

**Environmental  
Product  
Declaration**

According to EN15804+A2 (+indicators A1)

This declaration is for:  
**Portlandvliegasement CEM II/B-V 42,5 N**

Provided by:  
**Hollandse Cement Maatschappij B.V.**



MRPI® registration  
**1.1.00757.2025**

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**Stichting MRPI®**  
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**15-1-2030**

## COMPANY INFORMATION

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## MRPI® REGISTRATION

1.1.00757.2025

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15-1-2025

## EXPIRY DATE

15-1-2030

## SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Gert-Jan Vroege, Eco Intelligence. The LCA study has been done by Odile Koenders, SGS Search. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

## PROGRAM OPERATOR

Stichting MRPI®  
 Kingsfordweg 151  
 1043 GR  
 Amsterdam

## PRODUCT

Portlandvliegasement CEM II/B-V 42,5 N

## DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (t)

## DESCRIPTION OF PRODUCT

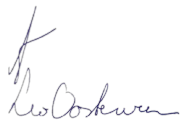
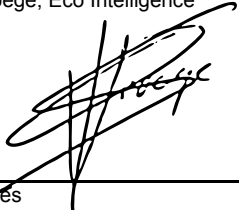
Portlandvliegasement CEM II/B-V 42.5 N is made in Moerdijk by mixing a combination of Portland cements and pulverised coal fly ash in a purpose-built 'dry substance mixer'. Portland fly ash cement CEM II/B-V 42.5 N has a normal initial and final strength, which increases considerably even after the standard 28-day hardening. This cement can be used in combination with all other cements based on Portland cement clinker.

## VISUAL PRODUCT



## MORE INFORMATION

[https://www.hcmcement.nl/nl/producten/portlandvliegasement-br-cem-ii-b-v-42-5-n-br-hcm-cement-moerdijk-/](https://www.hcmcement.nl/nl/producten/portlandvliegasement-br-cem-ii-b-v-42-5-n-br-hcm-cement-moerdijk/)

<b>Ing. L. L. Oosterveen MSc. MBA</b> <b>Managing Director MRPI</b>	<b>DEMONSTRATION OF VERIFICATION</b>
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration an data according to EN15804+A2 (+indicators A1)
	internal: _____ external: X
	Third party verifier: Gert-Jan Vroege, Eco Intelligence 
[1] PCR = Product Category Rules	

## DETAILED PRODUCT DESCRIPTION (PART 1)

Portlandvliegascement CEM II/B-V 42.5 N is made in Moerdijk by mixing a combination of Portland cements and pulverised coal fly ash in a purpose-built 'dry substance mixer'. The fly ashes come from pulverised coal-fired power plants, where they are separated from the flue gases electrically or mechanically. Portlandvliegascement CEM II/B-V 42.5 N has a normal initial and final strength, which increases considerably even after the standard 28-day hardening. This cement can be used in combination with all other cements based on Portland cement clinker.

Component (> 1%)	% (m/m)/ton
Clinker	65-79%
Fly ash	21-35%

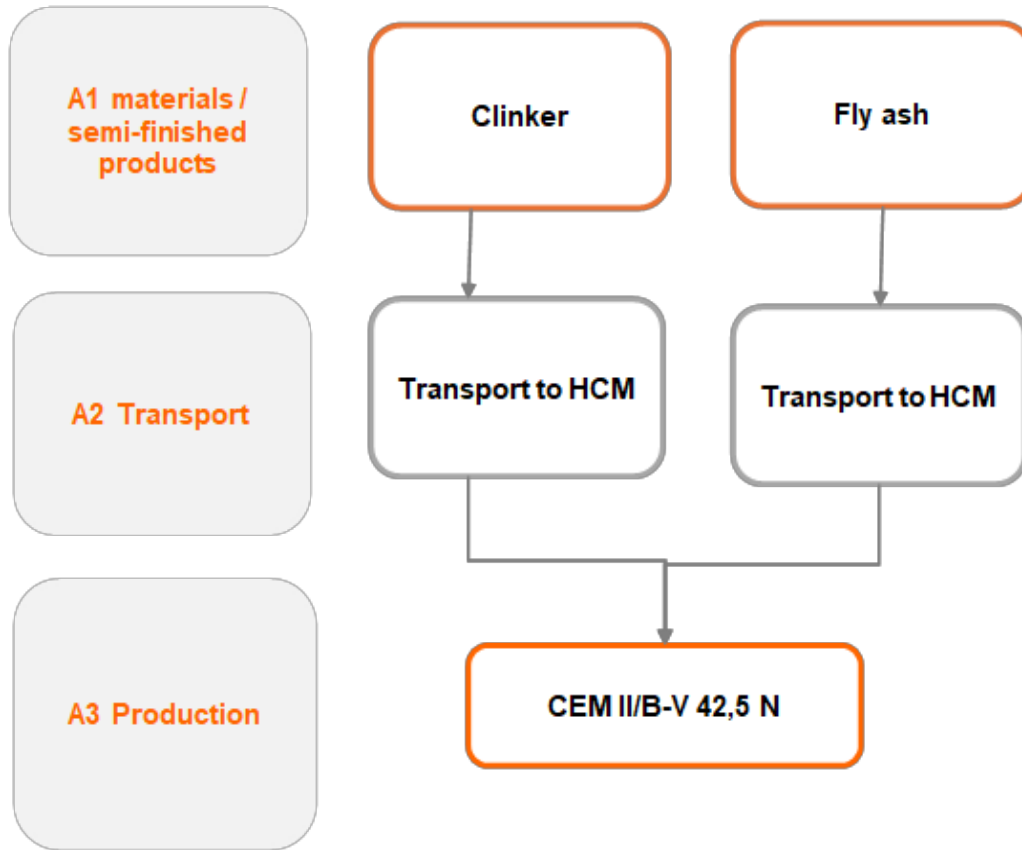
## SCOPE AND TYPE

This EPD is a specific EPD made for Portlandvliegascement produced in facility Moerdijk, The Netherlands. The material input are from suppliers across the globe. The data collection is done in production year 2023. The results are calculated with SimaPro 9.5.0.0, using the databases ecoinvent 3.6 and the NMD process database 3.9 (cut-off method system model).

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USER STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
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



## REPRESENTATIVENESS

## ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

Einheid	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	9,49E-03	2,21E-04	2,57E-05	9,73E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	MJ	4,72E+03	2,93E+02	2,21E+00	5,01E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP	kg CO2 eq.	6,94E+02	2,14E+01	1,85E-01	7,15E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	4,78E-05	3,65E-06	1,30E-08	5,14E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg ethene eq.	1,76E-01	2,46E-02	1,33E-04	2,00E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	kg SO2 eq.	1,43E+00	4,24E-01	1,60E-03	1,85E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP	kg (PO4) 3- eq.	2,58E-01	4,73E-02	1,45E-04	3,06E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

### Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	1,65E+02	1,17E+01	5,34E-01	1,77E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FAETP	kg DCB eq.	3,15E+00	2,21E-01	9,62E-03	3,38E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAETP	kg DCB eq.	1,49E+04	9,84E+02	2,24E+01	1,59E+04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETP	kg DCB eq.	1,96E+00	3,49E-02	2,90E-02	2,02E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ECI	euro	6,00E+01	4,42E+00	6,97E-02	6,45E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	kg Sn eq.	2,27E+00	1,41E-01	1,06E-03	2,41E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- 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



## ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq	6,99E+02	2,16E+01	1,93E-01	7,21E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-fossil	kg CO2 eq	6,99E+02	2,16E+01	1,91E-01	7,21E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-biogenic	kg CO2 eq	-1,85E-01	-3,07E-04	6,74E-04	-1,85E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-luluc	kg CO2 eq	5,65E-02	1,27E-02	2,01E-04	6,94E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq	5,85E-05	4,60E-06	1,48E-08	6,31E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	mol H+ eq.	1,89E+00	5,30E-01	1,89E-03	2,42E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-fresh water	kg PO4 eq.	5,53E-03	1,11E-04	1,51E-05	5,66E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg N eq.	5,88E-01	1,30E-01	2,30E-04	7,18E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol N eq.	6,74E+00	1,44E+00	2,56E-03	8,18E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg NMVOC eq.	1,70E+00	3,80E-01	7,75E-04	2,08E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals	kg Sb eq.	9,49E-03	2,21E-04	2,57E-05	9,73E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil	MJ, net calorific value	4,68E+03	2,96E+02	2,08E+00	4,98E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WDP	m3 world eq. Deprived	4,40E+01	6,03E-01	5,83E-02	4,46E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GWP-total = Global Warming Potential total

GWP-fossil = Global Warming Potential fossil fuels

GWP-biogenic = Global Warming Potential biogenic total

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 [1]

ADP-fossil = Abiotic Depletion for fossil resources potential [1]

WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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 experience with the indicator.



## ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	3,15E-05	9,98E-07	1,48E-08	3,25E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	2,06E+01	1,28E+00	7,48E-03	2,19E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	7,35E+03	2,05E+02	1,41E+01	7,57E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	3,79E-06	1,08E-08	1,21E-09	3,80E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	4,89E-06	1,87E-07	2,96E-08	5,11E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	-	1,21E+03	1,36E+02	4,10E+00	1,35E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- 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.

### 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 experience with the indicator.

## OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	8,20E-02	4,15E-04	1,36E-05	8,24E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NHWD	kg	4,34E+01	8,76E+00	2,13E-01	5,24E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWD	kg	2,80E-02	2,05E-03	7,48E-06	3,00E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MFR	kg	4,98E-05	0,00E+00	4,32E-02	4,32E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MER	kg	0,00E+00	0,00E+00	4,47E-03	4,47E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EEE	kg	0,00E+00	0,00E+00	4,24E-02	4,24E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETE	kg	0,00E+00	0,00E+00	7,29E-02	7,29E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- HWD = Hazardous Waste Disposed
- NHWD = Non Hazardous Waste Disposed
- RWD = Radioactive Waste Disposed
- CRU = Components for reuse
- MFR = Materials for recycling
- MER = Materials for energy recovery
- EEE = Exported Electrical Energy
- ETE = Exported Thermal Energy



## RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3,10E+02	2,55E+00	4,87E+01	3,61E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERM	MJ	1,69E-01	0,00E+00	0,00E+00	1,69E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERT	MJ	3,10E+02	2,55E+00	4,87E+01	3,61E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRE	MJ	4,95E+03	3,15E+02	2,23E+00	5,27E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRM	MJ	1,44E+01	0,00E+00	0,00E+00	1,44E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRT	MJ	4,96E+03	3,15E+02	2,23E+00	5,28E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SM	kg	1,96E-05	0,00E+00	7,91E-03	7,93E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RSF	MJ	3,19E+02	0,00E+00	0,00E+00	3,19E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FW	m3	1,10E+00	2,13E-02	1,81E-03	1,12E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- 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
- NSRF = Use of non-renewable secondary fuels
- FW = Use of net fresh water

## BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

- BCCpr = Biogenic carbon content in product
- BCCpa = Biogenic carbon content in packaging

## CALCULATION RULES (PART 1)

### Declared unit

The declared unit for the life cycle assessment is 1000 kg of Portlandvliegascement.

### Data collection

Input- and output data has been provided by HCM of the production year 2023 for the following inventory categories:

- Materials (raw materials and auxiliary materials);
- Energy (electricity and heat);
- Emissions to air, water and soil;
- Treatment and disposal of production wastes.

### Data quality

Data was validated by SGS at the process level. This means that not only the mass balance was verified, but that in the case of major deviations from the average (for all type of in- and output) the suppliers were asked for further explanation.

### Allocations

Allocation of environmental interventions can apply to multi-input, multi-output, recycling and reuse processes. No allocation of multi output processes is applied in this study. For other allocations, the provisions from the EN 15804 are followed.

## SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

### Product stage (A1-A3)

This stage consists of the extraction of raw materials, energy which occurs upstream to the manufacturing process, transportation of raw materials, processing of the raw materials into the final product with all processes and energy required for production as well as packaging materials.

Data collection was performed by HCM in cooperation with their suppliers. The manufacturer compiled mass and energy balances based on average production in year 2023. The production facility in Moerdrecht uses renewable electricity in their production process.

## DECLARATION OF SVHC

No substances of very high concern are present in concentrations greater than 0,1% by weight in the product.

## REFERENCES

NMD Bepalingsmethode Milieuprestatie Bouwwerken 1.2, NMD Januari 2025.

Product Category Rules voor cement en grondstoffen voor cementproductie ("NL-PCR") - versie 1.0

EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.

ISO, 2006. "Environmental management. Life cycle assessment - Principles and framework". ISO 14040:2006.

ISO, 2006. "Environmental management. Life cycle assessment – Requirements and Guidelines". ISO 14044:2006.

ISO, 2000. "Environmental labels and declarations – Type III environmental declarations", ISO/TR 14025:2000.

## REMARKS

