Environmental Product Declaration

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

RAPID cement

CEM I 52,5 N (MS) (LA)

from

Aalborg Portland A/S

This is a product specific EPD.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-06379
Publication date:	2022-07-15
Revision date:	2022-06-29
Valid until:	2027-07-15

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR Construction products and services PCR 2019:14 v 1.2 and cPCR Cement and building lime (EN 16908:2017) v.2022-05-18
PCR review was conducted by: developed within CEN standardisation, and adopted as a c-PCR by the International EPD® System.
Life Cycle Assessment (LCA)
LCA accountability: *Henriette Charlotte Nikolajsen, Aalborg Portland A/S*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☐ EPD verification by individual verifier Third-party verifier: *<name, organisation, and signature of the third-party verifier>* Approved by: The International EPD® System
OR
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by accredited certification body Third-party verification: *Bureau Veritas Certification Sverige AB* is an approved certification body accountable for the third-party verification The certification body is accredited by: *SWEDAC ACKREDITERING, ACKRED nr. 1236*
OR

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:

☐ EPD verification by EPD Process Certification*

Internal auditor: <*name, organisation*>

Third-party verification: <*name, organisation*> is an approved certification body accountable for third-party verification

Third-party verifier is accredited by: <*name of accreditation body & accreditation number, where applicable*>

*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI v4, Section 7.5.

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Aalborg Portland A/S
Contact: Henriette Charlotte Nikolajsen
Description of the organisation: Aalborg Portland A/S was founded in 1889 and is located in the Northern part of the Jutland region of Denmark. Aalborg Portland A/S is the only Portland cement producer in Denmark. The production of cement relies on a semi-dry process, where the limestone is extracted below sea level.
Product-related or management system-related certifications: ISO 14024 Type I environmental labels, ISO 9001, ISO 14001, and ISO 50001 certificates, and UN Global Goals certification by BVC.
Name and location of production site(s): Aalborg, Northern Jutland, Denmark

Mandatory statements

The present EPD complies with the principles and methods described in the general Product Category Rule document for Type III Products Environmental Declaration for construction materials EN 15804:2012 + A2:2019. The applicability of the LCA results and its compliance to the guidelines of the PCR document EN 15804 are done so within the general principles and framework of ISO 14025:2006 for the production of Type III environmental declarations. The life cycle assessment modelling principles adopted are compliant with the ISO 14041-44 standard series. Additionally, this document and underlying calculations comply with the rules described in the Product Category Rule document for Construction Products 2019:14 and the complementary Product Category Rule document for Cement and Building Lime EN 16908:2017.

Product information

Product name: RAPID cement CEM I 52,5 N (LA)
Product identification: Grey Portland cement (CAS-Nr. 65997-15-1)
Product description: RAPID cement is a grey Portland cement, with a strength class of 52.5 N. RAPID cement is a grey Portland cement with a strength class of 52.5 MPa. RAPID cement can be used in concrete for all purposes and in all environmental classes. The RAPID cement is used for ready-mix concrete, but due to a relatively rapid strength development, it can also be used for the production of concrete and concrete products.

Essential characteristics	Performance	Harmonised technical specification
Main constituents and composition	Portland cement clinker: 95-100% Minor additional constituents: 0-5%	EN 197-1:2011
Compressive strength • 2 days • 28 days	 ≥20 MPa ≥ 52.5 MPa	
Initial setting time	≥ 45 min	
Insoluble residue	≤ 5,0 %	
Loss on ignition	≤ 5,0 %	
Soundness - Expansion	≤ 10 mm	
Soundness - SO3 content	≤ 4,0 %	
Chloride content	≤ 0.10 %	

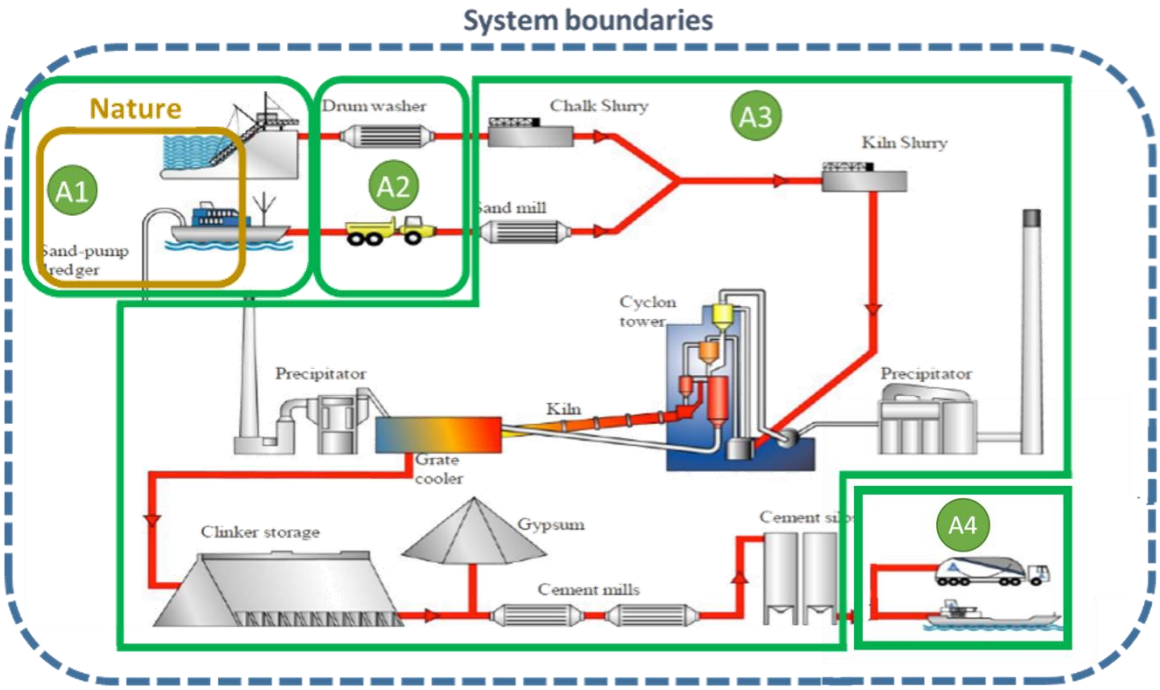
UN CPC code: 37440
Other codes for product classification: ISIC code 2394
Geographical scope: Production in Denmark. Distribution in Denmark and Norway.
Declaration of performance and technical specifications:

- DoP: https://www.aalborgportland.dk/downloads/ydeevnedeklarationer/
- Technical specifications: Can be obtained on request.

LCA information

Declared unit: 1000 kilograms
Reference service life: not applicable
Time representativeness: 2021
Database(s) and LCA software used: ecoinvent v.3.8, cut-off system model (Wernet, 2016)
Description of system boundaries: Cradle to gate with options (A1–A3 + A4)

System diagram and boundaries: The overall system boundaries include extraction and transportation of raw materials as well as all manufacturing processes (cradle-to-gate). The scope of analysis ends with the cement being ready for dispatch. Two optional scenarios for the bulk distribution of the cement by ship (to Oslo, Norway) and truck (to Southern Denmark) from Aalborg, Denmark, are also included. The flow diagram below shows the supply and manufacture processes as well as the A1-A3 + A4 modules definitions.



More information: See https://www.aalborgportland.dk/
Name and contact information of LCA practitioner: Romain Sacchi, Thomas Gert Kristensen, Aalborg Portland A/S

Process description: Portland cement is made by heating, in a cement kiln, a mixture of raw materials (mainly limestone or chalk) to a calcining temperature of above 600°C and then a fusion temperature, which is about 1,450°C to sinter the materials into clinker. To achieve the desired setting qualities in the finished product, a quantity of gypsum and coal fly ash is added to the clinker and the mixture is finely ground to form the finished cement powder.

Cut-off criteria: The cut-off criteria adopted is the following: energy or material flows inferior to 1% of the sum of the mass or energy of the inputs are disregarded. Despite such cut-off criteria, all major raw materials and all the essential energy flows are included. The 1% cut-off rule does not apply for hazardous materials and substances: as such, all flows that have an environmental significance are

included. Also, all solid waste emissions, including those that weight less than 1% of the sum of the mass of the inputs, are reported in the end-results.
The only noticeable inputs that have been omitted are the packaging bags and wood pallets for transport: the relational context of this EPD is business-to-business, where the entirety of the cement volume is transported in bulk.

Allocation: The allocation of co-products used in the cement production process is made in accordance with the provisions of EN 15804 and the cement-specific PCR document. It is either based on physical properties (energy or mass) when the difference in economic return between co-products is small, or on their economic values otherwise. Two inputs have been identified as coming from a multi-output process:

- Electricity from combined heat power plants: An exergy-based allocation is performed to partition the inputs and emissions linked to the delivery of electricity on one side, and the delivery of district heat on the other side.
- Petroleum coke: Hence, an allocation based on their market prices is performed as recommended by EN 15804 and the applicable Construction products and Cement PCRs.
- Coal fly ash and desulphurization gypsum are supplied free of burden, besides the necessary transport operations.

End-of-Waste state: the product system relies on several residual streams of materials used as raw materials or fuel. The polluter-pay principle 100:0 is used: the environmental burden to produce the residual material is associated to the product system responsible for the primary co-product production. However, the end-of-Waste state of the residual material starts with any necessary conditioning and preparation processes of the material to be suitable for reuse, as well as its supply.

Data sources: Data concerning first level transforming activities (cement factory – A3 module) have been obtained directly from the cement producer for the year 2021. Fuel consumption and emissions to model the distribution of cement by ship to Oslo (NO) have been sourced from the logistics operator. Additional background processes have been modelled with the use of LCI database ecoinvent v.3.8, cut-off system model with a time validity span that covers the year 2021 for a large majority of processes.

Electricity: Information regarding electricity generation have been sourced from statistics published by the Danish Ministry of Energy, for the year 2020. Statistics on the Danish electricity consumption mix (production mix and trade movements with Germany, Norway and Sweden) can be found here (Energistyrelsen, 2021). It results in a life-cycle greenhouse gas emission factor of 0.164 kg CO_2-eq./kWh, at low voltage.

Assumptions: Two main assumptions are used for this EPD.
1. While the emissions of CO, SO_2, NO_x, Hg, HCl, TOCs and NH_3 are regularly measured by sensors placed at the chimney outlets of the clinker kilns, CO_2 and H_2O emissions to air are approximated using the formula recommended by the environmental authorities and used when reporting CO_2 emissions for the European Trading Scheme. This assumes that all carbon compounds react during the calcination and become CO_2, which is reasonable to assume at temperatures higher than 1200 degree Celsius – although minor emissions of CO exist, which are themselves measured and accounted for.
2. Although loading and unloading locations for material transport are known, a certain inaccuracy remains around transport distances (in most cases with maritime transport, the loading city is known, but whether there has been an extra distance to bring the goods to the harbour of departure, is unknown) and the amount of km driven empty.

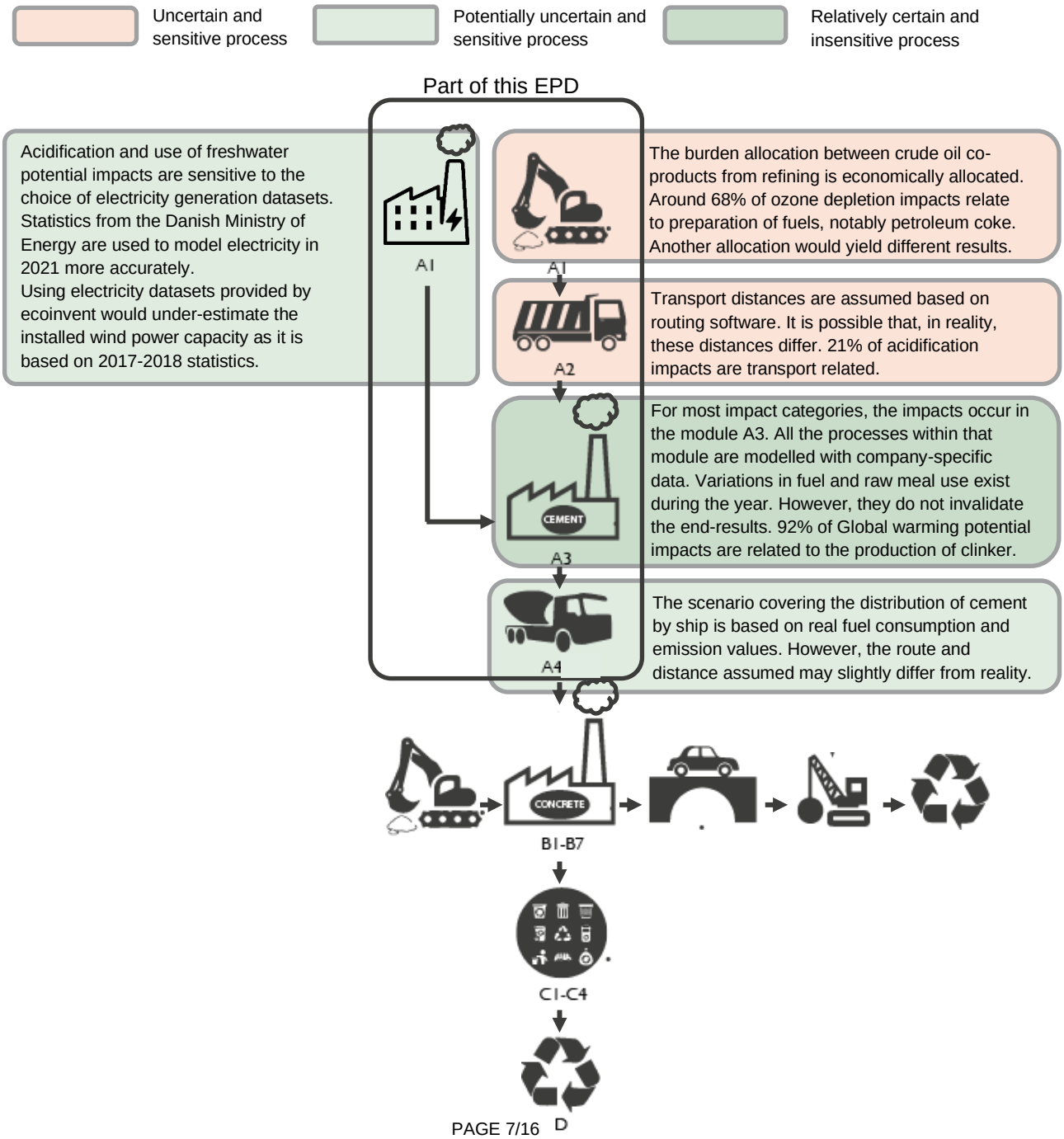
Data quality: Considering that company-specific and externally verified data is used to characterize:

- 92% of the climate-related impacts,
- 90% of the fossil energy use,
- 65% of smog formation-related impacts,
- and 67% of particulate matter formation-related impacts,

the quality and robustness of the environmental indicators presented in this declaration is deemed high.

There are however several environmental indicators which are mostly represented by processes outside of the direct scope of Aalborg Portland and that had to be modelled from secondary sources of data, notably:

- Ozone depletion-related impacts (68% related to raw material and energy extraction)
- Freshwater eutrophication (92% related to raw material and energy extraction)
- Abiotic depletion of fossil fuel resources (89% related to raw material and energy extraction)



Follow-up: Every year company-specific and externally-verified data is used to update the A3 module of the underlying LCA model. An internal follow-up procedure ensures that this EPD is updated should any of the environmental indicators presented below increase by more than 10%.

Distribution scenarios

1. Oslo, Norway

The ship leaves Aalborg full (4000 tons) to reach Oslo (420 km) and returns empty. The specific fuel consumption as well as emissions of CO_2, NO_x and SO_x have been calculated based on the engine manufacturer specifications. The ecoinvent 3.8 dataset "transport, freight, sea, bulk carrier for dry goods [GLO]" for bulk shipping is adapted based on these specifications.

	Distance [km]	Capacity utilisation [%]	Bulk density [kg/m^3]	Fuel consumption [kg fuel/trip]	per ton transported [kg/t]	Fuel consumption [kg/ton-km, exhaust]	CO_2 [kg/ton-km, exhaust]	NO_x [kg/ton-km, exhaust]	SO_x [kg/ton-km, exhaust]
From Aalborg to Oslo	420	100%	3010	5000	1.25	0.00298	0.0094	1.19e-4	3.57e-06
From Oslo to Aalborg	420	0%	0	1448	0.36	0.00086	0.0027	4.30e-5	7.75e-07
Sum (return trip, per ton-km)						0.00384	0.0121	1.62e-04	4.35e-06

2. Southern Denmark

A representative average distance (265 km) from the cement plant (Aalborg, Northern Jutland) to Southern Jutland (Aabenraa, Southern Jutland, Denmark) is used. In this scenario, the cement is transported in bulk by road, using a fleet average truck with a gross vehicle weight superior to 32 tons, over 265 km, to reach Southern Jutland (Aabenraa). The size, gross vehicle weight and load factors are sourced from the ecoinvent dataset and remain unchanged. The ecoinvent dataset used is "transport, freight, lorry >32 metric ton, EURO6 [RER]". The truck leaves full but returns empty, which yields to a lifetime-weighted load factor of approximately 50%. This fits rather well with the load factor assumed by the ecoinvent dataset, which is itself based on European statistics.

	Distance [km]	Bulk density [kg/m^3]	Cargo carrying capacity [tons]	Load [tons]	Capacity utilisation [%]	Emission standard	Fuel consumption [L/100/ton-km]	CO_2 [kg/ton-km, exhaust]	NO_x [kg/ton-km, exhaust]	SO_x [kg/ton-km, exhaust]
From Aalborg to Aabenraa	265	3010	29.96	15.96	53%	EURO-6	2.24	0.0575	2.63e-5	3.13e-7

Modules declared, geographical scope, share of specific data (in GWP-GHG indicator) and data variation:

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Geography	GLO, EU27		DK	DK, NO													
Specific data used	Proxy data		>90 %	3%		-	-	-	-	-	-	-	-	-	-	-	-
Variation – products						-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites						-	-	-	-	-	-	-	-	-	-	-	-

Content information

Product components	Weight, kg	Weight, %
Cement clinker	926	92.6%
Gypsum	43	4.3%
Limestone-based filler	41	4.1%
Other primary materials	<1	< 0.1%
Other secondary materials	<1	< 0.1%
TOTAL	1010	100%

The sum is superior to 1’000 kg because of the moisture contained in the gypsum, which evaporates afterwards.

Dangerous substances

Aalborg Portland is conscious of the REACH directive and the impact of the REACH directive on which Aalborg Portland´s business and products have been evaluated. Aalborg Portland certifies that it is not using any chemicals that fall under the REACH regulation.
However, Aalborg Portland continues to evaluate, research and review to fulfil the demands of the regulation, including the Candidate List of Substance of Very High Concern. See the certification letter from the link below.

http://www.aalborgportland.dk/media/pdf_filer/reach_erklaering_epd.pdf

Emissions of substances of concern in the air, including mercury, are constantly measured via sensors, and kept under the limits set by the European environmental agency.
Finally, with the addition of ferrous sulphate in the cement, water-soluble chromate is transformed into a non-soluble state that does no longer lead to skin-related health issues.

Release to waters and soils
The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonized test methods according to the provisions of the respective technical committees for European product standards are not available.

Indoor environment
The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonized test methods according to the provisions of the respective technical committees for European product standards are not available.

Carbon footprint
The carbon footprint of the declared product has been carried out as part of this EPD and in compliance with ISO 14067:2018. It refers to a partial carbon footprint with a cradle-to-gate scope.
The indicator GWP100a is expressed in kg of CO_2-eq. and is calculated from the characterization factors of IPCC. It defines the carbon footprint of this product and is indicated in the Potential Environmental Impacts table under Global warming potential (GWP-fossil).
The release of carbon dioxide of biogenic origin is equally specified in the same table, under Carbon dioxide, biogenic (GWP-biogenic).

Environmental Information

Potential environmental impact – mandatory indicators according to EN 15804

Results per declared unit (1000 kilograms of cement)							
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4 (420 km by ship)****	**A4 (265 km by road)****
GWP-total	kg CO_2 eq.	5.29E+01	1.95E+01	8.07E+02	8.79E+02	1.2E+01	2.3E+01
GWP-biogenic	kg CO_2 eq.	-9.49E+01	6.96E-03	9.42E+01	-7.48E-01	0.0E+00	0.0E+00
GWP-fossil	kg CO_2 eq.	1.48E+02	1.94E+01	7.13E+02	8.80E+02	1.2E+01	2.3E+01
GWP-luluc	kg CO_2 eq.	5.50E-02	1.15E-02	7.18E-03	7.36E-02	5.18E-03	0.00E+00
ODP	kg CFC 11 eq.	8.87E-06	4.06E-06	8.00E-07	1.37E-05	2.46E-06	5.75E-05
AP	mol H^+ eq.	6.54E-01	3.55E-01	6.72E-01	1.68E+00	1.24E-01	7.34E-02
EP-freshwater	Kg P eq.	2.42E-02	3.65E-04	1.64E-03	2.62E-02	8.73E-05	4.88E-04
EP-marine	kg N eq.	1.49E-01	8.98E-02	2.50E-01	4.89E-01	5.54E-02	1.65E-02
EP-terrestrial	mol N eq.	1.58E+00	9.90E-01	3.33E+00	5.90E+00	6.14E-01	1.80E-01
POCP	kg NMVOC eq.	3.94E-01	6.20E-05	7.31E-01	1.12E+00	1.53E-01	7.08E-02
ADP-minerals & metals*	kg Sb eq.	1.92E-03	0.00E+00	9.45E-04	2.87E-03	1.02E-05	5.68E-05
ADP-fossil*	MJ	3.41E+03	2.64E+02	1.02E+02	3.78E+03	1.48E+02	3.68E+02
WDP*	m^3	4.90E+01	1.69E+00	9.48E+00	6.01E+01	3.28E-01	1.7E+00
Acronyms	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 Exceedance; 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 Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption						

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*
*** It is possible to adapt the environmental impacts related to distribution to any other given distance by multiplying the environmental impact by (new distance / initial distance).*

Potential environmental impact – additional mandatory and voluntary indicators

Results per declared unit (1000 kilograms of cement)							
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4 (420 km by ship)**	**A4 (265 km by road)**
GWP-GHG	kg CO_2 eq.	1.48E+02	1.94E+01	7.13E+02	8.80E+02	1.2E+01	2.3E+01
PM	Disease incidence	4.60E-06	1.41E-06	1.20E-05	1.80E-05	1.54E-07	2.68E-06
IRP*	kBq U_{235} eq.	6.17E+00	1.30E+00	7.82E-01	8.26E+00	6.83E-01	1.90E+00
ETP-fw**	CTUe	3.85E+03	2.14E+02	5.39E+02	4.60E+03	8.74E+01	3.06E+02
HTTP-c**	CTUh	6.70E-08	1.10E-08	2.83E-08	1.06E-07	4.15E-09	7.95E-09
HTTP-nc**	CTUh	2.08E-06	1.98E-07	4.32E-06	6.59E-06	3.83E-08	3.11E-07
SQP**	Dimensionless	1.26E+03	1.50E+02	3.01E+02	1.71E+03	2.00E+01	4.29E+02
Acronyms	PM = Particulate matter formation, impact on human health; IRP = Ionising radiation: human health, human exposure efficiency relative to U_{235}; ETP-fw = Ecotoxicity: freshwater, comparative toxic unit for ecosystems (CTUe); HTTP-c = Human toxicity: carcinogenic, comparative toxic unit for human (CTUh); HTTP-nc = Human toxicity: non-carcinogenic, comparative toxic unit for human (CTUh); SQP = Land use, soil quality index.						

* *Disclaimer: 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: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Use of resources

Results per declared unit (1000 kilograms of cement)							
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4 (420 km by ship)**	**A4 (265 km by road)**
PERE	MJ	1.48E+03	4.86E+00	9.32E+01	1.58E+03	7.90E-01	1.5E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.48E+03	4.86E+00	9.32E+01	1.58E+03	7.90E-01	1.5E+01
PENRE	MJ	4.71E+03	2.85E+02	1.12E+02	5.10E+03	1.61E+02	5.87E+02
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	4.71E+03	2.85E+02	1.12E+02	5.10E+03	1.61E+02	5.87E+02
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.21E+00	3.93E-02	1.92E+00	3.17E+00	7.64E-03	1.20E-01
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources 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 excluding non-renewable primary 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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water						

Waste production and output flows

Waste production

Results per declared unit (1000 kilograms of cement)							
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4 (420 km by ship)**	**A4 (265 km by road)**
Hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-hazardous waste disposed	kg	0.00E+00	0.00E+00	4.46E+00	4.46E+00	0.00E+00	0.00E+00
Radioactive waste disposed	kg	1.64E-07	0.00E+00	3.25E-08	1.97E-07	0.00E+00	0.00E+00

Output flows

Results per declared unit (1000 kilograms of cement)							
Indicator	**Unit**	**A1**	**A2**	**A3**	**Tot.A1-A3**	**A4 (420 km by ship)**	**A4 (265 km by road)**
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	0.00E+00	0.00E+00	4.46E+00	4.46E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Information on biogenic carbon content

Results per functional or declared unit		
BIOGENIC CARBON CONTENT	**Unit**	**QUANTITY**
Biogenic carbon content in product	kg C	0
Biogenic carbon content in packaging	kg C	Not applicable

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO_2

Differences versus previous versions

Regarding the previous 2015 EPD, the new EPD has higher scores in terms of GWP-fossil, ODP and ADP-fossil. This is due to minor changes in the product recipe as well as different performances of the clinker kiln. This correlates well with a 9% increase for the ADP-fossil indicator.

		This EPD	2015 EPD
	unit	**A1-A3**	
GWP-fossil	*kg CO2-eq.*	8.80E+02	+2%
ODP	*kg CFC-11-eq.*	1.37E-05	+15%
ADP-fossil	*MJ*	3.78E+03	+9%

References

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