

Result summary

Brekerzand greenSand, fractie 0-2 mm, Olivijn

Greensand

| | |
|---------------------|---------------|
| Calculation number: | ReTHiNK-39770 |
| Generation on: | 28-08-2023 |
| Issue date: | 28-08-2023 |
| Valid until: | 28-08-2028 |
| Status: | verified |

R<THiNK



1 General information

1.1 PRODUCT

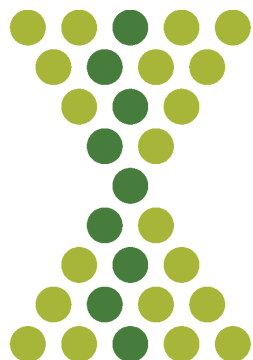
Brekerzand greenSand, fractie 0-2 mm, Olivijn

1.2 VALIDITY

Issue date 28-08-2023

Valid until: 28-08-2028

1.3 OWNER OF THE DECLARATION



greenSand

Manufacturer: Greensand

Address: Tussen Twee Havens 1, 1601 EM Enkhuzen

E-mail: info@greensand.nl

Website: www.greensand.com

Production location: Dodenwaard

Address production location: Waalbandijk 69, 6669 MC Dodenwaard

1.4 VERIFICATION OF THE DECLARATION

CEN standard EN 15804:2012+A2:2019 serves as the core PCR. In compliance with ISO 14040:2006 and 14044:2006.

Independent verification of the declaration according to EN ISO 14025:2011-10.

Internal External

LBP SIGHT

Dirk-Jan Simons, LBP Sight

1.5 THIS DECLARATION IS BASED ON THE PRODUCT CATEGORY RULES

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

1.6 FUNCTIONAL UNIT

1 ton Olivijn brekerzand

Declared unit: ton (ton)

1 ton Olivijn 0-2 mm gradatie, toegepast als brekerzand

1.7 CONVERSION FACTORS

| Description | Value | Unit |
|---------------------------|----------|------|
| Declared unit | 1 | ton |
| Weight per declared unit | 1000.000 | kg |
| Conversion factor to 1 kg | 0.001000 | ton |

1 General information

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:

| | |
|---------------------------------|--|
| 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 C2 = Transport |

Module A5 = Construction -

Installation process

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

Het brekerzand van greenSand is het enige brekerzand in Nederland dat CO₂ opruimt. Het is gemaakt van Olivijn rijk gesteente. Het zand heeft een grijsgroene kleur en is door de 0-2mm gradatie geschikt voor zowel de kleine als de grotere groeven.

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

De toepassing van de 0-2 is een brekerzand, dit wordt vaak toegepast als voegvulling tussen elementverharding.

2.3 DESCRIPTION PRODUCTION PROCESS

Olivijn is een natuurlijk voorkomend mineraal en wordt gewonnen in mijnen in Europa. De winning in de mijn vindt plaats met gebruik van explosieven. De vrijkomende rots wordt getransporteerd, gemalen en gefractioneerd.

2.4 CONSTRUCTION DESCRIPTION

De olivijn wordt losgestort in het werk. Tijdens de levensduur neemt het Olivijn CO₂ op uit de lucht, dat zich bindt met het Olivijn.

3 Results

3.1 ENVIRONMENTAL IMPACT INDICATORS PER TON

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. | 6.35E-2 | 6.43E-1 | 7.55E-2 | 7.24E-2 | 5.81E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 7.83E-4 | 0.00E+0 | 5.00E-4 | -4.02E-2 | 8.74E-1 |
| GWP-total | kg CO2 eqv. | 6.22E+0 | 4.57E+1 | 1.70E+1 | 1.25E+1 | 1.85E+1 | -5.32E+2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.35E-1 | 0.00E+0 | 5.28E-2 | -1.37E+1 | -4.45E+2 |
| GWP-b | kg CO2 eqv. | 2.93E-1 | 1.64E-2 | -3.53E-1 | 5.76E-3 | 5.20E-4 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 6.23E-5 | 0.00E+0 | 1.04E-4 | -2.45E-2 | -6.14E-2 |
| GWP-f | kg CO2 eqv. | 5.88E+0 | 4.56E+1 | 1.74E+1 | 1.25E+1 | 1.85E+1 | -5.32E+2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.35E-1 | 0.00E+0 | 5.27E-2 | -1.36E+1 | -4.45E+2 |
| GWP-luluc | kg CO2 eqv. | 4.72E-2 | 2.83E-2 | 1.62E-2 | 4.58E-3 | 6.01E-3 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 4.95E-5 | 0.00E+0 | 1.47E-5 | -5.06E-3 | 9.73E-2 |
| EP-m | kg N eqv. | 2.59E-2 | 1.84E-1 | 1.33E-2 | 2.55E-2 | 1.81E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.76E-4 | 0.00E+0 | 1.72E-4 | -1.14E-2 | 2.56E-1 |
| EP-fw | kg P eqv. | 3.68E-5 | 3.89E-4 | 6.89E-4 | 1.26E-4 | 1.07E-4 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.36E-6 | 0.00E+0 | 5.90E-7 | -1.77E-4 | 1.17E-3 |
| EP-T | mol N eqv. | 2.92E-1 | 2.03E+0 | 1.53E-1 | 2.81E-1 | 2.01E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 3.04E-3 | 0.00E+0 | 1.90E-3 | -1.31E-1 | 2.84E+0 |
| ODP | kg CFC 11 eqv. | 1.18E-6 | 9.59E-6 | 6.77E-7 | 2.76E-6 | 1.33E-6 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.98E-8 | 0.00E+0 | 2.17E-8 | -1.60E-6 | 1.40E-5 |
| POCP | kg NMVOC eqv. | 7.81E-2 | 5.43E-1 | 6.74E-2 | 8.03E-2 | 5.56E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 8.68E-4 | 0.00E+0 | 5.51E-4 | -3.82E-2 | 7.88E-1 |
| ADP-f | MJ | 8.07E+1 | 6.45E+2 | 4.95E+2 | 1.88E+2 | 9.40E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.04E+0 | 0.00E+0 | 1.47E+0 | -2.17E+2 | 1.29E+3 |
| ADP-mm | kg Sb- eqv. | 2.51E-5 | 8.31E-4 | 1.38E-4 | 3.16E-4 | 8.69E-5 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 3.42E-6 | 0.00E+0 | 4.82E-7 | -2.23E-4 | 1.18E-3 |
| WDP | m3 world eqv. | 3.26E-1 | 2.01E+0 | 1.84E+1 | 6.74E-1 | 1.79E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 7.28E-3 | 0.00E+0 | 6.60E-2 | -6.35E+1 | -4.03E+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)

3 Results

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 | 3.78E+2 | 5.32E+2 | 1.56E+2 | 1.68E+2 | 2.39E+2 | 1.83E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.81E+0 | 0.00E+0 | 9.55E-1 | -9.86E+1 | 1.38E+3 |
| PM | disease incidence | 1.58E-6 | 2.99E-6 | 5.91E-7 | 1.12E-6 | 6.01E-7 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.21E-8 | 0.00E+0 | 9.72E-9 | -5.75E-7 | 6.32E-6 |
| HTP-c | CTUh | 2.40E-9 | 2.18E-8 | 4.88E-9 | 5.45E-9 | 4.58E-9 | 2.07E-9 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.89E-11 | 0.00E+0 | 2.21E-11 | -3.91E-9 | 3.74E-8 |
| HTP-nc | CTUh | 5.30E-8 | 5.28E-7 | 1.30E-7 | 1.84E-7 | 1.06E-7 | 1.16E-10 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.99E-9 | 0.00E+0 | 6.79E-10 | -1.02E-7 | 9.01E-7 |
| IR | kBq U235 eqv. | 3.39E-1 | 2.73E+0 | 9.40E-1 | 7.89E-1 | 3.39E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 8.53E-3 | 0.00E+0 | 6.04E-3 | -2.77E-1 | 4.87E+0 |
| SQP | Pt | 4.37E+1 | 4.28E+2 | 7.61E+1 | 1.63E+2 | 4.27E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.77E+0 | 0.00E+0 | 3.09E+0 | -7.28E+1 | 6.86E+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 |
| | 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 |
| ILCD type / level 3 | 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 |

3 Results

| ILCD classification | Indicator | Disclaimer |
|---------------------|--|------------|
| | 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 | 2.51E-5 | 8.31E-4 | 1.38E-4 | 3.16E-4 | 8.69E-5 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 3.42E-6 | 0.00E+0 | 4.82E-7 | -2.23E-4 | 1.18E-3 |
| GWP | Kg CO2 Equiv. | 5.93E+0 | 4.53E+1 | 1.69E+1 | 1.24E+1 | 1.85E+1 | -5.32E+2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.34E-1 | 0.00E+0 | 5.17E-2 | -1.34E+1 | -4.46E+2 |
| ODP | Kg CFC-11 Equiv. | 9.44E-7 | 7.64E-6 | 7.58E-7 | 2.20E-6 | 1.15E-6 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.37E-8 | 0.00E+0 | 1.72E-8 | -1.40E-6 | 1.13E-5 |
| POCP | Kg Ethene Equiv. | 6.01E-3 | 3.70E-2 | 1.81E-2 | 7.47E-3 | 4.81E-3 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 8.07E-5 | 0.00E+0 | 5.51E-5 | -4.75E-3 | 6.87E-2 |
| AP | Kg SO2 Equiv. | 4.55E-2 | 5.03E-1 | 6.22E-2 | 5.44E-2 | 4.46E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.88E-4 | 0.00E+0 | 3.78E-4 | -3.10E-2 | 6.80E-1 |
| EP | Kg PO43- Equiv. | 9.92E-3 | 6.94E-2 | 7.21E-3 | 1.07E-2 | 7.13E-3 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.16E-4 | 0.00E+0 | 7.29E-5 | -4.87E-3 | 9.97E-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

NATIONAL ANNEX NMD

| Abbreviation | Unit | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | C1 | C2 | C3 | C4 | D | Total |
|--------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| ADPF | Kg Sb | 3.84E-2 | 3.11E-1 | 2.32E-1 | 9.10E-2 | 4.54E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 9.84E-4 | 0.00E+0 | 7.04E-4 | -1.16E-1 | 6.03E-1 |
| HTP | kg 1.4 DB | 2.31E+0 | 2.01E+1 | 3.65E+0 | 5.21E+0 | 2.88E+0 | 2.36E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.63E-2 | 0.00E+0 | 2.34E-2 | -2.49E+0 | 3.18E+1 |
| FAETP | kg 1.4 DB | 3.74E-2 | 4.85E-1 | 8.29E-2 | 1.52E-1 | 1.00E-1 | 2.01E-1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.64E-3 | 0.00E+0 | 5.54E-4 | -3.63E-2 | 1.02E+0 |
| MAETP | kg 1.4 DB | 1.29E+2 | 1.87E+3 | 2.80E+2 | 5.47E+2 | 3.14E+2 | 1.39E+2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.92E+0 | 0.00E+0 | 1.98E+0 | -1.51E+2 | 3.14E+3 |
| TETP | kg 1.4 DB | 7.23E-3 | 6.80E-2 | 1.95E-2 | 1.84E-2 | 8.78E-3 | 2.84E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.99E-4 | 0.00E+0 | 5.87E-5 | -1.19E-2 | 1.39E-1 |

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

| Abbreviation | Unit | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | C1 | C2 | C3 | C4 | D | Total |
|--------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| PERE | MJ | 1.05E+1 | 7.75E+0 | 2.70E+1 | 2.36E+0 | 3.52E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.55E-2 | 0.00E+0 | 1.19E-2 | -4.32E+0 | 4.68E+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 | 1.05E+1 | 7.75E+0 | 2.70E+1 | 2.36E+0 | 3.52E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.55E-2 | 0.00E+0 | 1.19E-2 | -4.32E+0 | 4.68E+1 |
| PENRE | MJ | 8.58E+1 | 6.85E+2 | 2.91E+2 | 2.00E+2 | 8.81E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.16E+0 | 0.00E+0 | 1.56E+0 | -2.29E+2 | 1.12E+3 |
| PENRM | MJ | 0.00E+0 | 0.00E+0 | 2.39E+2 | 0.00E+0 | 1.19E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | -8.40E+0 | 2.42E+2 |
| PENRT | MJ | 8.58E+1 | 6.85E+2 | 5.30E+2 | 2.00E+2 | 1.00E+2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.16E+0 | 0.00E+0 | 1.56E+0 | -2.38E+2 | 1.37E+3 |
| 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 |

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 | A4 | A5 | B1 | B2 | B3 | C1 | C2 | C3 | C4 | D | Total |
|--------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|
| 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 | 6.56E-2 | 7.09E-2 | 3.37E-1 | 2.29E-2 | 4.59E-2 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.48E-4 | 0.00E+0 | 1.57E-3 | -1.48E+0 | -9.35E-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

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

| Abbreviation | Unit | A1 | A2 | A3 | A4 | A5 | B1 | B2 | B3 | C1 | C2 | C3 | C4 | D | Total |
|--------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| HWD | Kg | 2.05E-4 | 1.36E-3 | 1.42E-4 | 4.77E-4 | 1.64E-4 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 5.16E-6 | 0.00E+0 | 2.20E-6 | -3.00E-4 | 2.06E-3 |
| NHWD | Kg | 2.47E-1 | 2.69E+1 | 9.96E-1 | 1.19E+1 | 3.47E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.29E-1 | 0.00E+0 | 1.00E+1 | -6.62E-1 | 5.30E+1 |
| RWD | Kg | 5.28E-4 | 4.30E-3 | 7.81E-4 | 1.24E-3 | 4.71E-4 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 1.34E-5 | 0.00E+0 | 9.67E-6 | -3.17E-4 | 7.02E-3 |

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 | 4.95E+1 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 9.90E+2 | 0.00E+0 | 0.00E+0 | 1.04E+3 |
| MFR | Kg | 0.00E+0 | 0.00E+0 | 0.00E+0 | 0.00E+0 | 2.95E-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 | 2.95E-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 | 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 | 1.04E+2 | 1.04E+2 |
| 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 | 6.61E+1 | 6.61E+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 | 3.84E+1 | 3.84E+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 | € 0.81 | -5,3 % |
| A2 Transport | € 7.04 | -46,2 % |
| A3 Manufacturing | € 1.59 | -10,4 % |
| A4 Transport from the gate to the site | € 1.49 | -9,8 % |
| A5 Construction - Installation process | € 1.48 | -9,7 % |
| B1 Use | € -26.55 | 174,3 % |
| B2 Maintenance | € 0.00 | 0,0 % |
| B3 Repair | € 0.00 | 0,0 % |
| C1 De-construction / demolition | € 0.00 | 0,0 % |
| C2 Transport | € 0.02 | -0,1 % |
| C3 Waste processing | € 0.00 | 0,0 % |
| C4 Disposal | € 0.01 | 0,0 % |
| D Benefits and loads beyond the product system boundary | € -1.11 | 7,3 % |
| ECI NL per functional unit | € -15.23 | |

4 Contact information

Publisher



Greensand
Tussen Twee Havens 1
1601 EM Enkhuizen, NL

E-mail:
info@greensand.nl

Website:
www.greensand.com

Operator

Stichting NMD
Visseringlaan 22b
2288 ER Rijswijk, NL

E-mail:
info@milieudatabase.nl

Website:
www.milieudatabase.nl

Owner of declaration



Greensand
Tussen Twee Havens 1
1601 EM Enkhuizen, NL

E-mail:
info@greensand.nl

Website:
www.greensand.com