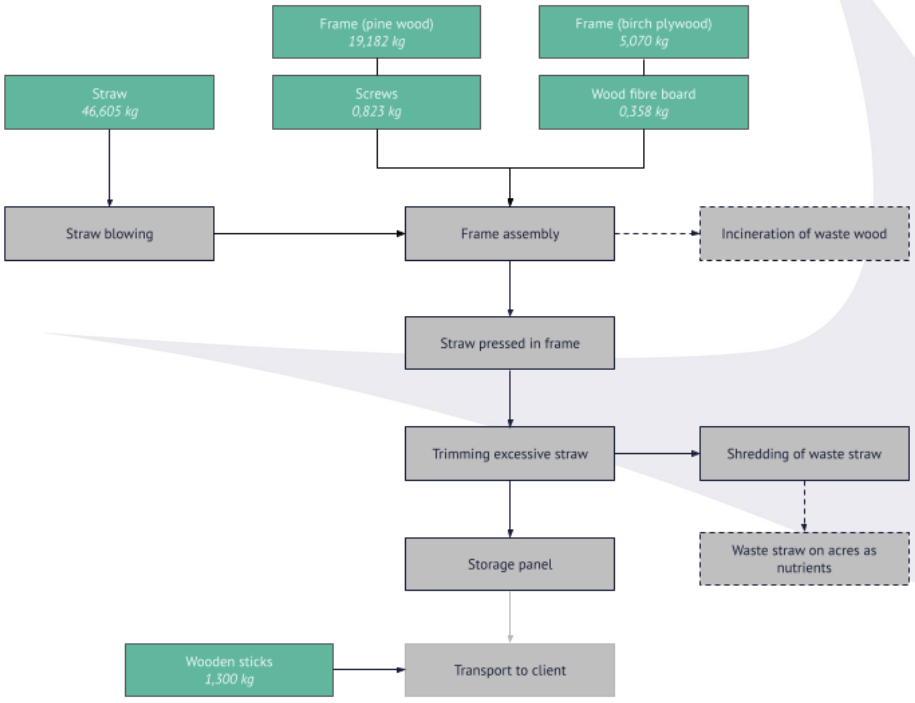
SCOPE AND TYPE

The panels are produced in Lithuania and distributed throughout Europe. The transportation to the construction site (A4) is given per 100 km. The end-of-life scenario is based on the Dutch default scenario's. Ecoinvent 3.6 is used as background database in the LCA software Mobius 1.0.224. The EPD describes a representative panel, based on six panel types produced at one production site.

Product Stage			Construction Process Stage		User Stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery – Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	ND	ND	X	X	X	X	X
X= Modules Assessed ND= Not Declared																

REPRESENTATIVENESS

The average panel is representative for >98% of projects sold during 2023 (based on m2).



ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	3,95 E-03	4,78 E-05	1,32 E-05	4,01 E-03	2,39 E-05	6,24 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,14 E-07	2,95 E-06	4,62 E-06	3,85 E-07	-1,08 E-03
ADPF	MJ	1,79 E+02	2,86 E+01	2,82 E+01	2,36 E+02	1,43 E+01	2,33 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	4,53 E+00	1,31 E+01	6,99 E+00	8,60 E-01	-5,87 E+01
GWP	kg CO2 eq.	1,33 E+01	1,87 E+00	1,93 E+00	1,71 E+01	9,35 E-01	1,63 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,30 E-01	8,62 E-01	5,83 E-01	2,56 E-01	-4,69 E+00
ODP	Kg CFC11 eq.	1,24 E-06	3,32 E-07	2,83 E-07	1,86 E-06	1,66 E-07	1,98 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,70 E-08	1,45 E-07	6,68 E-08	8,91 E-09	-1,13 E-06
POCP	Kg ethene eq.	1,38 E-02	1,13 E-03	8,40 E-04	1,58 E-02	5,64 E-04	1,17 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,35 E-04	5,19 E-04	2,51 E-03	8,01 E-05	-1,38 E-02
AP	kg SO2 eq.	8,93 E-02	8,23 E-03	9,54 E-03	1,07 E-01	4,11 E-03	8,79 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,48 E-03	3,59 E-03	1,33 E-02	2,37 E-04	-8,12 E-02
EP	kg (PO4) 3- eq.	3,74 E-02	1,62 E-03	1,09 E-03	4,01 E-02	8,07 E-04	2,06 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,64 E-04	7,18 E-04	3,41 E-03	9,77 E-05	-2,62 E-02

Toxicity indicators for Dutch market

HTP	kg DCB-Eq	1,13 E+01	7,88 E-01	5,57 E-01	1,26 E+01	3,93 E-01	1,45 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,22 E-01	3,47 E-01	1,58 E+00	2,22 E-02	-7,27 E+00
FAETP	kg DCB-Eq	6,55 E-01	2,30 E-02	1,44 E-02	6,92 E-01	1,15 E-02	3,50 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,70 E-03	1,10 E-02	1,26 E-02	3,61 E-04	-1,40 E-01
MAETP	kg DCB-Eq	4,84 E+02	8,27 E+01	4,84 E+01	6,15 E+02	4,13 E+01	5,77 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,91 E+00	3,82 E+01	3,33 E+01	1,48 E+00	-1,96 E+02
TETP	kg DCB-Eq	2,61 E-01	2,78 E-03	1,69 E-02	2,81 E-01	1,39 E-03	1,64 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,06 E-04	1,14 E-03	1,69 E-03	7,20 E-05	-7,49 E-03
ECI	euro	€ 2,51	€ 0,23	€ 0,20	€ 2,94	€ 0,11	€ 0,28	€ 0,00	€ 0,00	€ 0,00	€ 0,00	€ 0,00	ND	ND	€ 0,04	€ 0,10	€ 0,26	€ 0,02	€ -1,51
ADPF	kg Sb eq.	8,62 E-02	1,38 E-02	1,35 E-02	1,14 E-01	6,87 E-03	1,12 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,18 E-03	6,29 E-03	3,36 E-03	4,14 E-04	-2,83 E-02

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources expressed in [kg Sb-eq.]

ENVIRONMENT IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	-1,05 E+02	1,89 E+00	1,87 E+00	-1,01 E+02	9,43 E-01	3,87 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,33 E-01	8,70 E-01	1,12 E+02	6,16 E+00	-4,85 E+00
GWP-fossil	kg CO2 eq.	1,37 E+01	1,89 E+00	1,85 E+00	1,74 E+01	9,42 E-01	1,64 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,33 E-01	8,64 E-01	5,93 E-01	3,67 E-02	-4,80 E+00
GWP-biogenic	kg CO2 eq.	-1,19 E+02	0,00 E+00	0,00 E+00	-1,19 E+02	0,00 E+00	2,22 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	1,11 E+02	6,12 E+00	0,00 E+00
GWP-luluc)	kg CO2 eq.	6,50 E-02	6,92 E-04	2,08 E-02	8,65 E-02	3,45 E-04	3,04 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,65 E-05	6,11 E-03	2,28 E-04	1,77 E-05	-4,42 E-02
ODP	kg CFC11 eq.	1,38 E-06	4,17 E-07	2,87 E-07	2,08 E-06	2,08 E-07	2,40 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	7,18 E-08	1,83 E-07	7,35 E-08	1,11 E-08	-1,14 E-06
AP	mol H+ eq.	1,31 E-01	1,09 E-02	1,16 E-02	1,54 E-01	5,47 E-03	1,22 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,48 E-03	4,76 E-03	1,95 E-02	3,12 E-04	-1,26 E-01
EP-freshwater	kg P eq.	3,19 E-03	1,90 E-05	5,91 E-05	3,27 E-03	9,51 E-06	1,24 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,27 E-06	1,00 E-05	1,45 E-05	7,52 E-07	-4,34 E-04
EP-marine	kg N eq.	4,67 E-02	3,86 E-03	2,00 E-03	5,26 E-02	1,93 E-03	3,77 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,53 E-03	1,69 E-03	8,98 E-03	2,02 E-04	-3,66 E-02
EP-terrestrial	mol N eq.	4,66 E-01	4,25 E-02	2,38 E-02	5,32 E-01	2,12 E-02	4,38 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,68 E-02	1,83 E-02	1,03 E-01	1,16 E-03	-5,96 E-01
POCP	kg NMVOC eq.	7,49 E-02	1,21 E-02	6,44 E-03	9,34 E-02	6,06 E-03	9,70 E-03	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	4,63 E-03	5,29 E-03	2,69 E-02	4,12 E-04	-1,09 E-01
ADP-minerals & metals	kg Sb eq.	3,94 E-03	4,78 E-05	1,32 E-05	4,00 E-03	2,39 E-05	6,24 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,14 E-07	2,95 E-06	4,62 E-06	3,85 E-07	-1,08 E-03
ADP-fossil	MJ, net calorific value	1,71 E+02	2,85 E+01	3,46 E+01	2,34 E+02	1,42 E+01	2,29 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	4,59 E+00	1,30 E+01	6,31 E+00	8,52 E-01	-5,49 E+01
WDP	m3 world eq. Deprived	5,19 E+01	1,02 E-01	3,33 E-01	5,23 E+01	5,08 E-02	1,78 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	6,23 E-03	5,11 E-02	2,05 E-01	3,65 E-02	-6,32 E-01

GWP-total = Global Warming Potential total
GWP-fossil = Global Warming Potential fossil fuels
GWP-biogenic = Global Warming Potential biogenic
GWP-luluc = Global Warming Potential land use and land use change
ODP = Depletion potential of the stratospheric ozone layer
AP = Acidification Potential, Accumulated Exceedence
EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment
EP-terrestrial = Eutrophication Potential, Accumulated Exceedence
POCP = Formation potential of tropospheric ozone photochemical oxidants
ADP-minerals&metals = Abiotic Depletion Potential for non-fossil resources [2]
ADP-fossil = Abiotic Depletion for fossil resources potential [2]
WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

Disclaimer [2]
- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

ENVIRONMENT IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	3,50 E-06	1,69 E-07	9,72 E-08	3,77 E-06	8,46 E-08	2,44 E-07	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	9,20 E-08	7,64 E-08	1,58 E-07	5,91 E-09	-1,78 E-06
IRP	kBq U235 eq.	7,11 E-01	1,19 E-01	4,02 E-01	1,23 E+00	5,96 E-02	1,04 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,96 E-02	5,44 E-02	1,79 E-02	3,33 E-03	-2,01 E-01
ETP-fw	CTUe	6,13 E+02	2,54 E+01	2,79 E+01	6,66 E+02	1,27 E+01	1,31 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,77 E+00	1,16 E+01	1,57 E+01	8,54 E-01	-1,21 E+03
HTP-c	CTUh	5,50 E-08	8,23 E-10	1,80 E-09	5,76 E-08	4,11 E-10	4,70 E-09	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	9,66 E-11	4,16 E-10	1,81 E-08	2,35 E-11	-1,40 E-08
HTP-nc	CTUh	6,22 E-07	2,78 E-08	2,29 E-08	6,73 E-07	1,39 E-08	5,37 E-08	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,37 E-09	1,22 E-08	5,90 E-08	9,14 E-10	-3,58 E-07
SQP	----	6,57 E+03	2,47 E+01	3,20 E+01	6,63 E+03	1,23 E+01	5,96 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	6,26 E-01	1,15 E+01	3,37 E+00	2,15 E+00	-4,96 E+03

PM = Potential incidence of disease due to PM emissions
IRP = Potential Human exposure efficiency relative to U235 [1]
ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
HTP-c = Potential Comparative Toxic Unit for humans [2]
HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
SQP = Potential soil quality index [2]

Disclaimer [1]
- This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste.

Disclaimer [2]
- The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	8,94 E-04	7,21 E-05	3,10 E-05	9,97 E-04	3,60 E-05	1,33 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	1,25 E-05	3,40 E-05	1,68 E-05	1,31 E-06	-3,95 E-04
NHWD	kg	3,13 E+00	1,81 E+00	1,30 E+00	6,24 E+00	9,02 E-01	8,29 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	5,46 E-03	9,01 E-01	4,12 E-01	3,41 E+00	-1,89 E+00
RWD	kg	7,27 E-04	1,87 E-04	2,26 E-04	1,14 E-03	9,33 E-05	1,25 E-04	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	3,18 E-05	8,56 E-05	2,04 E-05	5,06 E-06	-3,08 E-04
CRU	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	2,68 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	9,50 E-01	0,00 E+00	0,00 E+00
MFR	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	9,90 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	3,40 E+00	0,00 E+00	0,00 E+00
MER	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
EEE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	4,87 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	1,60 E+02	0,00 E+00	0,00 E+00
ETE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	8,39 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	2,76 E+02	0,00 E+00	0,00 E+00

HWD = Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
MFR = Materials for recycling
EEE = Exported Electrical Energy
NHWD = Non Hazardous Waste Disposed
CRU = Components for reuse
MER = Materials for energy recovery
ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	1,11 E+03	3,56 E-01	1,73 E+01	1,13 E+03	1,78 E-01	4,04 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,63 E-02	2,24 E-01	3,51 E-01	1,50 E-02	-1,02 E+03
PENRE	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRM	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	1,83 E+02	3,02 E+01	3,68 E+01	2,50 E+02	1,51 E+01	2,43 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	4,87 E+00	1,38 E+01	6,78 E+00	9,05 E-01	-5,82 E+01
SM	kg	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m3	1,34 E+00	3,47 E-03	2,51 E-02	1,37 E+00	1,73 E-03	4,85 E-02	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	2,44 E-04	1,73 E-03	3,01 E-02	8,89 E-04	-1,80 E-02

PERE = Use of renewable energy excluding renewable primary energy resources
PERM = Use of renewable energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total use of non-renewable primary energy resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NRSF = Use of non-renewable secondary fuels
FW = Use of net fresh water

BIOGEEN CARBON CONTENT per functional unit or declared unit (A1 / A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	Kg C	3,15 E+01	0,00 E+00	0,00 E+00	3,15 E+01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
BCCpa	kg C	6,00 E-01	0,00 E+00	0,00 E+00	6,00 E-01	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

CALCULATION RULES

Producer specific data is used when possible. These data are recent (2022), complete and based on one year averaged data. The technological coverage and geographical coverage reflect the physical reality of the product. Furthermore, the economic flows approach reality as closely as possible within practically feasible limits for the LCA practitioner.
The time representativeness of the used references for generic data is accurate, since the difference between the reference year (2022) and the time period for which the data is representative (2019) is <3 years.
The geographical coverage of this study is representative of the geographical scope of the production process. Where possible, specific country specific references are selected. Where this is not possible, region-specific references are selected. The quality level ranges from good to very good.

The technological coverage of this study is representative as specific business, product, and process data of the year 2022 are used to model the product system under study. Therefore, the data quality is very good.

The percentage of allocation is obtained by calculating what share of the total revenue is generated by straw. EcoCocons straw supplier delivered the price of straw and wheat. This table shows the prices and the calculations for economical allocation. The wheat price is in line with the average price of the EU in September 2021. The Ecoinvent reference for 'wheat production, straw [RoW]' already contains an allocation factor for straw (5,1%). It was corrected based on this supplier specific allocation, to 10,2%.

Material	Price (€/ton)	Production (ton)	Revenue	Allocation	Allocation (%)
Straw	90	300	27000	0,102	10,167
Wheat	250	954,3	238575	0,898	89,833

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

EcoCocon UAB supplied the data for energy usage during production. The data is based on the average production of all panel types at EcoCocons facility. Of the total energy use of the facility, 90% was allocated to the panels (all types). It was assumed that the required energy does not differ significantly between panel types Standard, Braced, Sill, Lintel, Column and Inclined. Some production waste occurs during the production of the panel. For straw, this is 2,5% of the material used, while for wood and plywood this is 5%.

Transportation to the construction site is given per 100 km.
The installation of the panels required additional inputs, namely screws, diesel and electricity. An additional 3% of construction losses are calculated.

The materials are processed according to the standard values of the NMD Determination Method.

Production loss	Landfill	Incineration	Recycling	Reuse
Pine wood	1%	99%		
Plywood	1%	99%		
Straw	100%			

Additional installation inputs	Unit	Per average panel
Screws	kg	0,12
Diesel crane	hour	0,0038
Electricity for drill	kWh	0,00167

Production loss	Landfill	Incineration	Recycling	Reuse
Pine wood	5%	80%	10%	5%
Plywood	5%	85%	10%	0%
Woodfibre board	5%	85%	10%	0%
Straw	5%	95%	0%	0%
Screws	1%	0%	99%	0%

DECLARATION OF SVHC

The EcoCocon panels do not contain any SVHC. The products comply with commission delegated Regulation (EU) No. 2021/2139 (EU Taxonomy), sections 7.1, 7.2 and Appendix C, regarding DNSH criteria for 'pollution prevention and control'.

REFERENCES

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REMARKS

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