

Result summary

Reinforcement + Steel for reinforcement of concrete

Intersig

Calculation number:	ReTHiNK-81332
Generation on:	05-09-2024
Issue date:	05-09-2024
Valid until:	05-09-2029
Status:	verified

R<THiNK

1 General information

1.1 PRODUCT

Reinforcement + Steel for reinforcement of concrete

1.2 VALIDITY

Issue date: 05-09-2024

Valid until: 05-09-2029

1.3 OWNER OF THE DECLARATION



Manufacturer: Intersig

Address: Geerstraat 125, 9200 DENDERMONDE

E-mail:

Website: www.intersig.be

Production location: Intersig

Address production location: Geerstraat 125, 9200 DENDERMONDE

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



Anne Kees Jeeninga, Advieslab

1.5 PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

Reinforcement Steel per ton

One ton Reinforcement Steel bars for use in reinforced concrete structures.

Reference unit: ton (ton)

1.7 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	ton
Weight per reference unit	1000.000	kg
Conversion factor to 1 kg	0.001000	ton

1.8 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options 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 EN15804 contain the following:

Module A1 = Raw material supply Module B5 = Refurbishment

1 General information

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

Intersig manufactures structural steel products for reinforcing concrete in several varieties: rebar in coils, bars, girders, spacers and reinforcement mesh.

The process begins with wire rod as the raw material. At Intersig, wire rod is converted into a range of reinforcement products through processing on wire drawing and stretching machines. In this process, the wire rod is made to the appropriate thickness (from 5 to 20 mm in standard diameters, and in some smaller diameters) and profiled. The scope of this LCA is the full range of rebar products produced from wire rod.

Reinforcing steel is used in the construction industry to reinforce concrete. Without reinforcement, concrete has poor resistance to tensile forces commonly found in buildings and other structures. The steel fabric is prefabricated and the concrete is poured over it during construction.

From the wire rod purchased in 2022, about 88.8% was produced in an electric arc process from 100% scrap (secondary steel). The remaining 11.2% is from a converter process, based on iron ore and the standard addition of 12,5% of scrap, as pre-determined in Ecolnvent.

Intersig complies with local, national, European and international standards, such as ISO 9001 & ISO 14001 and ISO 45001.

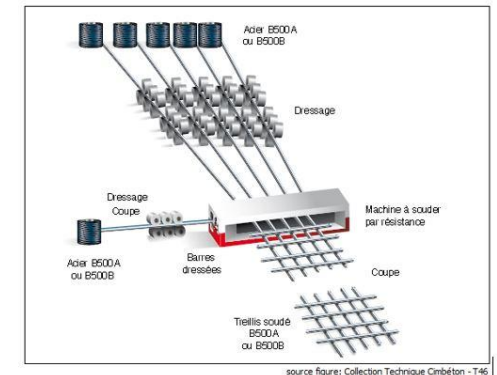
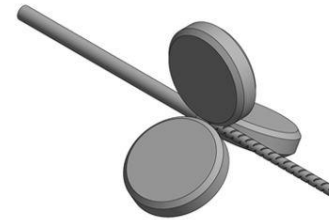
2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The construction industry uses rebar to reinforce concrete. Without reinforcement, concrete has poor resistance to tensile forces that often occur in buildings and other structures. The steel fabric is prefabricated and the concrete is poured over it during construction.

2.3 DESCRIPTION PRODUCTION PROCESS

The raw material (wire rod), produced largely from scrap (88.8% in 2022), is brought in by ship, train and truck. The wire rod is stored at various locations on site before being processed on wire drawing and stretching machines. During wire drawing, the wire rod is stripped of the mill scale, brought to thickness (from 5 to 20 mm in standard diameters and in some smaller diameters), profiled and given the right properties in terms of physical values. The mill scale, mainly iron oxide, is disposed of as waste and recycled.

Reinforcements such as girders and spacers are welded from ribbed and/or indented wire on welding lines. Longitudinal and transverse wires are welded together by current (point resistance welding). No additives or other raw materials are added. A large number of items are produced and kept in stock. Items can be stored before being transported to customers. The items contain no packaging material other than 100% recyclable steel packing strips and in some cases wooden pallets and polyester lifting straps.



2.4 CONSTRUCTION DESCRIPTION

The construction industry uses rebar to reinforce concrete. The beams and spacers are prefabricated and the concrete is poured over them during construction. The construction phase is not considered in this LCA.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER TON

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbr.	Unit	A1	A2	A3	A1- A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
AP	mol H+ eqv.	1.29E+0	4.94E-1	1.21E-1	1.91E+0	1.18E-1	6.31E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.11E-2	0.00E+0	2.50E-3	2.76E-1	2.40E+0
GWP-total	kg CO2 eqv.	3.42E+2	2.07E+1	2.88E+1	3.92E+2	2.03E+1	1.28E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.09E+0	0.00E+0	2.64E-1	7.08E+1	5.03E+2
GWP-b	kg CO2 eqv.	2.64E+0	-1.12E-3	2.18E-1	2.86E+0	9.36E-3	8.65E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.27E-3	0.00E+0	5.20E-4	-7.47E-1	2.21E+0
GWP-f	kg CO2 eqv.	3.39E+2	2.07E+1	2.86E+1	3.88E+2	2.03E+1	1.27E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.09E+0	0.00E+0	2.63E-1	7.16E+1	5.00E+2
GWP-luluc	kg CO2 eqv.	3.46E-1	1.21E-2	4.18E-2	4.00E-1	7.43E-3	1.24E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.60E-3	0.00E+0	7.35E-5	-5.30E-2	3.69E-1
EP-m	kg N eqv.	2.90E-1	1.26E-1	2.79E-2	4.43E-1	4.14E-2	1.51E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.45E-2	0.00E+0	8.60E-4	5.12E-2	5.67E-1
EP-fw	kg P eqv.	8.39E-3	1.25E-4	1.37E-3	9.88E-3	2.05E-4	3.13E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.15E-5	0.00E+0	2.95E-6	2.52E-3	1.30E-2
EP-T	mol N eqv.	3.26E+0	1.39E+0	3.26E-1	4.98E+0	4.57E-1	1.70E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.60E-1	0.00E+0	9.50E-3	5.97E-1	6.37E+0
ODP	kg CFC 11 eqv.	6.33E-5	4.30E-6	2.58E-6	7.02E-5	4.47E-6	2.30E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.56E-6	0.00E+0	1.08E-7	1.73E-6	8.04E-5
POCP	kg NMVOC eqv.	9.78E-1	3.65E-1	9.82E-2	1.44E+0	1.30E-1	4.89E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.56E-2	0.00E+0	2.76E-3	4.07E-1	2.08E+0
ADP-f	MJ	1.09E+4	2.80E+2	4.72E+2	1.17E+4	3.06E+2	3.63E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.07E+2	0.00E+0	7.36E+0	4.98E+2	1.29E+4
ADP-mm	kg Sb- eqv.	1.62E-3	2.75E-4	2.47E-4	2.14E-3	5.14E-4	1.03E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.80E-4	0.00E+0	2.41E-6	3.14E-5	2.97E-3
WDP		8.25E+1	6.25E-1	4.93E+0	8.81E+1	1.09E+0	2.72E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.82E-1	0.00E+0	3.30E-1	1.37E+1	1.06E+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	C1	C2	C3	C4	D	Total
	m3															
	world															
	eqv.															

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	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	4.76E+3	2.06E+2	6.30E+2	5.60E+3	2.73E+2	2.00E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.53E+1	0.00E+0	4.77E+0	2.39E+3	8.56E+3
PM	disease incidence	2.61E-5	1.04E-6	1.43E-6	2.86E-5	1.82E-6	9.36E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.37E-7	0.00E+0	4.86E-8	4.15E-6	3.62E-5
HTP-c	CTUh	1.87E-6	1.09E-8	5.15E-8	1.93E-6	8.84E-9	5.88E-8	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.09E-9	0.00E+0	1.11E-10	8.34E-9	2.01E-6
HTP-nc	CTUh	2.70E-5	1.91E-7	6.60E-7	2.79E-5	2.98E-7	8.84E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.04E-7	0.00E+0	3.39E-9	-1.42E-5	1.50E-5
IR	kBq U235 eqv.	9.24E+1	1.19E+0	2.20E+0	9.58E+1	1.28E+0	2.93E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.48E-1	0.00E+0	3.02E-2	-1.23E+0	9.93E+1
SQP	Pt	1.57E+3	1.12E+2	2.10E+2	1.89E+3	2.65E+2	6.84E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.27E+1	0.00E+0	1.54E+1	1.10E+2	2.44E+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

3 Results

ILCD classification	Indicator	Disclaimer
ILCD type / level 2	Depletion potential of the stratospheric ozone layer (ODP)	None
	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	1.64E-3	2.75E-4	2.48E-4	2.16E-3	5.14E-4	1.03E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.80E-4	0.00E+0	2.41E-6	3.14E-5	2.99E-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

3 Results

Abbr.	Unit	A1	A2	A3	A1- A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
GWP	Kg CO2 Equiv.	3.33E+2	2.06E+1	2.80E+1	3.82E+2	2.01E+1	1.25E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.03E+0	0.00E+0	2.58E-1	6.68E+1	4.88E+2
ODP	Kg CFC-11 Equiv.	8.11E-5	3.41E-6	2.81E-6	8.73E-5	3.57E-6	2.78E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.25E-6	0.00E+0	8.60E-8	2.31E-6	9.73E-5
POCP	Kg Ethene Equiv.	6.86E-2	2.26E-2	1.40E-2	1.05E-1	1.21E-2	3.65E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	4.24E-3	0.00E+0	2.75E-4	1.45E-1	2.71E-1
AP	Kg SO2 Equiv.	1.04E+0	3.93E-1	9.60E-2	1.53E+0	8.84E-2	5.04E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.09E-2	0.00E+0	1.89E-3	2.25E-1	1.93E+0
EP	Kg PO43- Equiv.	7.70E-1	4.57E-2	2.55E-2	8.41E-1	1.74E-2	2.60E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.07E-3	0.00E+0	3.65E-4	2.68E-2	9.18E-1

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	2.07E+0	1.34E-1	1.99E-1	2.40E+0	1.48E-1	7.83E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.17E-2	0.00E+0	3.52E-3	4.12E-1	3.10E+0
HTP	kg 1.4 DB	7.41E+1	1.06E+1	9.19E+0	9.39E+1	8.46E+0	3.30E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.96E+0	0.00E+0	1.17E-1	4.17E+1	1.50E+2
FAETP	kg 1.4 DB	8.44E+0	2.09E-1	2.68E-1	8.92E+0	2.47E-1	2.84E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.64E-2	0.00E+0	2.77E-3	-5.25E-1	9.01E+0
MAETP	kg 1.4 DB	9.55E+4	8.97E+2	2.03E+3	9.84E+4	8.89E+2	3.01E+3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.11E+2	0.00E+0	9.91E+0	-4.56E+2	1.02E+5

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	C1	C2	C3	C4	D	Total
TETP	kg 1.4 DB	1.28E+0	3.28E-2	8.11E-2	1.39E+0	2.99E-2	4.50E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.05E-2	0.00E+0	2.93E-4	-3.50E+0	-2.02E+0

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	C1	C2	C3	C4	D	Total
PERE	MJ	4.75E+2	2.48E+0	7.98E+1	5.57E+2	3.83E+0	1.70E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.34E+0	0.00E+0	5.95E-2	-1.47E+1	5.65E+2
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	4.75E+2	2.48E+0	7.98E+1	5.57E+2	3.83E+0	1.70E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.34E+0	0.00E+0	5.95E-2	-1.47E+1	5.65E+2
PENRE	MJ	1.13E+4	2.98E+2	4.94E+2	1.21E+4	3.25E+2	3.77E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.13E+2	0.00E+0	7.82E+0	5.17E+2	1.34E+4
PENRM	MJ	0.00E+0	0.00E+0	3.45E+0	3.45E+0	0.00E+0	1.03E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.64E-1	3.39E+0
PENRT	MJ	1.13E+4	2.98E+2	4.98E+2	1.21E+4	3.25E+2	3.77E+2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.13E+2	0.00E+0	7.82E+0	5.17E+2	1.34E+4
SM	Kg	9.17E+2	0.00E+0	1.45E+1	9.31E+2	0.00E+0	2.79E+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	9.59E+2
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	3.81E+0	2.17E-2	2.41E-1	4.07E+0	3.72E-2	1.25E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.30E-2	0.00E+0	7.85E-3	2.59E-1	4.51E+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

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	1.27E+0	4.21E-4	2.79E-2	1.30E+0	7.75E-4	3.90E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.71E-4	0.00E+0	1.10E-5	8.61E-3	1.35E+0
NHWD	Kg	1.15E+2	6.87E+0	4.50E+0	1.26E+2	1.94E+1	6.13E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.78E+0	0.00E+0	5.00E+1	7.01E+0	2.16E+2
RWD	Kg	9.98E-2	1.91E-3	2.39E-3	1.04E-1	2.01E-3	3.21E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.02E-4	0.00E+0	4.84E-5	-4.28E-4	1.10E-1

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	6.94E-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	6.94E-2
MFR	Kg	1.57E+2	0.00E+0	1.76E+1	1.75E+2	0.00E+0	3.51E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.50E+2	0.00E+0	0.00E+0	1.16E+3
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	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	-1.48E+0	-1.48E+0
EET	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	-9.36E-1	-9.36E-1
EEE	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	-5.43E-1	-5.43E-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 TON

BIOGENIC CARBON CONTENT

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

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 TON

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	€ 44.76	68,5 %
A2 Transport	€ 4.13	6,3 %
A3 Manufacturing	€ 3.12	4,8 %
A4 Transport from the gate to the site	€ 2.42	3,7 %
A5 Construction - Installation process	€ 1.69	2,6 %
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	€ 0.85	1,3 %
C3 Waste processing	€ 0.00	0,0 %
C4 Disposal	€ 0.04	0,1 %
D Benefits and loads beyond the product system boundary	€ 8.32	12,7 %
ECI NL per functional unit	€ 65.33	

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