Result summary

BiCo Skin

De Groot en Visser

Calculation number:	ReTHiNK-39215
Generation on:	09-06-2023
Issue date:	09-06-2023
Valid until:	09-06-2028
Status:	verified

R<THiNK

powered by nibe

1 General information

1.1 PRODUCT

BiCo Skin

1.2 VALIDITY

Issue date 09-06-2023

Valid until: 09-06-2028

1.3 OWNER OF THE DECLARATION

DE GROOT & VISSER BUILDING HUMAN ENERGY

ramen | gevels | zonwering | solar gv.nl

Manufacturer: De Groot en Visser

Address: Marconiweg 1, 4207 HH Gorinchem

E-mail: info@gv.nl

Website: www.degrootenvisser.nl

Production location: De Groot & Visser

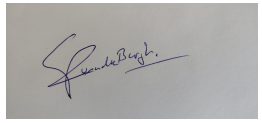
Address production location: Kolkweg 6, 8243 PN Lelystad

1.4 VERIFICATION OF THE DECLARATION

CEN standard EN 15804:2012+A2:2019 serves as the core PCR. In compliance with ISO 14040:2006 and 14044:2006.

Independent verification of the declaration according to EN ISO 14025:2011-10.

☐ Internal ☑ External



Fred van der Burgh, Agrodome

1.5 THIS DECLARATION IS BASED ON THE PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

Aluminum element facades (BiCo Skin)

Declared unit: square meter (m2)

Prefab element facade BicoSkin is based on a common size; 3200 x 3600 mm (hxw), of which 40% is open. The thickness of the standard element is 172mm.
The quantities have been converted to 1 m². Mounting anchors, finishing layers and facade openings (frames, glazing, adjustable frames, hinges and locks, sills) are not included.

1.7 CONVERSION FACTORS

Description	Value	Unit
Declared unit	1	m2
Weight per declared unit	18.027	kg
Conversion factor to 1 kg	0.055472	m2

1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options, modules C1-C4 and module D LCA. 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	ND	ND	X	X	X	X	X

The modules of the EN15804 contain the following:

1 General information

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. 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 EPDs programs 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

BicoSkin is a lightweight unitised element facade. Element facades are composed out of individual pre-fabricated elements. This results in a fast and economic installation with limited use of resources in manpower and tooling compared to traditional curtain walls. This construction principle is extremely suitable for high rise constructions, allowing for the necessary tolerances with regard to the building movement, and giving the opportunity to finish the building construction floor by floor allowing for parallel construction inside the building.

BicoSkin is consisting of five components; the outer layers are made of bio composite, with an insulation material made of recycled PET bottles and an OSB panel. An aluminium coupling profile with EPDM seal all around the element creates the wind and watertightness of the facade. Using steel anchors, the BicoSkin is attached to the construction.

Composition

Standard construction of the BicoSkin:

- 37% OSB

- 23% Recycled PET Foam

- 19% Aluminium coupling profile

- 13% Duplicor bio composite

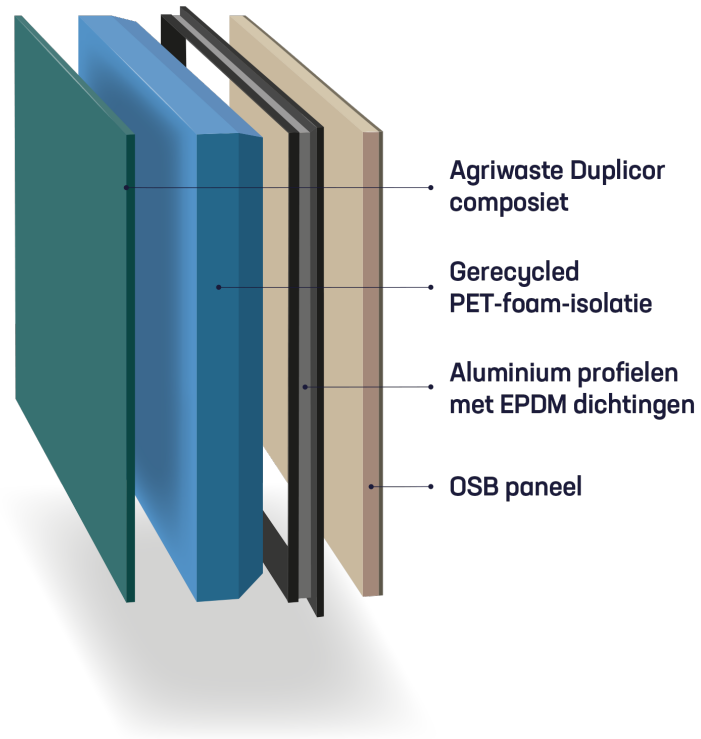
- 8% EPDM

Dimensions

The thickness of the standard element is 172mm. This can be expanded to achieve a higher insulation value or for aesthetic reasons.

The elements on which this EPD is based have a size of 3200 x 3600mm (h x w) with a thickness of 172mm.

BicoSkin bestaat uit:



2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

BicoSkin is used as a prefab element facade, where the elements have a span from floor to floor. An aluminium window frame can easily be mounted to the elements and the interior and exterior finishes has a wide range of options.

2 Product

2.3 DESCRIPTION PRODUCTION PROCESS

Production process

Duplicor is a bio composite developed by Holland Composites and is manufactured from fiberglass with agriwaste resin. This is produced on a roll. The PET insulation is produced by ArmaCell in Spelle - Germany and delivered as panels to Lelystad. The aluminium frame is purchased by De Groot & Visser and processed into elements.

The materials are placed in a mould in the desired shape to create the BicoSkin elements.

Waste process

Any waste that is created during the production of BicoSkin elements mainly consists of cutting waste. This cutting waste is minimized by the optimization software used and the purchase of fixed lengths. Cutting waste of aluminium and PET foam is collected for recycling at the factories of origin. In addition, the bio composite is produced on an embossing foil. This embossing foil also becomes waste after use. Part of which is reused.

Energy consumption during production process

The bio composite is made with a pre-embossing machine, after which the material on a roll is kept within the required temperature range. All parts are CNC machines cut and sawn to the correct dimensions. The software ensures a minimal amount of cutting waste and an optimized process.

The energy consumption during the production phase was assessed via allocation, as other elements of the bio composite are also manufactured at the Lelystad production plant.

2.4 CONSTRUCTION DESCRIPTION

Assembly process

BicoSkin is mounted using an electric tower crane. The assembly of the elements to the construction is done with hand tools.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
AP	mol H+ eqv.	1.65E-1	3.89E-3	1.63E-2	2.12E-3	6.93E-3	0.00E+0	0.00E+0	0.00E+0	8.25E-4	1.78E-3	1.26E-2	1.90E-4	-2.94E-2	1.81E-1
GWP-total	kg CO2 eqv.	1.54E+1	6.71E-1	5.85E+0	3.65E-1	1.92E+0	0.00E+0	0.00E+0	0.00E+0	-2.82E+0	3.06E-1	2.83E+1	7.94E-1	-5.78E+0	4.49E+1
GWP-b	kg CO2 eqv.	-9.04E+0	3.10E-4	1.77E-1	1.68E-4	9.98E-2	0.00E+0	0.00E+0	0.00E+0	-3.17E+0	1.41E-4	1.13E+1	6.07E-1	2.33E-2	2.76E-14
GWP-f	kg CO2 eqv.	2.44E+1	6.71E-1	5.67E+0	3.65E-1	1.82E+0	0.00E+0	0.00E+0	0.00E+0	3.53E-1	3.06E-1	1.70E+1	1.87E-1	-5.77E+0	4.49E+1
GWP-luluc	kg CO2 eqv.	5.77E-2	2.46E-4	3.03E-3	1.34E-4	2.04E-3	0.00E+0	0.00E+0	0.00E+0	1.04E-4	1.12E-4	1.58E-3	1.33E-5	-3.26E-2	3.24E-2
EP-m	kg N eqv.	2.89E-2	1.37E-3	3.41E-3	7.46E-4	1.34E-3	0.00E+0	0.00E+0	0.00E+0	1.77E-4	6.26E-4	3.45E-3	1.30E-4	-8.79E-3	3.14E-2
EP-fw	kg P eqv.	1.11E-3	6.76E-6	2.20E-4	3.68E-6	6.31E-5	0.00E+0	0.00E+0	0.00E+0	2.01E-5	3.09E-6	6.95E-5	5.20E-7	-2.64E-5	1.47E-3
EP-T	mol N eqv.	3.05E-1	1.51E-2	3.65E-2	8.22E-3	1.46E-2	0.00E+0	0.00E+0	0.00E+0	2.17E-3	6.90E-3	3.91E-2	6.63E-4	-1.13E-1	3.16E-1
ODP	kg CFC 11 eqv.	2.15E-6	1.48E-7	3.90E-7	8.05E-8	1.17E-7	0.00E+0	0.00E+0	0.00E+0	1.71E-8	6.76E-8	4.98E-7	6.18E-9	-2.14E-7	3.26E-6
POCP	kg NMVOC eqv.	9.20E-2	4.31E-3	1.09E-2	2.35E-3	4.21E-3	0.00E+0	0.00E+0	0.00E+0	5.36E-4	1.97E-3	1.05E-2	2.38E-4	-2.60E-2	1.01E-1
ADP-f	MJ	3.85E+2	1.01E+1	7.10E+1	5.50E+0	1.95E+1	0.00E+0	0.00E+0	0.00E+0	4.63E+0	4.62E+0	1.79E+1	4.97E-1	-5.25E+1	4.66E+2
ADP-mm	kg Sb-eqv.	4.92E-4	1.70E-5	4.51E-5	9.25E-6	1.93E-5	0.00E+0	0.00E+0	0.00E+0	1.42E-6	7.76E-6	3.43E-5	1.94E-7	1.47E-4	7.74E-4
WDP	m3 world eqv.	5.86E+0	3.62E-2	7.73E-1	1.97E-2	2.63E-1	0.00E+0	0.00E+0	0.00E+0	3.56E-2	1.65E-2	8.01E-1	2.04E-2	6.88E-1	8.52E+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)

3 Results

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15084+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	6.27E+2	9.02E+0	7.58E+1	4.91E+0	3.50E+1	0.00E+0	0.00E+0	0.00E+0	4.70E+0	4.12E+0	2.04E+2	6.59E+1	-4.06E+1	9.89E+2
PM	disease incidence	1.12E-6	6.03E-8	8.12E-8	3.28E-8	4.63E-8	0.00E+0	0.00E+0	0.00E+0	2.71E-9	2.75E-8	1.16E-7	3.40E-9	-6.38E-7	8.52E-7
HTP-c	CTUh	5.39E-8	2.93E-10	7.50E-9	1.59E-10	2.84E-9	0.00E+0	0.00E+0	0.00E+0	8.07E-11	1.34E-10	2.93E-8	1.59E-11	-7.40E-9	8.68E-8
HTP-nc	CTUh	8.26E-7	9.87E-9	9.25E-8	5.37E-9	3.34E-8	0.00E+0	0.00E+0	0.00E+0	2.63E-9	4.50E-9	8.58E-8	5.90E-10	8.45E-8	1.15E-6
IR	kBq U235 eqv.	1.19E+0	4.24E-2	1.45E-1	2.31E-2	5.49E-2	0.00E+0	0.00E+0	0.00E+0	9.56E-3	1.93E-2	7.45E-2	1.92E-3	-3.77E-2	1.52E+0
SQP	Pt	1.36E+3	8.77E+0	9.02E+1	4.77E+0	4.66E+1	0.00E+0	0.00E+0	0.00E+0	9.52E-1	4.00E+0	1.05E+1	1.11E+0	-5.06E+2	1.02E+3

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)

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	AAcidification 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
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	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

3 Results

ILCD classification	Indicator	Disclaimer
	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.

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A1

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	Kg Sb	5.40E-2	1.70E-5	1.65E-3	9.25E-6	1.67E-3	0.00E+0	0.00E+0	0.00E+0	1.42E-6	7.76E-6	3.43E-5	1.94E-7	1.47E-4	5.76E-2
GWP	Kg CO2 Equiv.	2.47E+1	6.65E-1	5.69E+0	3.62E-1	1.82E+0	0.00E+0	0.00E+0	0.00E+0	3.48E-1	3.04E-1	1.69E+1	1.84E-1	-5.55E+0	4.54E+1
ODP	Kg CFC-11 Equiv.	2.03E-6	1.18E-7	3.74E-7	6.42E-8	1.11E-7	0.00E+0	0.00E+0	0.00E+0	1.72E-8	5.39E-8	4.92E-7	4.96E-9	-1.94E-7	3.07E-6
POCP	Kg Ethene Equiv.	1.71E-2	4.01E-4	1.91E-3	2.18E-4	6.81E-4	0.00E+0	0.00E+0	0.00E+0	5.19E-5	1.83E-4	1.03E-3	4.72E-5	-2.60E-3	1.90E-2
AP	Kg SO2 Equiv.	1.40E-1	2.92E-3	1.41E-2	1.59E-3	5.78E-3	0.00E+0	0.00E+0	0.00E+0	6.52E-4	1.33E-3	9.78E-3	1.46E-4	-2.14E-2	1.55E-1
EP	Kg PO43- Equiv.	1.72E-2	5.74E-4	2.29E-3	3.13E-4	8.10E-4	0.00E+0	0.00E+0	0.00E+0	1.34E-4	2.62E-4	1.58E-3	6.26E-5	-4.34E-3	1.89E-2

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

3 Results

NATIONAL ANNEX NMD

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPF	Kg Sb	1.35E-1	4.89E-3	3.69E-2	2.66E-3	8.40E-3	0.00E+0	0.00E+0	0.00E+0	2.62E-3	2.23E-3	9.19E-3	2.45E-4	-3.60E-2	1.66E-1
HTP	kg 1.4 DB	1.78E+1	2.80E-1	1.48E+0	1.52E-1	6.88E-1	0.00E+0	0.00E+0	0.00E+0	3.92E-2	1.28E-1	1.50E+0	1.52E-2	-3.50E+0	1.86E+1
FAETP	kg 1.4 DB	3.10E-1	8.17E-3	3.83E-2	4.45E-3	1.46E-2	0.00E+0	0.00E+0	0.00E+0	1.08E-3	3.73E-3	7.81E-2	7.71E-3	4.05E-2	5.06E-1
MAETP	kg 1.4 DB	1.15E+3	2.94E+1	1.09E+2	1.60E+1	5.05E+1	0.00E+0	0.00E+0	0.00E+0	4.56E+0	1.34E+1	1.95E+2	8.21E+0	6.00E+1	1.64E+3
TETP	kg 1.4 DB	8.22E-2	9.90E-4	1.86E-2	5.38E-4	5.04E-3	0.00E+0	0.00E+0	0.00E+0	1.78E-3	4.52E-4	3.95E-3	4.47E-5	-6.15E-3	1.07E-1

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

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

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	1.78E+2	1.27E-1	8.26E+0	6.89E-2	6.48E+0	0.00E+0	0.00E+0	0.00E+0	4.99E-1	5.78E-2	1.88E+0	1.26E-2	-1.13E+2	8.23E+1
PERM	MJ	8.73E+1	0.00E+0	8.73E+0	0.00E+0	2.88E+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	9.89E+1
PERT	MJ	3.04E+2	1.27E-1	2.23E+1	6.89E-2	1.07E+1	0.00E+0	0.00E+0	0.00E+0	4.99E-1	5.78E-2	1.88E+0	1.26E-2	-1.13E+2	2.27E+2
PENRE	MJ	3.86E+2	1.07E+1	7.49E+1	5.84E+0	2.01E+1	0.00E+0	0.00E+0	0.00E+0	4.95E+0	4.90E+0	1.91E+1	5.29E-1	-5.43E+1	4.73E+2
PENRM	MJ	1.19E+1	0.00E+0	1.11E+0	0.00E+0	3.93E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.15E+0	1.23E+1
PENRT	MJ	4.11E+2	1.07E+1	7.79E+1	5.84E+0	2.10E+1	0.00E+0	0.00E+0	0.00E+0	4.95E+0	4.90E+0	1.91E+1	5.29E-1	-5.54E+1	5.01E+2
SM	Kg	2.85E+0	0.00E+0	8.55E-2	0.00E+0	8.81E-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	3.02E+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

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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
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
FW	M3	2.86E-1	1.23E-3	4.63E-2	6.70E-4	1.39E-2	0.00E+0	0.00E+0	0.00E+0	2.84E-3	5.62E-4	3.01E-2	5.05E-4	-3.81E-3	3.78E-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

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
HWD	Kg	3.48E-3	2.56E-5	1.73E-3	1.39E-5	7.81E-4	0.00E+0	0.00E+0	0.00E+0	3.57E-6	1.17E-5	2.16E-2	6.59E-7	3.15E-2	5.91E-2
NHWD	Kg	5.44E+0	6.42E-1	5.96E-1	3.49E-1	3.02E-1	0.00E+0	0.00E+0	0.00E+0	1.36E-2	2.93E-1	5.81E-1	1.84E+0	-1.27E+0	8.79E+0
RWD	Kg	1.16E-3	6.64E-5	1.53E-4	3.61E-5	5.51E-5	0.00E+0	0.00E+0	0.00E+0	9.57E-6	3.03E-5	7.20E-5	2.84E-6	-6.55E-5	1.52E-3

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

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	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
MFR	Kg	1.49E+0	0.00E+0	6.94E-1	0.00E+0	1.66E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.44E+0	0.00E+0	3.37E+0	9.16E+0
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
EE	MJ	0.00E+0	0.00E+0	4.62E+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	4.77E+1	5.23E+1
EET	MJ	0.00E+0	0.00E+0	2.92E+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	3.02E+1	3.31E+1
EEE	MJ	0.00E+0	0.00E+0	1.70E+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	1.75E+1	1.92E+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	0	kg C
Biogenic carbon content in accompanying packaging	0	kg C

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	€ 3.74	75,0 %
A2 Transport	€ 0.08	1,6 %
A3 Manufacturing	€ 0.52	10,4 %
A4 Transport from the gate to the site	€ 0.04	0,9 %
A5 Construction - Installation process	€ 0.19	3,9 %
B1 Use	€ 0.00	0,0 %
B2 Maintenance	€ 0.00	0,0 %
B3 Repair	€ 0.00	0,0 %
C1 De-construction / demolition	€ 0.03	0,5 %
C2 Transport	€ 0.04	0,7 %
C3 Waste processing	€ 1.06	21,3 %
C4 Disposal	€ 0.01	0,3 %
D Benefits and loads beyond the product system boundary	€ -0.72	-14,4 %
ECI NL per functional unit	**€ 4.99**	

4 Contact information

Publisher	Operator	Owner of declaration
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