

Result summary

Compostboard Pepper plant

Rik Makes BV

Calculation number:	ReTHiNK-87268
Generation on:	31-10-2024
Issue date:	31-10-2024
Valid until:	31-10-2029
Status:	verified

R<THiNK



1 General information

1.1 PRODUCT

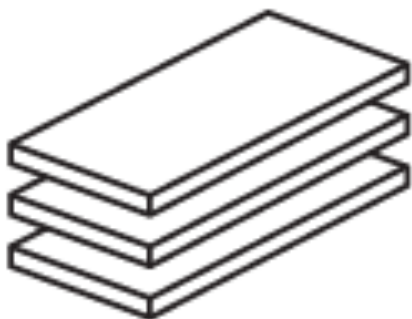
Compostboard Pepper plant

1.2 VALIDITY

Issue date: 31-10-2024

Valid until: 31-10-2029

1.3 OWNER OF THE DECLARATION



Manufacturer: Rik Makes BV

Address: Eikenlaan 45, 5757 PS Liessel

E-mail: info@compostboard.bio

Website: www.compostboard.bio

Production location: Productie locatie Liessel

Address production location: Eikenlaan 45, 5757 PS Liessel

1.4 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804:2012+A2:2019 serves as the core PCR.

Internal External

Gert-Jan Vroege, Eco Intelligence

1.5 PRODUCT CATEGORY RULES

NMD Determination method Environmental performance Construction works v1.1 March 2022

1.6 FUNCTIONAL UNIT

1m² sheet material

1m² biobased sheet material made of agricultural waste material used as a finishing of interior walls.

After its lifetime, compostboard is compostable again.
Fasteners are included in the LCA.

Reference unit: square meter (m²)

1 General information

1.7 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	m2
Weight per reference unit	8.562	kg
Conversion factor to 1 kg	0.116788	m2

1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D EPD. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

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	ND	ND	X	X	X	X	X	X	X

The modules of the EN15804 contain the following:

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use

Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries
Module B4 = Replacement	

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804+A2. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2 (5.3 Comparability of EPD for construction products) and ISO 14025 (6.7.2 Requirements for comparability).

2 Product

2.1 PRODUCT DESCRIPTION

Compostboard is an innovative and sustainable biobased sheet material designed for interior applications such as wall cladding and furniture finishes.

Made from agricultural by-products like plant fibers from pepper plants, hemp, and flax, Compostboard is both environmentally friendly and functional. These fibers are bonded using an adhesive that is safe for indoor air quality, ensuring a healthy environment for both the processor and the end user.

Compostboard not only regulates humidity and is VOC-free but is also rain-compostable, contributing to the nourishment of future generations of plants and people through the soil. The material is typically produced in 18mm-thick elements and has standard dimensions of 60x260x1.8cm. It was developed through extensive research into Dutch soil, with the aim of creating a product that enhances soil health rather than harming the environment.

At the end of its life, Compostboard can be shredded and spread over agricultural land as compost, thus closing the loop in a truly circular process. This approach transforms our use of materials from toxic to fertile, addressing several environmental challenges such as carbon sequestration, waste reduction, and soil enrichment.

2.2 DESCRIPTION PRODUCTION PROCESS

The production of Compostboard begins with the cultivation, harvesting, and shredding of crops. Hemp, known for its toughness, is harvested using a tractor. After harvesting, the

hemp is left on the ground for several months before being shredded. A splitter is then used to separate the textile fibers from the wood fibers. These fibers typically measure about 2 cm in length and 5 mm in thickness. The leftover material from the hemp harvest, after the textile fibers have been extracted, serves as the primary raw material for producing Compostboard.

Flax, being less resilient than hemp, requires a simpler harvesting process. The fibers are loosened by beating, and flax is primarily used for products like seeds, oil, butter, and linen. After the valuable fibers are extracted, a small, straw-like fiber remains, which generally lacks market value and is often used as bedding in cow stalls.

Since the hemp and flax fibers utilized in Compostboard production are waste by-products, the environmental impacts of crop cultivation, land use, fertilizers, and harvesting are attributed to the textile industry.

Compostable waste from pepper plants is also used in the product.

In the manufacturing process, these fibers are brought into the facility and mixed with a sugar-based glue, which is currently sourced as a waste product from the food industry in the Netherlands. The fibers and glue are mixed and spread after which it's spread and dried. After drying, the Compostboard is cut to the required size.

2.3 CONSTRUCTION DESCRIPTION

Compost board is mounted as an interior wall cladding with a handdrill. The impact of handtools is so small that it is not included in the scope of this LCA.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
AP	mol H+ eqv.	1.05E-3	1.40E-2	1.11E-2	2.61E-2	1.36E-2	1.89E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.01E-3	2.67E-3	0.00E+0	-1.02E-2	3.50E-2
GWP-total	kg CO2 eqv.	4.10E-1	2.48E+0	5.12E+0	8.01E+0	2.41E+0	7.39E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.73E-1	1.26E+1	0.00E+0	-3.29E-1	2.36E+1
GWP-b	kg CO2 eqv.	-7.62E+0	2.80E-3	4.91E-2	-7.57E+0	2.73E-3	1.66E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.00E-5	7.56E+0	0.00E+0	1.29E-4	6.82E-4
GWP-f	kg CO2 eqv.	4.05E-1	2.47E+0	4.69E+0	7.57E+0	2.41E+0	3.50E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.73E-1	7.53E-2	0.00E+0	-3.25E-1	1.03E+1
GWP-luluc	kg CO2 eqv.	1.63E-4	1.56E-3	1.31E-3	3.03E-3	1.52E-3	3.17E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.35E-5	2.03E-5	0.00E+0	-3.59E-3	1.36E-3
EP-m	kg N eqv.	2.14E-4	4.08E-3	2.40E-3	6.69E-3	3.97E-3	4.32E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.54E-4	1.24E-3	0.00E+0	-2.99E-3	9.70E-3
EP-fw	kg P eq	2.41E-5	4.28E-5	2.64E-4	3.31E-4	4.16E-5	1.44E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.75E-6	1.53E-6	0.00E+0	-3.25E-5	3.58E-4
EP-T	mol N eqv.	2.61E-3	4.56E-2	2.89E-2	7.71E-2	4.44E-2	6.32E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.91E-3	1.43E-2	0.00E+0	-4.91E-2	9.69E-2
ODP	kg CFC 11 eqv.	3.67E-8	4.86E-7	2.38E-7	7.60E-7	4.73E-7	4.20E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.83E-8	9.59E-9	0.00E+0	-9.18E-8	1.23E-6
POCP	kg NMVOC eqv.	6.51E-4	1.47E-2	7.37E-3	2.28E-2	1.43E-2	1.47E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.12E-3	3.73E-3	0.00E+0	-8.65E-3	3.48E-2
ADP-f	MJ	5.45E+0	3.54E+1	6.17E+1	1.03E+2	3.45E+1	4.72E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.61E+0	7.77E-1	0.00E+0	-3.85E+0	1.41E+2

AP=Acidification (AP) | GWP-total=Global warming potential (GWP-total) | GWP-b=Global warming potential - Biogenic (GWP-b) | GWP-f=Global warming potential - Fossil (GWP-f) | GWP-luluc=Global warming potential - Land use and land use change (GWP-luluc) | EP-m=Eutrophication marine (EP-m) | EP-fw=Eutrophication, freshwater (EP-fw) | EP-T=Eutrophication, terrestrial (EP-T) | ODP=Ozone depletion (ODP) | POCP=Photochemical ozone formation - human health (POCP) | ADP-f=Resource use, fossils (ADP-f) | ADP-mm=Resource use, minerals and metals (ADP-mm) | WDP=Water use (WDP)

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
ADP-mm	kg Sb-eqv.	2.28E-6	5.40E-5	2.04E-5	7.66E-5	5.25E-5	6.08E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.39E-6	4.57E-7	0.00E+0	-4.61E-6	1.90E-4
	m3																	
WDP	world eqv.	7.93E-1	1.65E-1	8.69E-1	1.83E+0	1.60E-1	8.05E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.35E-3	2.74E-2	0.00E+0	-3.59E-2	2.07E+0

AP=Acidification (AP) | **GWP-total**=Global warming potential (GWP-total) | **GWP-b**=Global warming potential - Biogenic (GWP-b) | **GWP-f**=Global warming potential - Fossil (GWP-f) | **GWP-luluc**=Global warming potential - Land use and land use change (GWP-luluc) | **EP-m**=Eutrophication marine (EP-m) | **EP-fw**=Eutrophication, freshwater (EP-fw) | **EP-T**=Eutrophication, terrestrial (EP-T) | **ODP**=Ozone depletion (ODP) | **POCP**=Photochemical ozone formation - human health (POCP) | **ADP-f**=Resource use, fossils (ADP-f) | **ADP-mm**=Resource use, minerals and metals (ADP-mm) | **WDP**=Water use (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	5.67E+0	4.21E+1	6.01E+1	1.08E+2	4.10E+1	6.75E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.33E+0	1.94E+0	0.00E+0	-9.94E+1	6.05E+1
PM	disease incidence	3.75E-9	2.39E-7	3.99E-8	2.83E-7	2.33E-7	2.28E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.56E-8	2.16E-8	0.00E+0	-1.39E-7	4.37E-7
HTP-c	CTUh	1.15E-10	3.73E-9	1.22E-9	5.07E-9	3.63E-9	6.42E-10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.56E-11	2.53E-9	0.00E+0	-1.14E-9	1.08E-8
HTP-nc	CTUh	3.59E-9	4.94E-8	3.53E-8	8.82E-8	4.81E-8	8.31E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.55E-9	7.98E-9	0.00E+0	-3.88E-8	1.16E-7
IR	kBq U235 eqv.	1.39E-2	1.50E-1	1.30E-1	2.94E-1	1.46E-1	1.51E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.10E-2	1.97E-3	0.00E+0	-1.56E-2	4.53E-1
SQP	Pt	1.16E+0	1.65E+1	1.73E+0	1.94E+1	1.60E+1	1.66E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.27E+0	2.51E-1	0.00E+0	-3.89E+2	-3.49E+2

ETP-fw=Ecotoxicity, freshwater (ETP-fw) | **PM**=Particulate Matter (PM) | **HTP-c**=Human toxicity, cancer (HTP-c) | **HTP-nc**=Human toxicity, non-cancer (HTP-nc) | **IR**=Ionising radiation, human health (IR) | **SQP**=Land use (SQP)

3 Results

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
ILCD type / level 3	Potential Human exposure efficiency relative to U235 (IRP)	1
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
Potential Soil quality index (SQP)	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 disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

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.

3 Results

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A1

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
ADPE	Kg Sb	2.28E-6	5.40E-5	2.04E-5	7.66E-5	5.25E-5	6.08E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.39E-6	4.57E-7	0.00E+0	-4.61E-6	1.90E-4
	Kg																	
GWP	CO2	4.00E-1	2.43E+0	4.63E+0	7.46E+0	2.37E+0	3.45E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.72E-1	7.41E-2	0.00E+0	-3.20E-1	1.01E+1
	Equiv.																	
	Kg																	
ODP	CFC-11	3.75E-8	3.90E-7	2.36E-7	6.64E-7	3.80E-7	3.58E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.05E-8	8.73E-9	0.00E+0	-9.04E-8	1.03E-6
	Equiv.																	
	Kg																	
POCP	Ethene	6.56E-5	2.25E-3	7.33E-4	3.05E-3	2.19E-3	2.17E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.04E-4	3.48E-4	0.00E+0	-1.03E-3	4.87E-3
	Equiv.																	
	Kg																	
AP	SO2	8.36E-4	1.08E-2	8.77E-3	2.04E-2	1.05E-2	1.38E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.56E-4	1.81E-3	0.00E+0	-6.52E-3	2.84E-2
	Equiv.																	
	Kg																	
EP	PO43-	1.62E-4	1.83E-3	1.77E-3	3.76E-3	1.78E-3	2.58E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.48E-4	4.71E-4	0.00E+0	-2.15E-3	4.27E-3
	Equiv.																	

ADPE=Depletion of abiotic resources-elements | GWP=Global warming | ODP=Ozone layer depletion | POCP=Photochemical oxidants creation | AP=Acidification of soil and water | EP=Eutrophication

NATIONAL ANNEX NMD

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
ADPF		3.00E-3	1.72E-2	3.48E-2	5.50E-2	1.67E-2	2.49E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.26E-3	4.18E-4	0.00E+0	-1.88E-3	7.41E-2

ADPF=Depletion of abiotic resources-fossil fuels | HTP=Human toxicity | FAETP=Ecotoxicity, fresh water | MAETP=Ecotoxicity, marine water (MAETP) | TETP=Ecotoxicity, terrestrial

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total	
	Kg Sb																		
HTP	kg DB	1.4	5.31E-2	8.84E-1	5.33E-1	1.47E+0	8.61E-1	1.85E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.24E-2	2.17E-1	0.00E+0	-5.68E-1	2.24E+0
FAETP	kg DB	1.4	1.37E-3	2.20E-2	1.46E-2	3.80E-2	2.14E-2	3.05E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.11E-3	1.67E-3	0.00E+0	-1.17E-2	5.46E-2
MAETP	kg DB	1.4	5.75E+0	7.65E+1	6.20E+1	1.44E+2	7.45E+1	8.56E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.60E+0	4.21E+0	0.00E+0	-1.57E+1	2.23E+2
TETP	kg DB	1.4	2.03E-3	4.16E-3	2.33E-2	2.95E-2	4.05E-3	1.86E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.56E-4	2.16E-4	0.00E+0	-2.99E-3	3.29E-2

ADPF=Depletion of abiotic resources-fossil fuels | HTP=Human toxicity | FAETP=Ecotoxicity, fresh water | MAETP=Ecotoxicity, marine water (MAETP) | TETP=Ecotoxicity, terrestrial

3.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total	
PERE	MJ	-7.27E+1	8.27E-1	2.00E+0	-6.99E+1	8.06E-1	-2.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.27E-2	3.19E-2	0.00E+0	-8.14E+1	-1.52E+2
PERM	MJ	7.27E+1	0.00E+0	2.18E+0	7.49E+1	0.00E+0	2.25E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.71E+1

PERE=renewable primary energy ex. raw materials | PERM=renewable primary energy used as raw materials | PERT=renewable primary energy total | PENRE=non-renewable primary energy ex. raw materials | PENRM=non-renewable primary energy used as raw materials | PENRT=non-renewable primary energy total | SM=use of secondary material | RSF=use of renewable secondary fuels | NRSF=use of non-renewable secondary fuels | FW=use of net fresh water

3 Results

Abbr.	Unit	A1	A2	A3	A1- A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
PERT	MJ	6.11E-1	8.27E-1	4.20E+0	5.63E+0	8.06E-1	3.08E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.27E-2	3.46E-2	0.00E+0	-8.14E+1	-7.46E+1
PENRE	MJ	0.00E+0	3.76E+1	6.59E+1	1.04E+2	3.66E+1	4.42E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.78E+0	1.70E+0	0.00E+0	-4.09E+0	1.45E+2
PENRM	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PENRT	MJ	5.82E+0	3.76E+1	6.60E+1	1.09E+2	3.66E+1	5.02E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.78E+0	8.37E-1	0.00E+0	-4.09E+0	1.51E+2
SM	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	M3	2.09E-2	6.01E-3	4.68E-2	7.37E-2	5.86E-3	3.09E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.18E-4	4.16E-3	0.00E+0	-1.04E-3	8.60E-2

PERE=renewable primary energy ex. raw materials | **PERM**=renewable primary energy used as raw materials | **PERT**=renewable primary energy total | **PENRE**=non-renewable primary energy ex. raw materials | **PENRM**=non-renewable primary energy used as raw materials | **PENRT**=non-renewable primary energy total | **SM**=use of secondary material | **RSF**=use of renewable secondary fuels | **NRSF**=use of non-renewable secondary fuels | **FW**=use of net fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1- A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total
HWD	Kg	5.29E-6	6.72E-4	6.68E-5	7.44E-4	6.54E-4	5.25E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.62E-6	2.19E-6	0.00E+0	-1.48E-5	1.44E-3
NHWD	Kg	1.93E-2	1.04E+0	2.13E-1	1.27E+0	1.01E+0	9.22E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.66E-1	5.60E-2	0.00E+0	-1.47E-1	2.45E+0
RWD	Kg	1.33E-5	2.24E-4	1.32E-4	3.70E-4	2.19E-4	1.98E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.72E-5	2.35E-6	0.00E+0	-2.41E-5	6.04E-4

HWD=hazardous waste disposed | **NHWD**=non hazardous waste disposed | **RWD**=radioactive waste disposed

3 Results

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbr.	Unit	A1	A2	A3	A1- A3	A4	A5	B1	B2	B3	B6	B7	C1	C2	C3	C4	D	Total	
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.73E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.73E-2	
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	
EE	MJ	0.00E+0	0.00E+0	-1.07E+0	-1.07E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-3.67E+1	-3.78E+1
EET	MJ	0.00E+0	0.00E+0	-6.76E-1	-6.76E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-2.32E+1	-2.39E+1
EEE	MJ	0.00E+0	0.00E+0	-3.92E-1	-3.92E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.35E+1	-1.39E+1

CRU=Components for re-use | MFR=Materials for recycling | MER=Materials for energy recovery | EE=Exported energy | EET=Exported Energy Thermic | EEE=Exported Energy Electric

3 Results

3.3 INFORMATION ON BIOGENIC CARBON CONTENT PER SQUARE METER

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per square meter:

Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	2.099	kg C
Biogenic carbon content in accompanying packaging	0	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic Carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

Uptake Biogenic Carbon dioxide	Amount	Unit
product	7.624	kg CO2 (biogenic)

3 Results

3.4 ENVIRONMENTAL COST INDICATOR NL PER SQUARE METER

Using the environmental cost indicator (ECI) method, which is presented in the NMD Determination Method (2020), the results are aggregated to the single-point score. The ECI is a relevant valuation method, especially in the Dutch construction sector. In the Netherlands, it is a prerequisite for public tenders. The aim of the indicator is to show the shadow price for environmental impacts of a product or project. The application of single-point scores is an additional assessment tool for eco-balance results. However, it must be pointed out that weightings are always based on a value maintenance and not on a scientific basis (EN 14040). The ECI results are shown in the following table.

Module EN15804	ECI NL	Share in total (%)
A1 Raw Materials Supply	€ 0.03	3,4 %
A2 Transport	€ 0.28	30,5 %
A3 Manufacturing	€ 0.35	38,2 %
A4 Transport from the gate to the site	€ 0.27	29,7 %
A5 Construction - Installation process	€ 0.04	4,8 %
B1 Use	€ 0.00	0,0 %
B2 Maintenance	€ 0.00	0,0 %
B3 Repair	€ 0.00	0,0 %
B6 Operational Energy Use	€ 0.00	0,0 %
B7 Operational Water Use	€ 0.00	0,0 %
C1 De-construction / demolition	€ 0.00	0,0 %
C2 Transport	€ 0.02	2,3 %
C3 Waste processing	€ 0.04	4,0 %
C4 Disposal	€ 0.00	0,0 %
D Benefits and loads beyond the product system boundary	€ -0.12	-12,9 %
ECI NL per functional unit	€ 0.91	

4 Contact information

Publisher	Operator	Owner of declaration
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