Result summary

Zeezand 0/2 mm. en 0/4 mm. afkomstig van het Nederlandse en Belgische Continentaal plat.

De Hoop Bouwgrondstoffen

Calculation number:	ReTHiNK-68530
Generation on:	19-04-2024
Issue date:	19-04-2024
Valid until:	19-04-2029
Status:	verified

R<THiNK

powered by nibe

1 General information

1.1 PRODUCT

Zeezand 0/2 mm. en 0/4 mm. afkomstig van het Nederlandse en Belgische Continentaal plat.

1.2 VALIDITY

Issue date: 19-04-2024

Valid until: 19-04-2029

1.3 OWNER OF THE DECLARATION

Manufacturer: De Hoop Bouwgrondstoffen

Address: Duitslandweg 2, 4538 BK Terneuzen

E-mail: info@dehoop-bouwgrondstoffen.nl

Website: www.dehoop-bouwgrondstoffen.nl

Production location: Overslaglocatie Hoofdplaat

Address production location: Locatie overslag, 4513 Hoofdplaat

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

Tim Mol, EcoReview NL B.V.

1.5 PRODUCT CATEGORY RULES

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

1.6 DECLARED UNIT

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 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

1 General information

X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

The modules of the EN15804 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. 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

Zeezand 0-2 en 0-4 mm, gewonnen op het Nederlands en Belgisch continentaal plat. de winning op het Nederlands continentaal plat gebeurt ter hoogte van Zeeland.

Zeezand heeft een stortgewicht van 1650 kg per kubieke meter en wordt geleverd met een gemiddeld vochtpercentage van 5%.

Voor de omrekening naar kubieke meters kan 1650 kg/m3 worden toegepast.

Om praktische redenen zijn alle processen in A1 t/m A3 ondergebracht in A-3 en betreffen de resultaten van A1+A2+A3.

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

Het zand is toepasbaar voor o.a.:

EN 12620:2002 + A1 2008 (beton)

EN 13043:2002 (asfalt)

ophogingen

Essentiële kenmerken	Prestaties
4.2 Korrelgroep	0/2 en 0/4
4.3 Gradering	GF85
4.6 Zeer fijn materiaal	f3
5.5 Reële dichtheid	2,63+0,10 Mg/m3
5.5 Waterabsorptie WA24	0,2+0,3%
5.7.1 vorst/dooibestandheid grof toeslagmateriaal	NPD
5.7.2 Vormvastheid krimp door uitdroging	NPD
5.7.3 Bestandheid tegen alkali-silica reactiviteit	NPD
6.2 Chloride	<0,100%
6.3.1 In zuur oplosbaar sulfaat	AS0,2
6.3.2 Totaal zwavelgehalte	<1%
6.4.1 Bindings- en verhardingsvertraging	NPD
6.5 Carbonaatgehalte van fijn toeslagmateriaal voor toplaag betonverharding	<20%
Radioactieve straling	NPD
Emissie van zware metalen	NPD
Emissie van PAK's	NPD
Emissie andere gevaarlijke bestanddelen	NPD

Het zand voldoet inzake de eisen voor milieuhygiëne volgens NL BSB® Productcertificaat K20450/10

Voor meer informatie: www.dehoop-bouwgrondstoffen.nl/downloads. Op deze pagina kunt u de prestatieverklaringen, BENOR, KOMO en BsB documenten downloaden.

2.3 DESCRIPTION PRODUCTION PROCESS

Het zand wordt gebaggerd op de Noordzee en vervoerd naar Hoofdplaat. De schepen zijn lossen zelf de lading naar de wal. Op hoofplaat vindt er handling en overlag plaats naar binnenvaartschepen en/of vrachtwagens.

Deze LCA is inclusief de processen te Hoofdplaat.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER TON

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A2

Abbreviation	Unit	A1	A2	A3	Total
AP	mol H+ eqv.	0.00E+0	0.00E+0	4.15E-2	4.15E-2
GWP-total	kg CO2 eqv.	0.00E+0	0.00E+0	3.49E+0	3.49E+0
GWP-b	kg CO2 eqv.	0.00E+0	0.00E+0	1.29E-3	1.29E-3
GWP-f	kg CO2 eqv.	0.00E+0	0.00E+0	3.49E+0	3.49E+0
GWP-luluc	kg CO2 eqv.	0.00E+0	0.00E+0	4.28E-4	4.28E-4
EP-m	kg N eqv.	0.00E+0	0.00E+0	1.84E-2	1.84E-2
EP-fw	kg P eqv.	0.00E+0	0.00E+0	1.06E-5	1.06E-5
EP-T	mol N eqv.	0.00E+0	0.00E+0	2.01E-1	2.01E-1
ODP	kg CFC 11 eqv.	0.00E+0	0.00E+0	7.84E-7	7.84E-7
POCP	kg NMVOC eqv.	0.00E+0	0.00E+0	5.18E-2	5.18E-2
ADP-f	MJ	0.00E+0	0.00E+0	4.87E+1	4.87E+1
ADP-mm	kg Sb-eqv.	0.00E+0	0.00E+0	1.60E-5	1.60E-5
WDP	m3 world eqv.	0.00E+0	0.00E+0	4.34E-2	4.34E-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)

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN15084+A2

Abbreviation	Unit	A1	A2	A3	Total
ETP-fw	CTUe	0.00E+0	0.00E+0	2.89E+1	2.89E+1
PM	disease incidence	0.00E+0	0.00E+0	2.88E-7	2.88E-7
HTP-c	CTUh	0.00E+0	0.00E+0	3.51E-9	3.51E-9
HTP-nc	CTUh	0.00E+0	0.00E+0	7.35E-8	7.35E-8
IR	kBq U235 eqv.	0.00E+0	0.00E+0	2.11E-1	2.11E-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)

3 Results

Abbreviation	Unit	A1	A2	A3	Total
SQP	Pt	0.00E+0	0.00E+0	7.71E+0	7.71E+0

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

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	AAcidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	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.

3 Results

CORE ENVIRONMENTAL IMPACT INDICATORS EN15804+A1

Abbreviation	Unit	A1	A2	A3	Total
ADPE	Kg Sb	0.00E+0	0.00E+0	1.60E-5	1.60E-5
GWP	Kg CO2 Equiv.	0.00E+0	0.00E+0	3.46E+0	3.46E+0
ODP	Kg CFC-11 Equiv.	0.00E+0	0.00E+0	6.26E-7	6.26E-7
POCP	Kg Ethene Equiv.	0.00E+0	0.00E+0	3.45E-3	3.45E-3
AP	Kg SO2 Equiv.	0.00E+0	0.00E+0	2.96E-2	2.96E-2
EP	Kg PO43- Equiv.	0.00E+0	0.00E+0	6.67E-3	6.67E-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	Total
ADPF	Kg Sb	0.00E+0	0.00E+0	2.30E-2	2.30E-2
HTP	kg 1.4 DB	0.00E+0	0.00E+0	1.14E+0	1.14E+0
FAETP	kg 1.4 DB	0.00E+0	0.00E+0	3.52E-2	3.52E-2
MAETP	kg 1.4 DB	0.00E+0	0.00E+0	9.05E+1	9.05E+1
TETP	kg 1.4 DB	0.00E+0	0.00E+0	1.31E-2	1.31E-2

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

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

PARAMETERS DESCRIBING RESOURCE USE

Abbreviation	Unit	A1	A2	A3	Total
PERE	MJ	0.00E+0	0.00E+0	2.78E-1	2.78E-1

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

3 Results

Abbreviation	Unit	A1	A2	A3	Total
PERM	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	0.00E+0	0.00E+0	2.30E-1	2.30E-1
PENRE	MJ	0.00E+0	0.00E+0	1.89E+1	1.89E+1
PENRM	MJ	0.00E+0	0.00E+0	3.32E+1	3.32E+1
PENRT	MJ	0.00E+0	0.00E+0	5.17E+1	5.17E+1
SM	Kg	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
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	M3	0.00E+0	0.00E+0	1.62E-3	1.62E-3

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	Total
HWD	Kg	0.00E+0	0.00E+0	1.35E-4	1.35E-4
NHWD	Kg	0.00E+0	0.00E+0	7.11E-2	7.11E-2
RWD	Kg	0.00E+0	0.00E+0	3.43E-4	3.43E-4

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

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbreviation	Unit	A1	A2	A3	Total
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+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

Abbreviation	Unit	A1	A2	A3	Total
EE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+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

3.3 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	€ 0.00	0,0 %
A2 Transport	€ 0.00	0,0 %
A3 Manufacturing	€ 0.48	100,0 %
ECI NL per functional unit	**€ 0.48**	

4 Contact information

Publisher	Operator	Owner of declaration
De Hoop Bouwgrondstoffen Duitslandweg 2 4538 BK Terneuzen, NL	**De Hoop Bouwgrondstoffen** Duitslandweg 2 4538 BK Terneuzen, NL	**De Hoop Bouwgrondstoffen** Duitslandweg 2 4538 BK Terneuzen, NL
E-mail: info@dehoop-bouwgrondstoffen.nl **Website:** www.dehoop-bouwgrondstoffen.nl	**E-mail:** info@dehoop-bouwgrondstoffen.nl **Website:** www.dehoop-bouwgrondstoffen.nl	**E-mail:** info@dehoop-bouwgrondstoffen.nl **Website:** www.dehoop-bouwgrondstoffen.nl