Result summary

Duplicor Sandwich panel (Roof) (re-use)

Holland Composites B.V.

Calculation number:	ReTHiNK-104788
Generation on:	24-06-2025
Issue date:	24-06-2025
Valid until:	24-06-2030
Status:	verified

R<THiNK



powered by nibe

1 General information

1.1 PRODUCT

Duplicor Sandwich panel (Roof) (re-use)

1.2 VALIDITY

Issue date: 24-06-2025

Valid until: 24-06-2030

1.3 OWNER OF THE DECLARATION

DUPLICOR®
bio-based fire resistant composite

Manufacturer: Holland Composites B.V.

Address: De Serpeling 10, 8219 PZ Lelystad

E-mail: info@hollandcomposites.nl

Website: www.hollandcomposites.nl

Production location: Holland Composites BV

Address production location: De Serpeling 10, 8219 PZ Lelystad

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+A2:2019 serves as the core PCR.

☐ Internal ☒ External



Pien van den Heuvel , So. Sustainability

1.5 PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

1 m2 sandwich panel

A square meter of a sandwich panel, consisting of one 2 mm Duplicor exterior sheet and one 10 mm chipboard filled with a recycled PET insulation core. The insulation core is scalable in thickness. The insulation used in this LCA is 146 mm with a Rc-value of 5.4. Fire class B S1 D0 volgens NEN EN 13501 SBI. EPD does include fasteners. Designed for the following parts of a building: roof. The EPD does not include any framework, finishing and / or maintenance (no relevant impacts).

Reference unit: square meter (m2)

1.7 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	m2
Weight per reference unit	18.267	kg
Conversion factor to 1 kg	0.054743	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	ND	ND	X	X	X	X	X

The modules of the EN 15804 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+A2:2019. 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+A2:2019 and ISO 14025.

2 Product

2.1 PRODUCT DESCRIPTION

Duplicor bio-composite laminate sheets are produced using 100% biobased resin. These sheets serve as the primary material for constructing the Duplicor sandwich panels described in this Environmental Product Declaration (EPD).
Fire Classification: Sheets are certified as fire class B S1 D0 according to NEN EN 13501 SBI.
Thickness Range: Sheets are available in thicknesses ranging from 0.8 mm to 8 mm:

- 0.8 mm to 2 mm: Commonly used as the external "skin" of sandwich panels.
- 4 mm: Typically used for façade panels.

Surface Finishes: Multiple finishes are available to suit application requirements.
The core insulation material for the sandwich panels is manufactured from rigid, recycled PET foam (ArmaPET Eco50).
Thickness Range: Scalable from 15 mm to 200 mm.
EPD Configuration: A thickness of 146 mm with an Rd-value of 5.4 m^2K/W is used in this EPD.

A typical Duplicor sandwich panel designed for roofing applications consists of the following layers:

- Outer Layer: 2 mm Duplicor bio-composite sheet.
- Core Layer: 146 mm ArmaPET Eco50 recycled PET foam.
- Inside Layer: 10 mm Unilin Durelis chipboard

This configuration is detailed in the EPD.

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The Duplicor sandwich panel roof is a lightweight, flame-retardant insulation solution specifically designed for roof construction applications. Specifically for the Qbix construction method, see www.qbix.nl for further information.

Each panel is custom-manufactured at the Holland Composites production facility located in Lelystad, Netherlands, ensuring precise tailoring to project specifications.

2.3 DESCRIPTION PRODUCTION PROCESS

The Duplicor laminates consist of multiple layers of 100% biobased resin pre-impregnated fiberglass cloth. The biobased resin is produced through a distillation process using residual waste from food crops such as sugarcane or corn.

The rPET insulation panels arrives at the production facility in standard sizes and will be cut into the required size and thickness to create sandwich panels.

The chipboard is pre-fabricated at a production site from Unilin. Wood chips are mixed with glue and pressed to the desired thickness.

The products are custom-manufactured and supplied by the producer, incorporating a predetermined waste factor of 3% for prefabrication, in accordance with the applicable determination method.

The layers are cured under pressure and temperature to form a strong and rigid sandwich panels with a high Rc-value. Various thicknesses, surfaces, dimensions, and finishes can be provided. The insulation panel of the product is linearly scalable.

2.4 CONSTRUCTION DESCRIPTION

The EPD does not include any framework, finishing and maintenance.

Duplicor sandwich panel for roof construction can be utilized with various finishes. The roof construction panels can be fastened with screws, hook (blind) mounting systems, or bonded with structural adhesive kits, etc.
The amount of attachment- and other installation materials depends on the construction technique. The standard QBIX fastening technique is used for this LCA.

The roof panel is ready for use upon delivery and will be finished by the end user with materials such as gypsum board or paint, wallpaper, lacquer, or even decorative sheet material.
These finishing materials and supplementary layers are not supplied by the manufacturer.

Waste
The production is prefab, therefore an assumption of losses is set at 3%. Losses from the construction process and/or end application process can be collected and recycled, but are partly incinerated as well.

3 Results

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (FIXED PART)

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
GWP-total	kg CO_2 eq.	4.97E+0	2.78E-1	3.74E-1	5.62E+0	2.20E-1	4.19E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.37E-2	2.58E+0	4.04E-1	-4.61E+0	4.72E+0
GWP-f	kg CO_2 eq.	9.29E+0	2.77E-1	3.14E-1	9.89E+0	2.20E-1	4.00E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.36E-2	1.44E+0	2.74E-2	-8.17E+0	3.90E+0
GWP-b	kg CO_2 eq.	-4.94E+0	1.12E-4	3.36E-2	-4.90E+0	8.87E-5	-3.08E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.77E-5	1.13E+0	3.77E-1	4.07E+0	6.72E-1
GWP-luluc	kg CO_2 eq.	6.12E-1	1.02E-4	2.57E-2	6.38E-1	8.07E-5	1.93E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.43E-5	1.19E-4	2.84E-6	-5.05E-1	1.52E-1
ODP	kg CFC 11 eq.	1.04E-6	6.12E-8	3.24E-8	1.13E-6	4.86E-8	4.12E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.07E-8	4.44E-8	1.77E-9	-9.31E-7	3.60E-7
AP	mol H+ eq.	7.37E-2	1.61E-3	3.39E-3	7.87E-2	1.28E-3	2.69E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.43E-4	8.56E-4	5.00E-5	-6.28E-2	2.14E-2
EP-fw	kg P eq.	4.02E-4	2.80E-6	2.73E-5	4.32E-4	2.22E-6	1.62E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.43E-7	4.59E-6	1.15E-7	-3.38E-4	1.18E-4
EP-m	kg N eq.	1.78E-2	5.67E-4	8.42E-4	1.92E-2	4.50E-4	6.58E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.91E-4	2.75E-4	3.50E-5	-1.52E-2	5.56E-3
EP-T	mol N eq.	2.06E-1	6.25E-3	9.26E-3	2.21E-1	4.96E-3	7.53E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.11E-3	3.10E-3	1.84E-4	-1.78E-1	6.08E-2
POCP	kg NMVOC eq.	4.90E-2	1.78E-3	2.12E-3	5.29E-2	1.42E-3	1.90E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.02E-4	8.17E-4	6.64E-5	-4.22E-2	1.55E-2
ADP-mm	kg Sb-eq.	3.31E-4	7.03E-6	1.41E-5	3.52E-4	5.58E-6	1.23E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.37E-6	1.74E-6	6.14E-8	-2.74E-4	1.00E-4
ADP-f	MJ	1.51E+2	4.18E+0	4.77E+0	1.60E+2	3.32E+0	5.56E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.41E+0	1.12E+0	1.36E-1	-1.33E+2	3.88E+1
WDP	m3 world eq.	3.90E+0	1.50E-2	2.03E-1	4.11E+0	1.19E-2	1.52E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.05E-3	7.43E-2	5.81E-3	-3.25E+0	1.11E+0

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

3 Results

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PM	disease incidence	1.77E-6	2.49E-8	7.31E-8	1.87E-6	1.97E-8	6.10E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.39E-9	6.47E-9	9.43E-10	-1.49E-6	4.80E-7
IR	kBq U235 eq.	5.57E-1	1.75E-2	2.53E-2	6.00E-1	1.39E-2	2.02E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.92E-3	4.93E-3	5.31E-4	-4.65E-1	1.80E-1
ETP-fw	CTUe	2.32E+2	3.73E+0	1.07E+1	2.46E+2	2.96E+0	9.75E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.26E+0	1.83E+1	2.61E-1	-2.06E+2	7.23E+1
HTP-c	CTUh	2.94E-8	1.21E-10	1.16E-9	3.07E-8	9.60E-11	1.32E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.09E-11	3.06E-9	3.82E-12	-2.44E-8	1.08E-8
HTP-nc	CTUh	6.84E-7	4.09E-9	2.83E-8	7.17E-7	3.25E-9	2.52E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.38E-9	6.27E-9	1.49E-10	-5.69E-7	1.85E-7
SQP	Pt	2.50E+2	3.63E+0	2.85E-1	2.54E+2	2.88E+0	8.29E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.22E+0	3.41E-1	3.21E-1	-2.85E+2	-1.81E+1

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality idex (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	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
	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
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2

3 Results

ILCD classification	Indicator	Disclaimer
	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

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	kg Sb eq.	3.31E-4	7.03E-6	1.42E-5	3.52E-4	5.58E-6	1.23E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.37E-6	1.74E-6	6.14E-8	-2.74E-4	1.00E-4
GWP	kg CO_2 eq.	8.39E+0	2.75E-1	2.95E-1	8.96E+0	2.18E-1	3.72E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.28E-2	1.44E+0	4.70E-2	-7.42E+0	3.71E+0
ODP	kg CFC 11 eq.	9.87E-7	4.87E-8	3.14E-8	1.07E-6	3.86E-8	3.86E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.64E-8	4.46E-8	1.42E-9	-8.79E-7	3.27E-7
POCP	kg ethene eq.	9.93E-3	1.66E-4	4.03E-4	1.05E-2	1.32E-4	3.76E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.60E-5	7.57E-5	1.32E-5	-8.43E-3	2.71E-3
AP	kg SO_2 eq.	5.72E-2	1.21E-3	2.63E-3	6.11E-2	9.59E-4	2.09E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.08E-4	6.45E-4	3.80E-5	-4.85E-2	1.67E-2
EP	Kg PO43- eq.	9.73E-3	2.38E-4	4.96E-4	1.05E-2	1.89E-4	3.58E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.05E-5	1.19E-4	1.69E-5	-8.39E-3	2.84E-3

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	C1	C2	C3	C4	D	Total
ADPF	kg Sb eq.	7.14E-2	2.02E-3	2.14E-3	7.55E-2	1.60E-3	2.69E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.83E-4	5.93E-4	6.60E-5	-6.33E-2	1.79E-2
HTP	kg 1,4 DB eq.	7.05E+0	1.16E-1	3.02E-1	7.47E+0	9.19E-2	3.34E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.91E-2	1.11E-1	3.86E-3	-5.93E+0	2.12E+0
FAETP	kg 1,4 DB eq.	1.90E-1	3.38E-3	1.74E-2	2.11E-1	2.68E-3	7.81E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.14E-3	6.09E-3	9.85E-4	-1.59E-1	7.08E-2

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

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
MAETP	kg 1,4 DB eq.	2.97E+2	1.22E+1	1.34E+1	3.22E+2	9.65E+0	1.26E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.10E+0	1.59E+1	1.15E+0	-2.48E+2	1.17E+2
TETP	kg 1,4 DB eq.	2.91E-2	4.09E-4	3.14E-3	3.27E-2	3.25E-4	1.78E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.38E-4	2.55E-4	1.16E-5	-2.41E-2	1.11E-2

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

3.2 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (SCALABLE PART)

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
GWP-total	kg CO_2 eq.	4.37E-2	3.38E-1	2.33E+0	2.71E+0	1.51E-1	1.53E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.29E-2	2.12E+0	4.78E-2	-7.35E-1	4.51E+0
GWP-f	kg CO_2 eq.	1.81E-1	3.37E-1	2.32E+0	2.84E+0	1.51E-1	1.57E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.29E-2	2.12E+0	4.78E-2	-7.35E-1	4.64E+0
GWP-b	kg CO_2 eq.	-3.60E-1	1.35E-4	1.18E-3	-3.59E-1	6.08E-5	-1.08E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.54E-5	4.78E-4	2.71E-5	-1.02E-4	-3.69E-1
GWP-luluc	kg CO_2 eq.	2.23E-1	1.20E-4	1.07E-2	2.34E-1	5.54E-5	7.02E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.31E-5	2.30E-4	2.01E-6	-2.08E-5	2.41E-1
ODP	kg CFC 11 eq.	2.70E-8	7.69E-8	1.85E-7	2.89E-7	3.33E-8	1.22E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.39E-8	6.97E-8	1.22E-9	-9.55E-8	3.23E-7
AP	mol H+ eq.	2.32E-3	9.69E-4	1.33E-2	1.66E-2	8.76E-4	5.72E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.65E-4	1.24E-3	3.49E-5	-6.01E-4	1.90E-2
EP-fw	kg P eq.	2.09E-5	2.69E-6	1.90E-4	2.14E-4	1.52E-6	6.71E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.34E-7	7.95E-6	7.24E-8	-7.91E-7	2.30E-4
EP-m	kg N eq.	2.13E-3	1.92E-4	1.89E-3	4.21E-3	3.09E-4	1.51E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.29E-4	3.40E-4	2.83E-5	-1.80E-4	4.99E-3
EP-T	mol N eq.	8.12E-3	2.15E-3	2.28E-2	3.31E-2	3.40E-3	1.25E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.42E-3	3.77E-3	1.28E-4	-1.97E-3	4.11E-2
POCP	kg NMVOC eq.	1.15E-3	8.22E-4	6.06E-3	8.03E-3	9.71E-4	3.16E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.04E-4	1.07E-3	4.69E-5	-6.56E-4	1.02E-2

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADP-mm	kg Sb-eq.	1.10E-5	9.32E-6	4.04E-5	6.07E-5	3.82E-6	2.11E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.59E-6	4.02E-6	4.24E-8	-1.94E-7	7.21E-5
ADP-f	MJ	1.84E+0	5.10E+0	4.11E+1	4.80E+1	2.28E+0	1.62E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.48E-1	2.72E+0	9.39E-2	-1.23E+1	4.34E+1
WDP	m3 world eq.	4.22E-1	1.44E-2	2.86E+0	3.30E+0	8.14E-3	1.03E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.39E-3	1.25E-1	4.01E-3	-5.34E-2	3.48E+0

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PM	disease incidence	3.45E-8	2.15E-8	7.34E-8	1.29E-7	1.35E-8	4.87E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.64E-9	1.32E-8	6.51E-10	-1.70E-9	1.66E-7
IR	kBq U235 eq.	5.07E-3	2.23E-2	2.98E-1	3.26E-1	9.54E-3	1.05E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.97E-3	9.88E-3	3.68E-4	-3.95E-3	3.56E-1
ETP-fw	CTUe	2.01E+1	4.11E+0	3.37E+1	5.80E+1	2.03E+0	2.63E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.46E-1	2.64E+1	3.53E-1	-7.12E-1	8.95E+1
HTP-c	CTUh	5.46E-10	1.14E-10	1.43E-9	2.09E-9	6.59E-11	8.07E-11	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.74E-11	5.08E-10	2.71E-12	-4.64E-11	2.73E-9
HTP-nc	CTUh	1.33E-8	4.34E-9	2.60E-8	4.36E-8	2.23E-9	1.70E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.27E-10	9.69E-9	1.09E-10	-6.56E-10	5.76E-8
SQP	Pt	1.67E+1	3.57E+0	4.95E+1	6.98E+1	1.97E+0	2.23E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.23E-1	1.50E+0	2.21E-1	-1.77E-1	7.64E+1

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality idex (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

3 Results

ILCD classification	Indicator	Disclaimer
ILCD type / level 2	Potential incidence of disease due to PM emissions (PM)	None
	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
	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
	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

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	kg Sb eq.	1.11E-5	9.32E-6	4.04E-5	6.08E-5	3.82E-6	2.11E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.59E-6	4.02E-6	4.24E-8	-1.94E-7	7.22E-5
GWP	kg CO_2 eq.	3.96E-1	3.35E-1	2.31E+0	3.04E+0	1.50E-1	1.62E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.24E-2	2.11E+0	4.09E-2	-7.26E-1	4.84E+0
ODP	kg CFC 11 eq.	2.54E-8	6.14E-8	2.19E-7	3.06E-7	2.65E-8	1.24E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.10E-8	6.85E-8	9.79E-10	-8.43E-8	3.41E-7
POCP	kg ethene eq.	2.87E-4	1.67E-4	8.30E-4	1.28E-3	9.03E-5	4.64E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.76E-5	1.24E-4	9.68E-6	-1.02E-4	1.49E-3
AP	kg SO_2 eq.	1.55E-3	7.95E-4	1.10E-2	1.34E-2	6.58E-4	4.59E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.74E-4	9.69E-4	2.66E-5	-4.67E-4	1.53E-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

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
EP	Kg PO43- eq.	1.19E-3	1.23E-4	1.39E-3	2.70E-3	1.30E-4	9.17E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.41E-5	1.59E-4	1.35E-5	-6.77E-5	3.08E-3

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	C1	C2	C3	C4	D	Total
ADPF	kg Sb eq.	1.02E-3	2.42E-3	1.64E-2	1.99E-2	1.10E-3	6.87E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.59E-4	1.39E-3	4.57E-5	-6.65E-3	1.69E-2
HTP	kg 1,4 DB eq.	2.57E-1	1.34E-1	9.59E-1	1.35E+0	6.30E-2	5.09E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.63E-2	2.54E-1	3.12E-3	-3.75E-2	1.71E+0
FAETP	kg 1,4 DB eq.	1.89E+0	3.71E-3	7.17E-2	1.96E+0	1.84E-3	5.92E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.67E-4	8.77E-3	1.94E-3	-3.79E-4	2.03E+0
MAETP	kg 1,4 DB eq.	6.31E+0	1.42E+1	5.50E+1	7.55E+1	6.62E+0	3.36E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.76E+0	2.50E+1	2.03E+0	-1.70E+0	1.14E+2
TETP	kg 1,4 DB eq.	8.37E-1	4.77E-4	3.14E-2	8.69E-1	2.23E-4	2.61E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.27E-5	7.27E-4	8.12E-6	-1.18E-4	8.96E-1

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

3 Results

3.3 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (FIXED PART)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	8.56E+0	5.24E-2	-1.45E+0	7.17E+0	4.16E-2	3.14E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.77E-2	1.21E-1	2.41E-3	-2.21E+1	-1.45E+1
PERM	MJ	0.00E+0	0.00E+0	9.36E-1	9.36E-1	0.00E+0	2.81E-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	9.64E-1
PERT	MJ	7.61E+1	5.24E-2	2.19E+0	7.84E+1	4.16E-2	2.45E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.77E-2	1.21E-1	2.41E-3	-7.78E+1	3.21E+0
PENRE	MJ	1.12E+2	4.44E+0	3.35E+0	1.20E+2	3.52E+0	4.42E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.50E+0	1.19E+0	1.44E-1	-1.02E+2	2.92E+1
PENRM	MJ	1.70E+0	0.00E+0	8.70E-2	1.78E+0	0.00E+0	5.35E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.40E+0	4.39E-1
PENRT	MJ	1.37E+2	4.44E+0	4.36E+0	1.46E+2	3.52E+0	5.19E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.50E+0	1.19E+0	1.44E-1	-1.22E+2	3.54E+1
SM	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.88E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.88E-3
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
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
FW	m^3	1.72E-1	5.10E-4	9.44E-3	1.82E-1	4.04E-4	6.25E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.72E-4	2.50E-3	1.42E-4	-1.42E-1	4.88E-2

PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials | **PERM**=Use of renewable primary energy resources used as raw materials | **PERT**=Total use of renewable primary energy resources | **PENRE**=Use of non-renewable primary energy excluding non-renewable primary 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 material | **RSF**=Use of renewable secondary fuels | **NRSF**=Use of non-renewable secondary fuels | **FW**=Net use of fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
HWD	Kg	1.34E-4	1.06E-5	4.66E-6	1.49E-4	8.41E-6	7.30E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.58E-6	2.39E-6	2.08E-7	-1.24E-4	4.71E-5
NHWD	Kg	1.36E+0	2.65E-1	7.66E-2	1.70E+0	2.11E-1	1.26E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.96E-2	5.68E-1	5.42E-1	-1.15E+0	2.09E+0
RWD	Kg	4.53E-4	2.75E-5	2.21E-5	5.03E-4	2.19E-5	1.76E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.30E-6	4.18E-6	8.07E-7	-3.83E-4	1.74E-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	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
MFR	Kg	2.00E-3	0.00E+0	8.00E-5	2.08E-3	0.00E+0	6.23E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.65E-3	6.27E-2
MER	Kg	4.75E-8	0.00E+0	1.90E-9	4.94E-8	0.00E+0	1.48E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-3.92E-8	1.17E-8
EE	MJ	-2.03E+0	0.00E+0	2.59E+0	5.63E-1	0.00E+0	-6.33E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.24E+1	2.29E+1
EET	MJ	-1.28E+0	0.00E+0	7.94E-1	-4.90E-1	0.00E+0	-4.01E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.61E+0	7.08E+0
EEE	MJ	-7.45E-1	0.00E+0	4.61E-1	-2.84E-1	0.00E+0	-2.33E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.42E+0	4.11E+0

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

3.4 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (SCALABLE PART)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	3.15E+0	7.30E-2	1.18E+1	1.50E+1	2.85E-2	4.57E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.19E-2	2.15E-1	1.70E-3	-2.61E-2	1.57E+1
PERM	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
PERT	MJ	3.15E+0	7.30E-2	1.18E+1	1.50E+1	2.85E-2	4.57E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.19E-2	2.15E-1	1.70E-3	-2.61E-2	1.57E+1
PENRE	MJ	2.29E+0	5.42E+0	4.33E+1	5.10E+1	2.42E+0	1.72E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.01E+0	2.89E+0	9.98E-2	-1.36E+1	4.55E+1
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
PENRT	MJ	2.29E+0	5.42E+0	4.33E+1	5.10E+1	2.42E+0	1.72E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.01E+0	2.89E+0	9.98E-2	-1.36E+1	4.55E+1
SM	Kg	7.30E+0	0.00E+0	-2.44E-3	7.30E+0	0.00E+0	2.26E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-6.53E+0	9.89E-1

PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials | **PERM**=Use of renewable primary energy resources used as raw materials | **PERT**=Total use of renewable primary energy resources | **PENRE**=Use of non-renewable primary energy excluding non-renewable primary 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 material | **RSF**=Use of renewable secondary fuels | **NRSF**=Use of non-renewable secondary fuels | **FW**=Net use of fresh water

3 Results

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
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
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
FW	m^3	1.98E-2	5.45E-4	8.80E-2	1.08E-1	2.77E-4	3.37E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.16E-4	3.63E-3	9.79E-5	-7.09E-4	1.15E-1

PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials | **PERM**=Use of renewable primary energy resources used as raw materials | **PERT**=Total use of renewable primary energy resources | **PENRE**=Use of non-renewable primary energy excluding non-renewable primary 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 material | **RSF**=Use of renewable secondary fuels | **NRSF**=Use of non-renewable secondary fuels | **FW**=Net use of fresh water

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
HWD	Kg	5.01E-6	1.34E-5	2.53E-5	4.36E-5	5.77E-6	1.70E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.40E-6	4.81E-6	1.42E-7	-1.55E-5	4.29E-5
NHWD	Kg	5.15E-2	2.48E-1	2.86E-1	5.85E-1	1.44E-1	6.01E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.02E-2	8.40E-1	3.74E-1	-4.94E-3	2.06E+0
RWD	Kg	5.63E-6	3.47E-5	2.52E-4	2.92E-4	1.50E-5	9.73E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.24E-6	1.00E-5	5.57E-7	-5.87E-6	3.28E-4

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbr.	Unit	A1	A2	A3	A1-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	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	2.21E-1	2.21E-1	0.00E+0	1.78E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.73E-1	0.00E+0	0.00E+0	6.12E-1
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
EE	MJ	0.00E+0	0.00E+0	5.03E-2	5.03E-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	1.73E+1	1.73E+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

Abbr.	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
EET	MJ	0.00E+0	0.00E+0	1.59E-2	1.59E-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	5.46E+0	5.48E+0
EEE	MJ	0.00E+0	0.00E+0	9.24E-3	9.24E-3	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	3.17E+0	3.18E+0

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

3.5 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	0.02673	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
Packaging	0.098	kg CO2 (biogenic)

3 Results

3.6 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 2010	Share in total (%)
A1 Raw Materials Supply	€ 1.61	145,0 %
A2 Transport	€ 0.07	6,2 %
A3 Manufacturing	€ 0.33	30,0 %
A4 Transport from the gate to the site	€ 0.04	4,0 %
A5 Construction - Installation process	€ 0.08	7,4 %
B1 Use	€ 0.00	0,0 %
B2 Maintenance	€ 0.00	0,0 %
B3 Repair	€ 0.00	0,0 %
C1 De-construction / demolition	€ 0.00	0,0 %
C2 Transport	€ 0.02	1,7 %
C3 Waste processing	€ 0.22	20,3 %
C4 Disposal	€ 0.01	0,5 %
D Benefits and loads beyond the product system boundary	€ -1.28	-115,1 %
ECI NL 2010 per functional unit	**€ 1.11**	

4 Contact information

Publisher	Operator	Owner of declaration
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