Environmental
Product
Declaration

According to EN15804+A2 (+indicators A1)

This declaration is for:
CEM I 52,5 N (Conform-PCR) - Grouped

Provided by:
Heidelberg Materials Nederland Cement B.V

MRPI® registration:
1.1.01087.2026

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MRPI® REGISTRATION

1.1.01087.2026

DATE OF THIS ISSUE

20-6-2025

EXPIRY DATE

20-6-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Bob Roijen, SGS Intron B.V. The LCA study has been done by Roel van Oosterhout, EcoReview B.V. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'Verification protocol for MRPI LCA project report & EPD 21th of May 2025, V. 5.2'. 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

CEM I 52,5 N (Conform-PCR) - Grouped

DECLARED UNIT / FUNCTIONAL UNIT

1 Mass (kg)

DESCRIPTION OF PRODUCT

Cement with specific properties is produced by intergrinding or blending cement clinker, gypsum and other materials. Cement in scope is unpackaged, bulk cement.

VISUAL PRODUCT

MORE INFORMATION

https://www.heidelbergmaterials-benelux.com/nl

Ing. L. L. Oosterveen MSc. MBA Managing Director MRPI	DEMONSTRATION OF VERIFICATION
	CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration and data according to EN15804+A2 (+indicators A1) Internal: External: X
	Third party verifier: Bob Roijen, SGS Intron B.V
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION

Cement is a hydraulic binder, mainly used for concrete, mortar and cement screed. Cement with specific properties is produced by intergrinding or blending cement clinker, gypsum and other purchased materials like limestone. The origin of the cement clinker used for the cement production is the plant Lixhe & Antoing in Belgium. Cement in scope is unpackaged, bulk cement.

Gross densitiy declared represents the bulk density of the material (mass of a material / total volume it occupies) which includes the solid material plus pores, gaps, or voids).

Component (> 1%)	(kg / %)
Cement Mix	100%
Other	0%

SCOPE AND TYPE

This EPD was developed based in accordance with the PCRs of EN15804+A2, the NMD Assessment Method 1.2 and NL PCR Cement.

SimaPro software was used to perform the LCA. The background databases used are in accordance with the NMD Assessment Method 1.2, which are:
- Ecoinvent (v3.6) for the calculation of results according to EN15804+A1 + EN15804+A2, with characterization according to CML-IA.

The type of this EPD is cradle to factory gate (A1-A3). All major steps from the extraction of natural resources to end-of-life are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product.

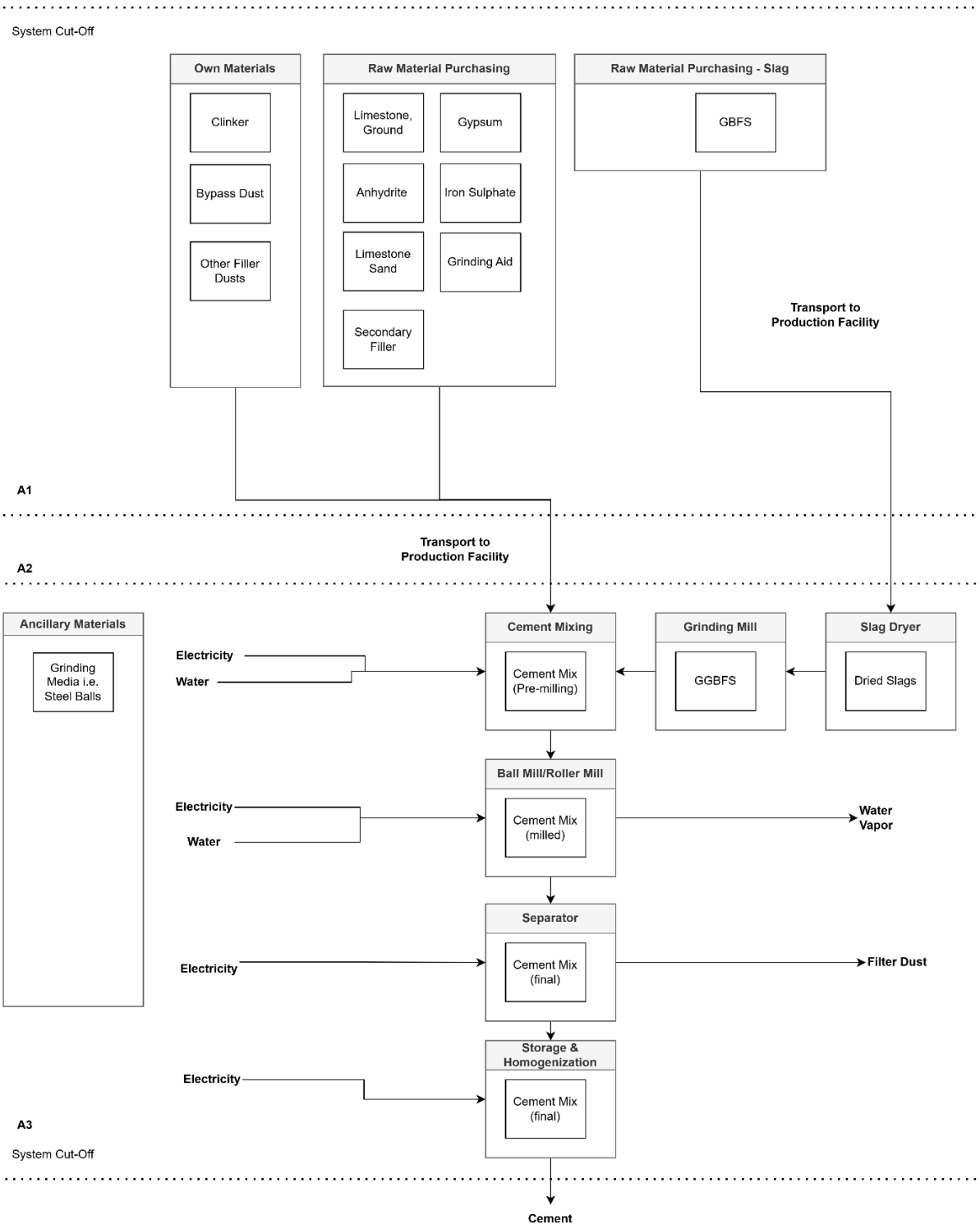
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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

Cement Production Process Diagram

Organisation: Heidelberg Materials - Lixhe, Gent 1 & 2, Ijmuiden, Rotterdam



REPRESENTATIVENESS

EPD is representative for products distributed / sold from the location defined and sold on the Dutch market.

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

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	3,77E-07	5,50E-08	6,45E-08	4,96E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	MJ	2,20E+00	8,05E-02	3,53E-01	2,63E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP	kg CO2 eq.	6,42E-01	6,23E-03	2,39E-02	6,72E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	8,99E-09	9,05E-10	3,52E-09	1,34E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg ethene eq.	1,34E-04	3,71E-06	3,93E-06	1,42E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	kg SO2 eq.	1,07E-03	4,49E-05	4,09E-05	1,16E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP	kg (PO4) 3 eq.	1,75E-04	9,82E-06	8,40E-06	1,93E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	6,89E-02	1,59E-03	6,30E-03	7,67E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FAETP	kg DCB eq.	1,00E-03	4,01E-05	7,85E-05	1,12E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAETP	kg DCB eq.	7,64E+00	1,30E-01	2,95E-01	8,06E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TETP	kg DCB eq.	1,40E-03	7,54E-06	5,66E-05	1,47E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ECI	euro	4,55E-02	7,51E-04	2,07E-03	4,83E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADPF	kg Sb eq.	1,06E-03	3,87E-05	1,70E-04	1,27E-03	ND	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.	6,46E-01	6,30E-03	2,45E-02	6,77E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-fossil	kg CO2 eq.	6,46E-01	6,28E-03	2,41E-02	6,76E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-biogenic	kg CO2 eq.	2,70E-04	9,68E-06	2,96E-04	5,76E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP-luluc	kg CO2 eq.	5,91E-05	1,11E-05	2,58E-05	9,60E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ODP	kg CFC11 eq.	8,10E-09	1,12E-09	2,66E-09	1,19E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
AP	mol H+ eq.	1,42E-03	6,23E-05	5,26E-05	1,54E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-fresh water	kg P eq.	7,36E-06	7,44E-08	1,03E-06	8,46E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg N eq.	4,02E-04	2,62E-05	1,24E-05	4,41E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol N eq.	4,88E-03	2,88E-04	1,51E-04	5,32E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP	kg NMVOC eq.	1,19E-03	7,45E-05	3,78E-05	1,30E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals	kg Sb eq.	3,77E-07	5,50E-08	6,45E-08	4,96E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil	MJ, net calorific value	2,11E+00	8,03E-02	5,62E-01	2,75E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
WDP	m3 world eq. Deprived	1,12E-02	3,70E-04	4,91E-03	1,64E-02	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 biogenictotal
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 inci-dence	6,91E-09	1,65E-10	2,36E-10	7,32E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
IRP	kBq U235 eq.	9,10E-03	3,47E-04	4,54E-03	1,40E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ETP-fw	CTUe	2,51E+00	7,08E-02	2,97E-01	2,88E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-c	CTUh	1,11E-10	2,97E-12	8,28E-12	1,22E-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HTP-nc	CTUh	6,91E-09	5,04E-11	1,45E-10	7,11E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP	-	4,46E-01	6,14E-02	1,29E-01	6,36E-01	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, cancer [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	1,33E-06	2,07E-07	2,55E-07	1,79E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NHWD	kg	8,10E-03	6,82E-04	1,40E-03	1,02E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RWD	kg	8,42E-06	5,21E-07	3,93E-06	1,29E-05	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	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
MER	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
EEE	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
ETE	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

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	7,75E-02	1,82E-03	5,05E-02	1,30E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PERM	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
PERT	MJ	7,75E-02	1,82E-03	5,05E-02	1,30E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRE	MJ	2,20E+00	8,52E-02	5,85E-01	2,87E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PENRM	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
PENRT	MJ	2,20E+00	8,52E-02	5,85E-01	2,87E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SM	kg	5,30E-02	0,00E+00	0,00E+00	5,30E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RSF	MJ	8,28E-01	0,00E+00	0,00E+00	8,28E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NSRF	MJ	1,41E+00	0,00E+00	0,00E+00	1,41E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
FW	m3	3,61E-04	1,49E-05	2,24E-04	5,99E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials
PERM = Use of renewable primary 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

The additional PCR of NL PCR Cement has been followed, which dictates specific NMD datasets for granulated blast furnace slag (ground or non-ground) and fly ash. These datasets allocate impact on these materials through economic allocation.

This EPD is an averaged EPD generated based on a weighted average of product sold in 2023 by Heidelberg Materials. Production locations are the production locations of Lixhe, Gent I, Gent II & IJmuiden.

In order for the averaging to be valid, grouping requirements set by both NMD Assessment Method 1.2 and NL PCR Cement were attained through verification. For further elaboration:
1. In case the deviation on a singular impact category between the average and a location specific product exceeded 20%, the effect on the single score (ECI) never exceeded 20% (NMD Assessment Method 1.2)
2. The deviation between the average and location specific product never exceeded 20% on climate change, fossil and the ECI scores (NL PCR Cement).

"Data quality
Data flows have been modeled as realistically as possible. Data quality assessment is based on the principle that the primary data used for processes occurring at the production site is selected in the first instance. Where this is not available, other reference data is selected from appropriate sources.

Data collection period
The dataset is representative for the production processes used in 2023.

Methodology and reproducibility
The process descriptions and quantities in this study are reproducible in accordance to the reference standards that have been used. The references of all sources, both primary and public sources and literature, have been documented. In addition, to facilitate the reproducibility of this LCA, a full set of data records has been generated."

Cut Off
In this study, all inputs and outputs - such as emissions, energy and material inputs - are included in the calculation according to the Determination Method (5). The contribution to each impact category by the capital goods is calculated to be no more than 5%.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

"A1. Raw materials supply
All materials needed for production are taken into account.

A2. Transport of raw materials to manufacturer
The transportation of the suppliers to production facilities is included.

A3. Manufacturing
All relevant production processes in phase A3, including internal transport and potential production losses, have been included in this study.

For the electricity mix a medium voltage market for dataset has been selected based on the country of origin (production facility). These are:
"Electricity, medium voltage {NL}| market for | Cut-off, U" - 0,64797282 kg CO2 eq./kWh
"Electricity, medium voltage {BE}| market for | Cut-off, U" - 0,24910797 kg CO2 eq./kWh

DECLARATION OF SVHC

Substances of Very High Concern (SVHC) that are listed on the ‘Candidate List of Substances of Very High Concern for authorization’ are declared when contents exceed the limits for registration with ECHA.

REFERENCES

ISO 14025: Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures', International Organization for Standardization, ISO14025:2006.

ISO 14040: Environmental management - Life cycle assessment – Principles and Framework', International Organization for Standardization, ISO14040:2006.

ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines', International Organization for Standardization, ISO14044:2006.

EN 15804: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products', I.S. EN 15804:2012+A1:2013 and EN 15804:2019+A2.

NMD Environmental Performance Assessment Method for Buildings version 1.2 (December 2024)

SGS Intron B.V. (2023, 04 05). Product Category Rules voor cement en grondstoffen voor cementproductie (“NL-PCR”)

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EPLCA. (2025, 10 22). Environmental Footprint reference packages. Retrieved from https://eplca.jrc.ec.europa.eu/LCDN/developerEF.html

PRé Sustainability - Simapro 9.6.0.1