

Result summary

Dycore geïsoleerde ribbenvloer (Rc3.5-6.5)

Dycore B.V.

Calculation number:	ReTHiNK-41629
Generation on:	15-01-2024
Issue date:	15-01-2024
Valid until:	15-01-2029
Status:	verified

R<THiNK



1 General information

1.1 PRODUCT

Dycore geïsoleerde ribbenvloer (Rc3.5-6.5)

1.2 VALIDITY

Issue date: 15-01-2024

Valid until: 15-01-2029

1.3 OWNER OF THE DECLARATION

[company has no logo]

Manufacturer: Dycore B.V.

Address: Ambachtsweg 16, 4906 CH Oosterhout

E-mail: info@dycore.nl

Website: www.dycore.nl

Production location: Dycore Lelystad

Address production location: Steenstraat 2, 8211 AG 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 15804:2012+A2:2019 serves as the core PCR.

Internal External



Rene Kraaijenbrink, LBP Sight

1.5 PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

m2 (Vloeren, constructief)

1 m2 (één vierkante meter) ribbenvloer: Een ribbenvloer is een eindproduct, inclusief wapening, eventuele stortstroken en voegvulling, die voldoet aan het Bouwbesluit met een minimale technische levensduur van 100 jaar. Niet onderdeel van deze functionele eenheid zijn voorzieningen voor vloeropeningen, constructieve druklagen (en de hierin aanwezige wapening), cementdekvloeren, vloerafwerkingen en bedekkingen. Dit product is geproduceerd door Dycore voor de Nederlandse markt en de daaronder vallende wet- en regelgeving.

reference_unit: square meter (m2)

1.7 CONVERSION FACTORS

Description	Value	Unit
reference_unit	1	m2
weight_per_reference_unit	217.103	kg
Conversion factor to 1 kg	0.004606	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

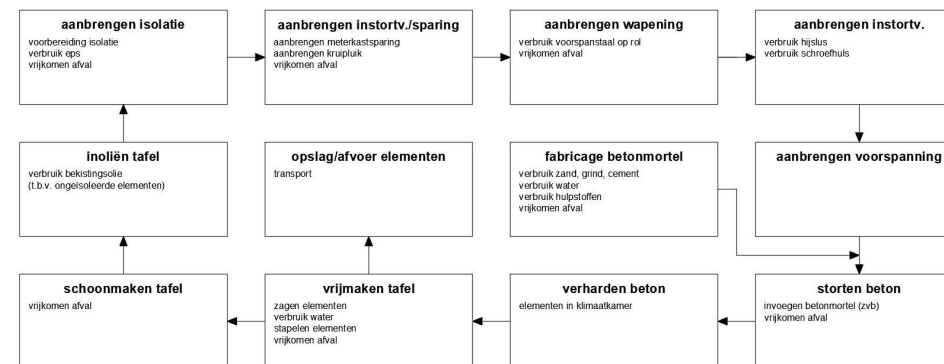
Dycore ribbenvloer 350 mm, met 166/190mm isolatie (Rc3.5); CE label D13.03, KOMO certificaat K22138/10, BB certificaat K86167/06.

Specifiek gewicht: 210 kg/m² (incl. 8,3 ltr/m¹ voegvulling); elementbreedte: standaard werkende breedte 1200/900 mm (pasplaat 500-850 mm); elementlengte: ca. 1-7,8 m; een eventuele (constructieve) druklaag op de ribbenvloer vormt geen onderdeel van deze EPD.

2.2 DESCRIPTION PRODUCTION PROCESS

De Dycore ribbenvloer wordt geproduceerd door middel van een carrousel systeem. De productietafels worden schoongemaakt, ingeolied, en voorzien van uit eps gevormde mallen (isolatie en bekisting). Deze mallen worden in een aparte lijn voorbereid (specials worden met de hand opgebouwd). Vervolgens wordt de benodigde voorspanwapening aangebracht en worden de gewenste sparings en eventuele kruptluit/meterkast aangebracht. De plaats van deze voorzieningen is tijdens het samenstellen van de mallen al op de bovenzijde aangegeven). Eventuele bijlegwapening wordt aangebracht in de rib en/of in de spiegel, waarna de voorspanstrengen op spanning worden gebracht.

De tafels worden gestort met zelfverdichtend grindbeton (voorzien van staalvezels). Nadat het product verhard is in de klimaatkamer, worden de elementen ontlast, gezaagd en (tijdelijk) opgeslagen op het terrein.



2.3 CONSTRUCTION DESCRIPTION

Toepassingsgebied: vrijdragend prefab vloersysteem voor woning- en utiliteitsbouw. De elementen worden met behulp van een montageklem gemonteerd op de bouwplaats, waarbij het gebruikelijk is dat verticale en horizontale verplaatsingen uitgevoerd worden met behulp van een (mobiele) bouwkraan.

Na montage van de elementen worden de voegen aangegoten t.b.v. de algehele samenhang en kan (indien gewenst/noodzakelijk) een (constructieve) druklaag op de elementen worden aangebracht.

3 Results

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (FIXED PART)

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.	8.41E-2	1.89E-2	8.72E-3	9.99E-3	3.08E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.49E-3	2.26E-3	1.13E-4	-1.78E-2	1.15E-1
GWP-total	kg CO2 eqv.	3.37E+1	3.18E+0	3.68E+0	2.38E+0	1.04E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.46E+0	5.42E-1	1.20E-2	-3.99E+0	4.10E+1
GWP-b	kg CO2 eqv.	1.55E-2	1.45E-3	9.31E-3	1.73E-3	6.20E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.75E-4	1.83E-3	2.36E-5	2.27E-2	5.34E-2
GWP-f	kg CO2 eqv.	3.36E+1	3.18E+0	3.67E+0	2.38E+0	1.04E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.46E+0	5.40E-1	1.19E-2	-4.02E+0	4.10E+1
GWP-luluc	kg CO2 eqv.	1.89E-2	1.17E-3	3.31E-3	6.94E-4	5.62E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.36E-4	8.53E-5	3.32E-6	1.22E-3	2.59E-2
EP-m	kg N eqv.	2.07E-2	6.60E-3	2.64E-3	3.01E-3	8.55E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.99E-3	8.87E-4	3.89E-5	-3.86E-3	3.31E-2
EP-fw	kg P eqv.	1.50E-3	3.20E-5	9.30E-5	1.81E-5	3.86E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.48E-5	1.12E-5	1.34E-7	-1.35E-4	1.54E-3
EP-T	mol N eqv.	2.69E-1	7.28E-2	3.01E-2	3.32E-2	1.04E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.30E-2	9.84E-3	4.29E-4	-4.48E-2	4.05E-1
ODP	kg CFC 11 eqv.	8.46E-7	7.01E-7	3.94E-7	5.59E-7	6.64E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.23E-7	4.68E-8	4.91E-9	-1.61E-7	2.72E-6
POCP	kg NMVOC eqv.	7.44E-2	2.07E-2	8.58E-3	1.07E-2	2.96E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.41E-3	2.69E-3	1.25E-4	-2.24E-2	1.05E-1
ADP-f	MJ	2.11E+2	4.79E+1	4.80E+1	3.70E+1	8.61E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.21E+1	4.93E+0	3.33E-1	-3.81E+1	3.34E+2
ADP-mm	kg Sb- eqv.	2.27E-4	8.02E-5	2.50E-5	4.06E-5	9.48E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.71E-5	1.41E-6	1.09E-7	-4.19E-5	3.70E-4

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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
WDP	m3 world eqv.	4.85E+0	1.71E-1	1.49E-1	1.20E-1	1.33E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	7.90E-2	2.78E-2	1.49E-2	-1.23E+1	-6.85E+0

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

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15084+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	3.55E+2	4.27E+1	2.42E+1	2.95E+1	1.12E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.97E+1	4.87E+0	2.16E-1	-1.11E+2	3.66E+2
PM	disease incidence	8.82E-7	2.85E-7	1.25E-7	2.15E-7	3.94E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.32E-7	4.90E-8	2.20E-9	-2.73E-7	1.42E-6
HTP-c	CTUh	3.90E-8	1.39E-9	4.29E-9	7.26E-10	1.06E-10	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.38E-10	1.50E-10	5.00E-12	-1.02E-9	4.53E-8
HTP-nc	CTUh	5.17E-7	4.66E-8	1.12E-7	3.35E-8	1.53E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.15E-8	3.22E-9	1.54E-10	5.28E-7	1.26E-6
IR	kBq U235 eqv.	6.17E-1	2.01E-1	8.10E-2	1.62E-1	2.68E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.25E-2	1.56E-2	1.37E-3	7.41E-3	1.18E+0
SQP	Pt	5.03E+1	4.14E+1	5.78E+0	4.24E+1	3.72E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.91E+1	1.05E+0	6.99E-1	-1.73E+1	1.44E+2

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

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

3 Results

ILCD classification	Indicator	Disclaimer
ILCD type / level 3	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
	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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	Kg Sb	2.27E-4	8.02E-5	2.50E-5	4.06E-5	9.48E-7	0.00E+0	0.00E+0	0.00E+0	0.00E+0	3.71E-5	1.41E-6	1.09E-7	-4.19E-5	3.70E-4
GWP	Kg CO2 Equiv.	3.31E+1	3.15E+0	3.62E+0	2.36E+0	1.03E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.45E+0	5.36E-1	1.17E-2	-3.79E+0	4.06E+1
ODP	Kg CFC-11 Equiv.	9.07E-7	5.59E-7	3.50E-7	4.46E-7	5.92E-9	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.57E-7	3.91E-8	3.90E-9	-1.73E-7	2.39E-6
POCP		1.34E-2	1.91E-3	1.06E-3	1.48E-3	4.53E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	8.75E-4	2.10E-4	1.25E-5	-6.57E-3	1.24E-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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
	Kg Ethene Equiv.														
AP	Kg SO2 Equiv.	6.35E-2	1.42E-2	6.64E-3	7.74E-3	2.33E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.38E-3	1.65E-3	8.56E-5	-1.43E-2	8.61E-2
EP	Kg PO43- Equiv.	1.34E-2	2.76E-3	1.32E-3	1.43E-3	4.75E-5	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.25E-3	3.63E-4	1.65E-5	-1.86E-3	1.87E-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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPF	Kg Sb	1.17E-1	2.32E-2	2.56E-2	1.76E-2	4.58E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.07E-2	2.55E-3	1.59E-4	-2.56E-2	1.72E-1
HTP	kg 1.4 DB	7.39E+0	1.33E+0	5.82E-1	1.12E+0	2.62E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.11E-1	1.20E-1	5.29E-3	-2.04E+0	9.15E+0
FAETP	kg 1.4 DB	1.41E-1	3.87E-2	2.31E-2	3.04E-2	5.76E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.78E-2	2.00E-3	1.26E-4	1.39E-2	2.67E-1
MAETP	kg 1.4 DB	2.71E+2	1.39E+2	3.81E+1	1.19E+2	1.47E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	6.41E+1	7.19E+0	4.49E-1	-9.23E+0	6.32E+2
TETP	kg 1.4 DB	9.72E-2	4.69E-3	2.72E-2	3.60E-3	2.73E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.16E-3	1.09E-3	1.33E-5	1.35E-1	2.71E-1

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

3 Results

3.2 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (SCALABLE PART)

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.	4.60E-2	2.06E-4	7.12E-4	1.23E-4	2.42E-2	0.00E+0	0.00E+0	0.00E+0	3.39E-3	1.75E-4	2.14E-3	0.00E+0	-2.24E-2	5.45E-2
GWP-total	kg CO2 eqv.	1.19E+1	3.55E-2	2.59E-1	2.92E-2	5.93E+0	0.00E+0	0.00E+0	0.00E+0	3.25E-1	3.02E-2	3.52E+0	0.00E+0	-7.28E+0	1.48E+1
GWP-b	kg CO2 eqv.	1.34E-1	1.64E-5	1.34E-3	2.12E-5	1.60E-1	0.00E+0	0.00E+0	0.00E+0	9.03E-5	1.39E-5	-2.43E-3	0.00E+0	-5.19E-2	2.42E-1
GWP-f	kg CO2 eqv.	1.18E+1	3.55E-2	2.58E-1	2.92E-2	5.77E+0	0.00E+0	0.00E+0	0.00E+0	3.25E-1	3.02E-2	3.53E+0	0.00E+0	-7.23E+0	1.46E+1
GWP-luluc	kg CO2 eqv.	2.25E-3	1.30E-5	6.39E-5	8.51E-6	1.26E-3	0.00E+0	0.00E+0	0.00E+0	2.56E-5	1.11E-5	3.63E-4	0.00E+0	-2.83E-4	3.71E-3
EP-m	kg N eqv.	7.02E-3	7.25E-5	1.19E-4	3.69E-5	8.00E-3	0.00E+0	0.00E+0	0.00E+0	1.50E-3	6.17E-5	6.51E-4	0.00E+0	-3.75E-3	1.37E-2
EP-fw	kg P eqv.	2.93E-4	3.58E-7	4.84E-6	2.22E-7	7.46E-5	0.00E+0	0.00E+0	0.00E+0	1.18E-6	3.04E-7	1.06E-5	0.00E+0	-1.10E-4	2.75E-4
EP-T	mol N eqv.	7.72E-2	8.00E-4	1.38E-3	4.08E-4	9.00E-2	0.00E+0	0.00E+0	0.00E+0	1.64E-2	6.80E-4	7.18E-3	0.00E+0	-4.07E-2	1.53E-1
ODP	kg CFC 11 eqv.	2.59E-7	7.83E-9	7.24E-9	6.86E-9	6.82E-7	0.00E+0	0.00E+0	0.00E+0	7.01E-8	6.66E-9	4.79E-8	0.00E+0	-2.46E-7	8.41E-7
POCP	kg NMVOC eqv.	6.24E-2	2.28E-4	1.03E-3	1.31E-4	2.53E-2	0.00E+0	0.00E+0	0.00E+0	4.52E-3	1.94E-4	2.22E-3	0.00E+0	-1.98E-2	7.61E-2
ADP-f	MJ	2.53E+2	5.35E-1	3.41E+0	4.54E-1	5.44E+1	0.00E+0	0.00E+0	0.00E+0	4.47E+0	4.55E-1	6.33E+0	0.00E+0	-1.51E+2	1.71E+2
ADP-mm	kg Sb- eqv.	9.73E-6	8.99E-7	8.86E-7	4.97E-7	7.67E-5	0.00E+0	0.00E+0	0.00E+0	4.98E-7	7.64E-7	7.86E-6	0.00E+0	-1.20E-5	8.59E-5

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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
WDP	m3 world eqv.	7.86E+0	1.92E-3	9.68E-2	1.47E-3	3.31E-1	0.00E+0	0.00E+0	0.00E+0	5.99E-3	1.63E-3	1.25E-1	0.00E+0	-7.55E+0	8.81E-1

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 EN15084+A2

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ETP-fw	CTUe	7.04E+1	4.77E-1	2.20E+0	3.61E-1	6.19E+1	0.00E+0	0.00E+0	0.00E+0	2.69E+0	4.06E-1	2.06E+1	0.00E+0	-1.15E+1	1.48E+2
PM	disease incidence	4.00E-7	3.19E-9	6.82E-9	2.64E-9	3.70E-7	0.00E+0	0.00E+0	0.00E+0	9.00E-8	2.71E-9	3.38E-8	0.00E+0	-2.12E-7	6.97E-7
HTP-c	CTUh	2.52E-9	1.55E-11	2.19E-10	8.90E-12	1.56E-9	0.00E+0	0.00E+0	0.00E+0	9.41E-11	1.32E-11	1.09E-9	0.00E+0	-1.24E-9	4.28E-9
HTP-nc	CTUh	3.85E-8	5.22E-10	1.41E-9	4.11E-10	6.02E-8	0.00E+0	0.00E+0	0.00E+0	2.31E-9	4.44E-10	1.30E-8	0.00E+0	-1.77E-8	9.91E-8
IR	kBq U235 eqv.	1.80E-1	2.24E-3	4.35E-3	1.98E-3	2.65E-1	0.00E+0	0.00E+0	0.00E+0	1.91E-2	1.91E-3	1.91E-2	0.00E+0	-1.85E-2	4.75E-1
SQP	Pt	1.40E+1	4.64E-1	4.31E-1	5.19E-1	4.09E+1	0.00E+0	0.00E+0	0.00E+0	5.70E-1	3.95E-1	5.04E+0	0.00E+0	-3.99E+0	5.83E+1

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

3 Results

ILCD classification	Indicator	Disclaimer
ILCD type / level 3	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
	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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPE	Kg Sb	9.73E-6	8.99E-7	8.86E-7	4.97E-7	7.67E-5	0.00E+0	0.00E+0	0.00E+0	4.98E-7	7.64E-7	7.86E-6	0.00E+0	-1.20E-5	8.59E-5
GWP	Kg CO2 Equiv.	1.13E+1	3.52E-2	2.52E-1	2.89E-2	5.72E+0	0.00E+0	0.00E+0	0.00E+0	3.21E-1	2.99E-2	3.52E+0	0.00E+0	-6.89E+0	1.43E+1
ODP	Kg CFC-11 Equiv.	3.17E-7	6.24E-9	7.53E-9	5.46E-9	5.57E-7	0.00E+0	0.00E+0	0.00E+0	5.56E-8	5.31E-9	4.06E-8	0.00E+0	-2.52E-7	7.44E-7
POCP		2.47E-2	2.12E-5	4.10E-4	1.81E-5	2.42E-3	0.00E+0	0.00E+0	0.00E+0	3.27E-4	1.81E-5	3.18E-4	0.00E+0	-5.13E-3	2.31E-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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
	Kg Ethene Equiv.														
AP	Kg SO2 Equiv.	3.88E-2	1.55E-4	5.90E-4	9.49E-5	1.82E-2	0.00E+0	0.00E+0	0.00E+0	2.42E-3	1.32E-4	1.65E-3	0.00E+0	-1.88E-2	4.33E-2
EP	Kg PO43- Equiv.	3.53E-3	3.04E-5	6.63E-5	1.75E-5	3.39E-3	0.00E+0	0.00E+0	0.00E+0	5.50E-4	2.58E-5	3.00E-4	0.00E+0	-1.70E-3	6.21E-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

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
ADPF	Kg Sb	1.20E-1	2.59E-4	1.64E-3	2.15E-4	2.59E-2	0.00E+0	0.00E+0	0.00E+0	2.12E-3	2.20E-4	3.08E-3	0.00E+0	-7.43E-2	7.93E-2
HTP	kg 1.4 DB	1.74E+0	1.48E-2	8.90E-2	1.37E-2	1.44E+0	0.00E+0	0.00E+0	0.00E+0	1.19E-1	1.26E-2	7.08E-1	0.00E+0	-6.42E-1	3.50E+0
FAETP	kg 1.4 DB	4.12E-2	4.33E-4	1.38E-3	3.73E-4	3.64E-2	0.00E+0	0.00E+0	0.00E+0	1.66E-3	3.68E-4	1.09E-2	0.00E+0	-1.72E-2	7.55E-2
MAETP	kg 1.4 DB	1.27E+2	1.56E+0	4.19E+0	1.46E+0	1.33E+2	0.00E+0	0.00E+0	0.00E+0	5.76E+0	1.32E+0	3.53E+1	0.00E+0	-5.80E+1	2.52E+2
TETP	kg 1.4 DB	6.82E-3	5.24E-5	1.90E-4	4.42E-5	6.58E-3	0.00E+0	0.00E+0	0.00E+0	1.96E-4	4.45E-5	1.93E-3	0.00E+0	-1.88E-3	1.40E-2

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

3 Results

3.3 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (FIXED PART)

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	1.16E+1	5.98E-1	1.43E+0	4.66E-1	3.35E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.76E-1	2.78E-1	2.70E-3	-1.61E-1	1.45E+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
PERT	MJ	1.16E+1	5.98E-1	1.43E+0	4.66E-1	3.35E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.76E-1	2.78E-1	2.70E-3	-1.61E-1	1.45E+1
PENRE	MJ	2.22E+2	5.09E+1	5.24E+1	3.93E+1	9.12E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.34E+1	5.26E+0	3.54E-1	-3.73E+1	3.57E+2
PENRM	MJ	4.93E+0	0.00E+0	1.25E-3	0.00E+0	1.13E-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	2.13E+0
PENRT	MJ	2.27E+2	5.09E+1	5.24E+1	3.93E+1	9.23E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.34E+1	5.26E+0	3.54E-1	-4.01E+1	3.59E+2
SM	Kg	1.97E+1	0.00E+0	5.70E-1	0.00E+0	4.65E-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	2.03E+1
RSF	MJ	2.44E+1	0.00E+0	6.54E-1	0.00E+0	5.76E-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	2.51E+1
NRSF	MJ	1.57E+1	0.00E+0	4.21E-1	0.00E+0	3.71E-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	1.62E+1
FW	M3	2.95E-1	5.82E-3	1.24E-2	4.21E-3	7.61E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.69E-3	1.75E-3	3.56E-4	-2.85E-1	3.79E-2

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

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
HWD	Kg	9.42E-4	1.21E-4	8.18E-5	8.97E-5	3.09E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	5.59E-5	8.57E-6	4.98E-7	-3.60E-4	9.43E-4
NHWD	Kg	1.83E+0	3.03E+0	3.73E-1	3.22E+0	2.94E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.40E+0	6.55E-1	2.26E+0	-3.89E-1	1.24E+1
RWD	Kg	2.77E-4	3.15E-4	8.61E-5	2.53E-4	2.53E-6	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.45E-4	2.19E-5	2.19E-6	-2.77E-5	1.07E-3

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

3 Results

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	3.78E-3	0.00E+0	5.92E+0	0.00E+0	5.02E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.12E+2	0.00E+0	0.00E+0	2.19E+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
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	8.25E-1	8.25E-1
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	5.22E-1	5.22E-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	3.03E-1	3.03E-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

3.4 ENVIRONMENTAL IMPACT INDICATORS PER SQUARE METER (SCALABLE PART)

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
PERE	MJ	5.72E+0	6.70E-3	1.12E-1	5.71E-3	3.20E+0	0.00E+0	0.00E+0	0.00E+0	2.42E-2	5.70E-3	3.13E-1	0.00E+0	-8.98E-1	8.49E+0
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
PERT	MJ	5.72E+0	6.70E-3	1.12E-1	5.71E-3	3.20E+0	0.00E+0	0.00E+0	0.00E+0	2.42E-2	5.70E-3	3.13E-1	0.00E+0	-8.98E-1	8.49E+0
PENRE	MJ	1.86E+2	5.68E-1	3.07E+0	4.82E-1	5.74E+1	0.00E+0	0.00E+0	0.00E+0	4.74E+0	4.83E-1	6.74E+0	0.00E+0	-1.14E+2	1.46E+2
PENRM	MJ	8.47E+1	0.00E+0	5.80E-1	0.00E+0	1.98E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-4.97E+1	3.58E+1
PENRT	MJ	2.71E+2	5.68E-1	3.65E+0	4.82E-1	5.76E+1	0.00E+0	0.00E+0	0.00E+0	4.74E+0	4.83E-1	6.74E+0	0.00E+0	-1.63E+2	1.82E+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
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
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	1.96E-1	6.52E-5	2.55E-3	5.17E-5	8.27E-2	0.00E+0	0.00E+0	0.00E+0	2.30E-4	5.54E-5	3.86E-3	0.00E+0	-1.75E-1	1.11E-1

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

3 Results

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbreviation	Unit	A1	A2	A3	A4	A5	B1	B2	B3	C1	C2	C3	C4	D	Total
HWD	Kg	1.68E-5	1.36E-6	6.49E-7	1.10E-6	1.15E-4	0.00E+0	0.00E+0	0.00E+0	1.22E-5	1.15E-6	1.08E-5	0.00E+0	-3.24E-5	1.27E-4
NHWD	Kg	3.48E-1	3.40E-2	1.59E-2	3.95E-2	3.35E+0	0.00E+0	0.00E+0	0.00E+0	5.29E-3	2.89E-2	3.26E-1	0.00E+0	-1.10E-1	4.04E+0
RWD	Kg	1.63E-4	3.52E-6	4.25E-6	3.10E-6	3.42E-4	0.00E+0	0.00E+0	0.00E+0	3.10E-5	2.99E-6	2.41E-5	0.00E+0	-2.28E-5	5.51E-4

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	0.00E+0	0.00E+0	2.82E-2	0.00E+0	5.26E+1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.71E+0	0.00E+0	0.00E+0	5.43E+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
EE	MJ	0.00E+0	0.00E+0	2.40E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.46E+1	1.48E+1
EET	MJ	0.00E+0	0.00E+0	1.52E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.21E+0	9.36E+0
EEE	MJ	0.00E+0	0.00E+0	8.80E-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	5.35E+0	5.44E+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	kg C

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	Share in total (%)
A1 Raw Materials Supply	€ 3.77	77,7 %
A2 Transport	€ 0.39	8,0 %
A3 Manufacturing	€ 0.31	6,4 %
A4 Transport from the gate to the site	€ 0.28	5,9 %
A5 Construction - Installation process	€ 0.55	11,4 %
B1 Use	€ 0.00	0,0 %
B2 Maintenance	€ 0.00	0,0 %
B3 Repair	€ 0.00	0,0 %
C1 De-construction / demolition	€ 0.04	0,9 %
C2 Transport	€ 0.18	3,7 %
C3 Waste processing	€ 0.30	6,2 %
C4 Disposal	€ 0.00	0,0 %
D Benefits and loads beyond the product system boundary	€ -0.98	-20,2 %
ECI NL per functional unit	€ 4.85	

4 Contact information

Publisher	Operator	Owner of declaration
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