

Result summary

X-treme (Cladding) with take-back guarantee

MOSO

Calculation number:	ReTHiNK-109792
Generation on:	30-06-2025
Issue date:	30-06-2025
Valid until:	30-06-2030
Status:	verified

R<THiNK



1 General information

1.1 PRODUCT

X-treme (Cladding) with take-back guarantee

1.2 VALIDITY

Issue date: 30-06-2025

Valid until: 30-06-2030

1.3 OWNER OF THE DECLARATION



Manufacturer: MOSO

Address: Adam Smithweg 2, 1689 ZW Zwaag2

E-mail: info@moso.eu

Website: www.moso-bamboo.com

Production location: Manufacturing plant CN

Address production location: Adam Smithweg 2, 1689 ZW Zwaag

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



Anne Kees Jeeninga, Advieslab

1.5 PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

1 m2 cladding

A square meter of cladding with the minimum technical thickness required end meets requirements of the Dutch Buildings Decree. Subframe joists and fasteners are not included.

Reference unit: square meter (m2)

1.7 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	m2
Weight per reference unit	19.867	kg
Conversion factor to 1 kg	0.050335	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
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1 General information

X	X	X	X	X	X	X	X	ND	ND	ND	ND	X	X	X	X	X
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The modules of the EN 15804 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+A2:2019. 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

MOSO® Bamboo X-treme® goes through a unique Thermo-Density® process of heat treatment at 200°C followed by High Density® compression to enhance the hardness, dimensional stability, fire resistance and durability to a level superior to the best tropical hardwood species.

MOSO® Bamboo X-treme products consist for approx. 90 % of rough strips made from the giant bamboo species “Phyllostachus Pubescens (Edulis)” from China (diameter up to 15 cm, length up to 15 meters) and about 10% of glue (phenol formaldehyde), and is also available with FSC certificate on request.

This product can be re-used after refurbishment depending on lifespan, condition and size. A ‘take-back-guarantee’ is offered with the purchase of this product.

Dimensions

Cladding: 1850 x 137/155/178/208 x 18 mm

Cladding: 1850 x 75/137 x 12/18 mm

Biological durability:

Class 1 (EN 350)

Hardness (Brinell)

> 9,5 kg / mm² (EN 1534)

Reaction to fire

Cladding: Class Bfl-s1 (EN 13501-1)

Cladding: Class B-s1-d0 (EN 13501-1)

Biogenic CO2

Density of material kg/m3 (u=12%)	ρ	1.150
glue content	%	12,2%
carbon content	%	50,24%
Bamboo without glue kg/m3	Pw	1.009
Density without 12% moisture content kg/m3	Pw x Vw*/1,12	901

kg carbon / m3	cf x Pw x Vw*/1,12	453
kg CO2 / m3	44/12	1.661,68
kg CO2 / m2	m2	31,84



2 Product

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The product assessed in this study consists of bamboo boards intended for use as cladding in building construction. Cladding refers to the application of one material over another to provide a protective or aesthetic exterior layer. In this case, the bamboo boards are installed on the outer surfaces of walls, primarily to enhance the visual appearance of the building and to provide protection against external environmental factors such as rain, wind, and UV radiation. Cladding can also contribute to improved thermal and acoustic insulation, as well as increased durability of the underlying structural components.

2.3 DESCRIPTION PRODUCTION PROCESS

Bamboo strips are crushed to open up the material for further processing and become bundles of bamboo fibres, called strands. During the subsequent thermal processing, the moisture content changes and the sugar content is removed from the material. Furthermore, this process changes the colour of the bamboo from white/yellow to deep/dark brown.

The thermally modified bamboo strands are then dipped into thermosetting resin. After drying, the strands are put into a mould and are then compressed under high temperature and pressure to cure the glue. The combination of compressing and thermally treating the bamboo strands (Thermo-Density® process) increases the density from 650-700 kg/m³ to approx. 1.150 kg/m³ and improves the hardness of the product significantly. At the same time, the dimensional stability of bamboo is improved by approximately 50% and the durability increases to the highest class possible (class 1 following EN 350), whereas because of the densification the product can reach the European fire class B without the use of fire retardants.

The output is a large panel, which is cut into smaller sections (boards or beams). These are then further processed and profiled to acquire the required shape. Waste created during this process is used in the factory to create energy / heat for the internal processes. As a last step, depending on the customer's request, the boards can be prefinished. This optional step is not included in this LCA.

The final product is a very stable and durable board or beam for use in multiple outdoor applications, typically cladding and cladding but also for use in outdoor furniture.

This product is suitable for reuse following a refurbishment process. A take-back guarantee can be offered, whereby the product is returned and refurbished by a third party. During refurbishment, the X-treme materials are sorted, sanded, and inspected. The top layer of the product is removed to restore its appearance and functionality. Approximately 80% of the original product mass is retained and reused in the refurbished product, thereby extending its service life and reducing the demand for virgin material input.

2.4 CONSTRUCTION DESCRIPTION

The product is installed with 7 seams of 6mm per m². 7*6=42mm. This means 95,8% of the surface consists of bamboo.

Installation of the product is carried out in a similar way to traditional cladding use hand operated tools.

Battens and fasteners are not included in this calculation due to lack of available information.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER

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.	-2.05E+1	5.12E-1	1.45E+1	-5.50E+0	3.02E+0	1.71E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.28E-1	3.28E+1	5.51E-1	-1.49E+1	1.79E+1
GWP-f	kg CO ₂ eq.	8.28E+0	5.11E-1	1.50E+1	2.38E+1	3.02E+0	1.55E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.28E-1	2.03E+0	7.80E-3	-1.49E+1	1.58E+1
GWP-b	kg CO ₂ eq.	-2.88E+1	2.06E-4	-5.61E-1	-2.94E+1	-1.34E-3	1.65E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.20E-5	3.07E+1	5.44E-1	-5.18E-3	2.08E+0
GWP-luluc	kg CO ₂ eq.	6.07E-3	1.88E-4	4.16E-3	1.04E-2	3.21E-3	6.94E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.37E-5	1.77E-5	8.66E-7	-1.11E-2	3.32E-3
ODP	kg CFC 11 eq.	8.07E-7	1.13E-7	3.85E-7	1.30E-6	6.10E-7	1.04E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.04E-8	8.54E-9	1.12E-9	-9.41E-7	1.14E-6
AP	mol H ⁺ eq.	4.39E-2	2.97E-3	7.30E-2	1.20E-1	6.30E-2	9.38E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.32E-3	2.04E-3	2.71E-5	-8.92E-2	1.06E-1
EP-fw	kg P eq.	3.26E-4	5.15E-6	3.71E-4	7.02E-4	2.59E-5	3.68E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.30E-6	1.29E-6	4.84E-8	-1.84E-2	-1.76E-2
EP-m	kg N eq.	1.04E-2	1.05E-3	1.60E-2	2.75E-2	1.62E-2	2.27E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.67E-4	9.45E-4	1.89E-5	-3.22E-3	4.41E-2
EP-T	mol N eq.	1.06E-1	1.15E-2	1.73E-1	2.90E-1	1.79E-1	2.45E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.14E-3	1.08E-2	1.09E-4	-2.43E-1	2.67E-1
POCP	kg NMVOC eq.	3.92E-2	3.29E-3	4.93E-2	9.18E-2	4.82E-2	7.28E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.47E-3	2.81E-3	3.97E-5	-4.95E-1	-3.44E-1
ADP-mm	kg Sb-eq.	1.51E-4	1.30E-5	8.76E-5	2.52E-4	5.97E-5	1.61E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.78E-6	4.73E-7	2.83E-8	-1.67E-4	1.66E-4
ADP-f	MJ	1.67E+2	7.71E+0	1.49E+2	3.24E+2	4.10E+1	1.88E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.44E+0	7.11E-1	8.22E-2	-2.05E+2	1.84E+2
WDP	m ³ world eq.	9.77E+0	2.76E-2	5.42E+0	1.52E+1	1.38E-1	7.74E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.23E-2	1.09E-2	7.94E-4	-1.01E+1	6.03E+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 stratospheric ozone 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) deprivation 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	4.51E-7	4.58E-8	9.27E-7	1.42E-6	1.74E-7	8.24E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.05E-8	1.64E-8	5.66E-10	-1.11E-6	6.11E-7
IR	kBq U235 eq.	2.14E-1	3.23E-2	1.59E-1	4.06E-1	1.72E-1	3.02E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.44E-2	1.73E-3	3.75E-4	-2.74E-1	3.50E-1
ETP-fw	CTUe	3.33E+2	6.88E+0	3.87E+2	7.26E+2	3.47E+1	3.93E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.07E+0	1.88E+0	6.72E-2	-5.80E+2	2.25E+2
HTP-c	CTUh	5.39E-8	2.23E-10	2.47E-8	7.88E-8	2.43E-9	4.30E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.96E-11	4.30E-9	2.28E-12	-5.39E-8	3.60E-8
HTP-nc	CTUh	1.44E-7	7.54E-9	1.82E-7	3.33E-7	3.59E-8	1.96E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.36E-9	1.33E-8	7.77E-11	-2.59E-7	1.46E-7
SQP	Pt	5.25E+3	6.69E+0	1.78E+3	7.03E+3	1.91E+1	3.53E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.98E+0	2.44E-1	2.09E-1	-5.18E+3	2.23E+3

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.	1.51E-4	1.30E-5	8.77E-5	2.52E-4	5.97E-5	1.61E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.78E-6	4.73E-7	2.83E-8	-1.67E-4	1.66E-4
GWP	kg CO ₂ eq.	8.01E+0	5.07E-1	1.46E+1	2.31E+1	2.99E+0	1.51E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.26E-1	2.03E+0	2.73E-2	-1.44E+1	1.55E+1
ODP	kg CFC 11 eq.	7.62E-7	8.98E-8	3.70E-7	1.22E-6	4.87E-7	9.24E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.01E-8	7.70E-9	9.02E-10	-8.84E-7	9.66E-7
POCP	kg ethene eq.	8.85E-3	3.06E-4	5.42E-3	1.46E-2	3.48E-3	9.30E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.36E-4	2.50E-4	7.98E-6	-1.08E-2	8.60E-3
AP	kg SO ₂ eq.	3.54E-2	2.23E-3	5.94E-2	9.70E-2	5.01E-2	7.52E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.94E-4	1.38E-3	2.02E-5	-7.02E-2	8.68E-2
EP	Kg PO43- eq.	7.59E-3	4.39E-4	7.76E-3	1.58E-2	5.94E-3	1.12E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.96E-4	3.83E-4	9.25E-6	-1.25E-2	1.09E-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

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.	9.05E-2	3.73E-3	9.44E-2	1.89E-1	1.98E-2	1.07E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.66E-3	3.81E-4	3.81E-5	-1.18E-1	1.03E-1
HTP	kg 1,4 DB eq.	1.37E+1	2.13E-1	8.63E+0	2.25E+1	1.73E+0	1.24E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.53E-2	2.19E-1	1.88E-3	-1.56E+1	1.02E+1
FAETP	kg 1,4 DB eq.	2.50E+0	6.23E-3	8.88E-1	3.39E+0	3.32E-2	1.72E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.78E-3	7.09E-3	1.28E-4	-2.29E+0	1.32E+0

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

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.	3.12E+2	2.24E+1	4.70E+2	8.04E+2	1.37E+2	5.01E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.00E+1	2.54E+1	2.45E-1	-5.39E+2	4.88E+2
TETP	kg 1,4 DB eq.	6.17E-2	7.54E-4	5.87E-2	1.21E-1	5.83E-3	6.42E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.36E-4	6.80E-4	6.23E-6	-7.62E-2	5.83E-2

ADPF=Depletion of abiotic resources-fossil fuels | **HTP**=Human toxicity | **FAETP**=Ecotoxicity, fresh water | **MAETP**=Ecotoxicity, marine water | **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	C1	C2	C3	C4	D	Total
PERE	MJ	7.81E+0	9.65E-2	1.91E+1	2.70E+1	5.08E-1	1.38E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.31E-2	2.89E-2	2.99E-3	-1.12E+2	-8.26E+1
PERM	MJ	2.44E+2	0.00E+0	8.17E+1	3.25E+2	0.00E+0	1.63E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-2.19E+2	1.23E+2
PERT	MJ	2.51E+2	9.65E-2	1.01E+2	3.52E+2	5.08E-1	1.76E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.31E-2	2.89E-2	2.99E-3	-3.30E+2	4.03E+1
PENRE	MJ	1.32E+2	8.19E+0	1.41E+2	2.81E+2	4.35E+1	1.69E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.65E+0	7.67E-1	8.72E-2	-1.75E+2	1.71E+2
PENRM	MJ	4.78E+1	0.00E+0	1.70E+1	6.48E+1	0.00E+0	3.24E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-4.36E+1	2.45E+1
PENRT	MJ	1.80E+2	8.19E+0	1.58E+2	3.46E+2	4.35E+1	2.01E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.65E+0	7.67E-1	8.72E-2	-2.19E+2	1.96E+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
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	m³	2.45E-1	9.40E-4	1.37E-1	3.83E-1	4.51E-3	1.97E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.19E-4	3.05E-3	9.95E-5	-2.47E-1	1.65E-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

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	1.10E-4	1.95E-5	1.27E-4	2.56E-4	7.34E-5	1.77E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.72E-6	4.26E-6	1.04E-7	-1.75E-4	1.86E-4
NHWD	Kg	8.58E-1	4.89E-1	2.31E+0	3.65E+0	1.24E+0	3.62E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.18E-1	9.00E-1	3.58E-1	-2.56E+0	4.17E+0
RWD	Kg	1.96E-4	5.08E-5	1.53E-4	4.01E-4	2.72E-4	3.55E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.27E-5	2.11E-6	5.31E-7	-2.75E-4	4.58E-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	6.36E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.27E+1	0.00E+0	0.00E+0	1.34E+1
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.31E-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	3.31E-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
EE	MJ	0.00E+0	0.00E+0	7.62E+0	7.62E+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	7.78E+1	8.54E+1
EET	MJ	0.00E+0	0.00E+0	2.41E+0	2.41E+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	2.57E+1
EEE	MJ	0.00E+0	0.00E+0	1.40E+0	1.40E+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	1.49E+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	7.808	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	28.62	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 2010	Share in total (%)
A1 Raw Materials Supply	€ 1.98	87,7 %
A2 Transport	€ 0.06	2,7 %
A3 Manufacturing	€ 1.92	84,8 %
A4 Transport from the gate to the site	€ 0.58	25,8 %
A5 Construction - Installation process	€ 0.24	10,7 %
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	€ 0.03	1,2 %
C3 Waste processing	€ 0.13	5,9 %
C4 Disposal	€ 0.00	0,1 %
D Benefits and loads beyond the product system boundary	€ -2.69	-118,9 %
ECI NL 2010 per functional unit	€ 2.26	

4 Contact information

Publisher	Operator	Owner of declaration
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