

# Environmental Product Declaration

volgens ISO 14025 en EN 15804



Deze declaratie is voor:  
**Betongranulaat**

van:  
**Branchevereniging Recycling Breken  
en Sorteren**



program operator  
**Stichting MRPI®**  
uitgever  
**Stichting MRPI®**  
[www.mrpi.nl](http://www.mrpi.nl)

MRPI® registratie  
**1.1.00402.2023**  
datum eerste uitgifte  
**03-02-2023**  
datum deze uitgifte  
**03-02-2023**  
vervaldatum  
**03-02-2028**





## BEDRIJFSINFORMATIE



Branchevereniging Recycling Breken en Sorteren  
Van Heemstraweg-West 2b  
5301 PA  
Zaltbommel  
0418684878  
Peter Broere  
[www.brbs.nl](http://www.brbs.nl)

## PRODUCT

Betonggranulaat

## PRODUCT EENHEID/FUNCT. EENHEID

1 ton

## BESCHRIJVING PRODUCT

Halffabrikaat voor toepassing in nieuw beton

## AFBEELDING



## MEER INFORMATIE

[www.brbs.nl](http://www.brbs.nl)

## MRPI® REGISTRATIE

1.1.00402.2023

## DATUM UITGIFTE

03-02-2023

## VERVALDATUM

03-02-2028

## TOEPASSINGSGEBIED CERTIFICAAT

Dit MRPI®-EPD certificaat is getoetst door **Niels Jonkers, PLUK sustainability**.

De LCA studie is gedaan door **Igor Konovalov, SGS INTRON**.

Het certificaat is gebaseerd op een LCA-dossier volgens ISO14025 en EN15804+A2/Bepalingsmethode. Het is getoetst aan de hand van het 'MRPI®-EPD verification protocol November 2020.v4.0'. EPD's van bouwproducten zijn niet vergelijkbaar als ze niet voldoen aan EN15804+A2/Bepalingsmethode. Stoffen die voorkomen op de kandidatenlijst van SVHC's van het ECHA worden in dit certificaat gedeclareerd als ze de limiet voor registratie van die stof overschrijden.

## UITGEVER CERTIFICAAT

Stichting MRPI®  
Kingsfordweg 151  
1043GR  
Amsterdam

ir. J-P den Hollander, Managing director MRPI®

## BEWIJS VAN TOETSING

CEN norm EN15804 is de PCR[a]

Onafhankelijke toetsing van certificaat en dossier, volgens EN ISO

14025:2010:

intern:

extern: X

Onafhankelijke toetser:

Niels Jonkers, PLUK sustainability

[a] PCR = Product Category Rules

## UITGEBREIDE PRODUCT BESCHRIJVING

Deze EPD omvat een branchegemiddelde van een ton betongranulaat, geproduceerd door leden van de BRBS.

| Component > 1% van totale massa | [%]  |
|---------------------------------|------|
| Samenstelling vertrouwelijk     | ---- |

## TOEPASSINGSGBIED EN TYPE

Dit EPD volgt de Europese standaard EN 15805:2012 + A1:2013 en A2:2019.

Enkele scenario's en forfaitaire waarden zijn gehaald uit de Bepalingsmethode Milieuprestatie Bouwwerken.

Dit betekent dat de onderliggende standaarden ISO 14040:2006/AMD a:2020 "Environmental management - Life cycle analysis - Principles and framework" en ISO 14044:2006/AMD 2:2020 "Environmental management - Life cycle analysis - Requirements and guidelines" zijn gevolgd.

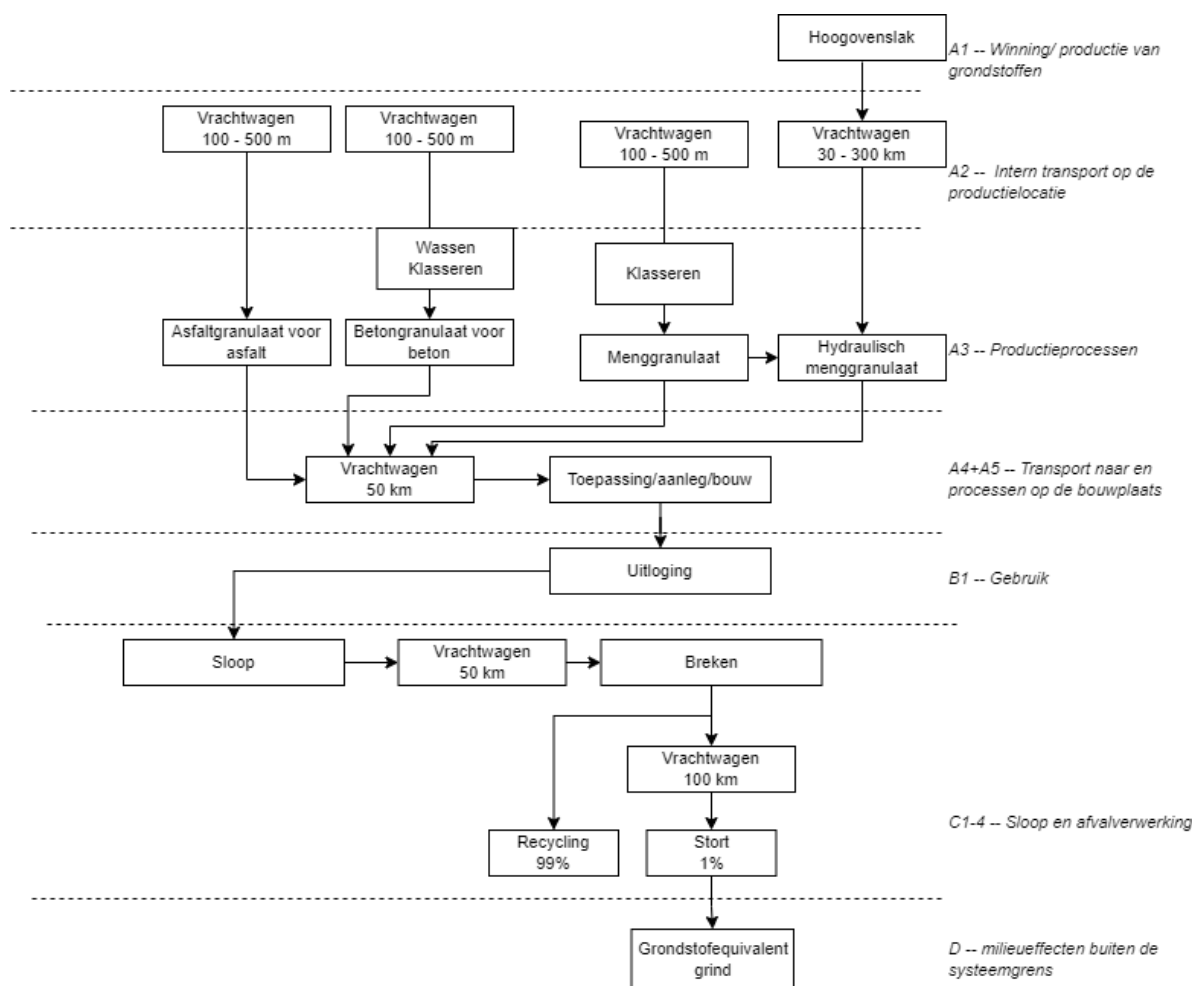
Deze standaarden zijn ook gebaseerd op ISO 21930:2017 en ISO 14025:2006

De LCA berekeningen zijn uitgevoerd met behulp van Simapro en Ecoinvent v3.6

| PRODUCTIE FASE          |                        |           |                                           | CONSTRUCTIE |         |           |           | GEBRUIKSFASE |           |                      |               | EINDE LEVENSDUUR |           |                 |       | OPBRENGSTEN EN                                           |  |
|-------------------------|------------------------|-----------|-------------------------------------------|-------------|---------|-----------|-----------|--------------|-----------|----------------------|---------------|------------------|-----------|-----------------|-------|----------------------------------------------------------|--|
| PROCES                  |                        |           |                                           | FASE        |         |           |           | FASE         |           |                      |               | FASE             |           |                 |       | LASTEN BUITEN DE                                         |  |
| FASE                    |                        |           |                                           |             |         |           |           |              |           |                      |               |                  |           |                 |       | SYSTEMGRENZEN                                            |  |
| Winning<br>grondstoffen | Transport naar fabriek | Productie | Transport fabriekspoort tot<br>bouwplaats | Montage     | Gebruik | Onderhoud | Reparatie | Vervanging   | Renovatie | Energie gebruiksfase | Waterverbruik | Demontage-sloop  | Transport | Afvalverwerking | Stort | Hergebruik-<br>Terugwinning-<br>Recycling-<br>potentieel |  |
| A1                      | A2                     | A3        | A4                                        | A5          | B1      | B2        | B3        | B4           | B5        | B6                   | B7            | C1               | C2        | C3              | C4    | D                                                        |  |
| x                       | x                      | x         | ND                                        | ND          | ND      | ND        | ND        | ND           | ND        | ND                   | ND            | ND               | ND        | ND              | ND    | ND                                                       |  |

X = Modules Assessed

ND = Not Declared



LCA proces diagram volgens EN 15804 (7.2.1)

## REPRESENTATIVITEIT

Van de 56 leden is er van 17 leden van BRBS Recycling gegevens verzameld. Deze leden verzorgen het merendeel van de totale volumes die door leden van BRBS Recycling worden verwerkt. Tevens zijn de processen van alle leden hoofdzakelijk gelijk aan elkaar gelijk. Hiermee worden de aangeleverde gegevens als representatief geacht.

**MILIEUBELASTING per functionele eenheid of producteenheid (indicatoren A1)**

|      | UNIT           | A1   | A2      | A3      | A1-A3   |
|------|----------------|------|---------|---------|---------|
| ADPE | kg Sb eq.      | 0.00 | 5.75E-7 | 6.14E-7 | 1.19E-6 |
| ADPF | MJ             | 0.00 | 1.62E-4 | 1.46E-3 | 1.62E-3 |
| GWP  | kg CO2 eq.     | 0.00 | 2.20E-2 | 2.40E-1 | 2.62E-1 |
| ODP  | kg CFC11 eq.   | 0.00 | 4.09E-9 | 3.90E-8 | 4.31E-8 |
| POCP | kg ethene eq.  | 0.00 | 1.32E-5 | 6.72E-5 | 8.04E-5 |
| AP   | kg SO2 eq.     | 0.00 | 9.48E-5 | 5.95E-4 | 6.90E-4 |
| EP   | kg (PO4)3- eq. | 0.00 | 1.89E-5 | 1.35E-4 | 1.54E-4 |

Toxicity indicators for Dutch market

|       |            |      |         |         |         |
|-------|------------|------|---------|---------|---------|
| HTP   | kg DCB eq. | 0.00 | 9.42E-3 | 6.97E-2 | 7.91E-2 |
| FAETP | kg DCB eq. | 0.00 | 2.76E-4 | 1.14E-2 | 1.16E-2 |
| MAETP | kg DCB eq. | 0.00 | 9.86E-1 | 6.29E+1 | 6.39E+1 |
| TETP  | kg DCB eq. | 0.00 | 3.34E-5 | 5.33E-4 | 5.66E-4 |
| ECI   | Euro       | 0.00 | 2.66E-3 | 2.89E-2 | 3.16E-2 |
| ADPF  | kg Sb. eq. | 0.00 | 5.75E-7 | 6.14E-7 | 1.19E-6 |

ADPE = Abiotic Depletion Potential for non-fossil resources

ADPF = Abiotic Depletion Potential for fossil resources

GWP = Global Warming Potential

ODP = Depletion potential of the stratospheric ozone layer

POCP = Formation potential of tropospheric ozone photochemical oxidants

AP = Acidification Potential of land and water

EP = Eutrophication Potential

HTP = Human Toxicity Potential

FAETP = Fresh water aquatic ecotoxicity potential

MAETP = Marine aquatic ecotoxicity potential

TETP = Terrestrial ecotoxicity potential

ECI = Environmental Cost Indicator

ADPF = Abiotic Depletion Potential for fossil resources expressed in [kg Sb-eq.]



**MILIEUBELASTING per functionele eenheid of producteenheid (kern indicatoren A2)**

|                       | UNIT                    | A1   | A2      | A3       | A1-A3    |
|-----------------------|-------------------------|------|---------|----------|----------|
| GWP-total             | kg CO2 eq.              | 0.00 | 2.22E-2 | 4.55E-1  | 4.77E-1  |
| GWP-fossil            | kg CO2 eq.              | 0.00 | 2.22E-2 | 2.33E-1  | 2.55E-1  |
| GWP-biogenic          | kg CO2 eq.              | 0.00 | 1.35E-5 | 2.22E-1  | 2.22E-1  |
| GWP-luluc             | kg CO2 eq.              | 0.00 | 7.86E-6 | 4.93E-5  | 5.72E-5  |
| ODP                   | kg CFC11 eq.            | 0.00 | 5.12E-9 | 4.86E-8  | 5.38E-8  |
| AP                    | mol H+ eq.              | 0.00 | 1.27E-4 | 8.05E-4  | 9.32E-4  |
| EP-freshwater         | kg PO4 eq.              | 0.00 | 1.83E-7 | 2.51E-6  | 2.70E-6  |
| EP-marine             | kg N eq.                | 0.00 | 4.53E-5 | 1.57E-4  | 2.02E-4  |
| EP-terrestrial        | mol N eq.               | 0.00 | 4.99E-4 | 2.31E-3  | 2.81E-3  |
| POCP                  | kg NMVOC eq.            | 0.00 | 1.43E-4 | 4.27E-4  | 5.70E-4  |
| ADP-minerals & metals | kg Sb eq.               | 0.00 | 5.75E-7 | 6.14E-7  | 1.19E-6  |
| ADP-fossil            | MJ, net calorific value | 0.00 | 3.41E-1 | 3.11E+0  | 3.45E+0  |
| WDP                   | m3 world eq. deprived   | 0.00 | 1.05E-3 | -2.76E-2 | -2.65E-2 |

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic

GWP-luluc = Global Warming Potential land use and land use change

ODP = Depletion potential of the stratospheric ozone layer

AP = Acidification Potential, Accumulated Exceedence

EP-freshwater = Eutrophication Potential, fraction of nutrients reaching freshwater end compartment

EP-marine = Eutrophication Potential, fraction of nutrients reaching marine end compartment

EP-terrestrial = Eutrophication Potential, Accumulated Exceedence

POCP = Formation potential of tropospheric ozone photochemical oxidants

ADP-minerals&metals = Abiotic Depletion Potential for non fossil resources [2]

ADP-fossil = Abiotic Depletion for fossil resources potential [2]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [2]

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.

**MILIEUBELASTING per functionele eenheid of producteenheid (additionele indicatoren A2)**

|        | UNIT              | A1   | A2       | A3       | A1-A3    |
|--------|-------------------|------|----------|----------|----------|
| PM     | Disease incidence | 0.00 | 2.00E-9  | 5.80E-9  | 7.81E-9  |
| IRP    | kBq U235 eq.      | 0.00 | 1.49E-3  | 1.39E-2  | 1.54E-2  |
| ETP-fw | CTUe              | 0.00 | 2.77E-1  | 4.13E+0  | 4.40E+0  |
| HTP-c  | CTUh              | 0.00 | 9.85E-12 | 8.99E-11 | 9.97E-11 |
| HTP-nc | CTUh              | 0.00 | 3.30E-10 | 3.32E-9  | 3.65E-9  |
| SQP    | ---               | 0.00 | 2.92E-1  | 3.57E+0  | 3.86E+0  |

PM = Potential incidence of disease due to PM emissions

IRP = Potential Human exposure efficiency relative to U235 [1]

ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]

HTP-c = Potential Comparative Toxic Unit for humans [2]

HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]

SQP = Potential soil quality index [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.

## GRONDSTOF GEBRUIK per functionele eenheid of producteenheid

|       | UNIT | A1   | A2      | A3       | A1-A3    |
|-------|------|------|---------|----------|----------|
| PERE  | MJ   | 0.00 | 4.89E-3 | 9.50E-1  | 9.55E-1  |
| PERM  | MJ   | 0.00 | 0.00    | 0.00     | 0.00     |
| PERT  | MJ   | 0.00 | 4.89E-3 | 9.50E-1  | 9.55E-1  |
| PENRE | MJ   | 0.00 | 3.62E-1 | 3.31E+0  | 3.67E+0  |
| PENRM | MJ   | 0.00 | 0.00    | 0.00     | 0.00     |
| PENRT | MJ   | 0.00 | 3.62E-1 | 3.31E+0  | 3.67E+0  |
| SM    | kg   | 0.00 | 0.00    | 0.00     | 0.00     |
| RSF   | MJ   | 0.00 | 0.00    | 0.00     | 0.00     |
| NRSF  | MJ   | 0.00 | 0.00    | 0.00     | 0.00     |
| FW    | m3   | 0.00 | 3.86E-5 | -6.50E-4 | -6.12E-4 |

PERE = Use of renewable energy excluding renewable primary energy resources

PERM = Use of renewable energy resources used as raw materials

PERT = Total use of renewable primary energy resources

PENRE = Use of non-renewable primary energy resources excluding non-renewable 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 materials

RSF = Use of renewable secondary fuels

NRSF = Use of non renewable secondary fuels

FW = Use of net fresh water

## OUTPUT STROMEN EN AFVALCATEGORIËN per functionele eenheid of producteenheid

|      | UNIT | A1   | A2      | A3      | A1-A3   |
|------|------|------|---------|---------|---------|
| HWD  | kg   | 0.00 | 8.72E-7 | 8.82E-6 | 9.69E-6 |
| NHWD | kg   | 0.00 | 2.11E-2 | 2.54E-2 | 4.65E-2 |
| RWD  | kg   | 0.00 | 2.32E-6 | 2.14E-5 | 2.37E-5 |
| CRU  | kg   | 0.00 | 0.00    | 0.00    | 0.00    |
| MFR  | kg   | 0.00 | 0.00    | 0.00    | 0.00    |
| MER  | kg   | 0.00 | 0.00    | 0.00    | 0.00    |
| EEE  | MJ   | 0.00 | 0.00    | 0.00    | 0.00    |
| ETE  | MJ   | 0.00 | 0.00    | 0.00    | 0.00    |

HWD = Hazardous Waste Disposed

RWD = Radioactive Waste Disposed

MFR = Materials for recycling

EEE = Exported Electrical Energy

NHWD = Non Hazardous Waste Disposed

CRU = Components for reuse

MER = Materials for energy recovery

ETE = Exported Thermal Energy



### BIOGEEN KOOLSTOF INHOUD per functionele eenheid of producteenheid (A1 / A2)

|       | UNIT | A1   | A2   | A3   | A1-A3 |
|-------|------|------|------|------|-------|
| BCCpr | kg C | 0.00 | 0.00 | 0.00 | 0.00  |
| BCCpa | kg C | 0.00 | 0.00 | 0.00 | 0.00  |

BCCpr = Biogenic carbon content in product

BCCpa = Biogenic carbon content in packaging

### REKENREGELS

Conform de Bepalingsmethode worden alle processen tot de einde-afval status toegekend aan het afvalproduct. Dit omslagpunt van afval tot nieuw product ligt in het geval van puinrecycling na het breken van puin. Er is gerekend met procesgegevens uit het jaar 2021.

### SCENARIOS EN AANVULLENDE TECHNISCHE INFORMATIE

Betonggranulaat geproduceerd uit bouw- en sloopafval



### DECLARATIE VAN SVHC

Er zijn geen stoffen opgenomen in het product die de limiet voor registratie overschrijden die zijn opgenomen in de laatste "Kandidaatlijst van zeer zorgwekkende stoffen voor autorisatie".



### REFERENTIES

- EN 15804:2012+A1:2013 en A2:2019 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products. 1 November 2013.
- NBN EN 16810:2017 Resilient, textile and laminate floor coverings - Environmental product declarations - Product category rules. May 2017
- Stichting Nationale Milieudatabase. Bepalingsmethode Milieuprestatie Bouwwerken. Versie 1.0 (juli 2020).
- ISO 14040:2006. Environmental management – Life cycle assessment – Principles and framework. 2006.
- ISO 14044:2006. Environmental management – Life cycle assessment – Requirements and guidelines. 2006.
- ISO 21930:2017. Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services. 2017.
- ISO 14025:2006. Environmental labels and declarations – Type III environmental declarations – Principles and procedures. 2006.
- SGS INTRON report: A106090/R20210347, oktober 2022



### OPMERKINGEN

Geen