ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Lafarge Egypt
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Issue date	21/03/2024
Valid to	20/03/2029

Production of Sulphate resisting cement at El Sokhna plant, Bagged

EPD version: 1

CEM I 42,5 N SR5
EN 197-1 (ES 4756-1)

Lafarge Egypt

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1 General Information

Lafarge Egypt

Programme holder
IBU - Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number
IBU-HOL-HOL-2401100-EG2024000003-1SUE001-EN

This declaration is based on the product category rules:
Cement, 07/2023
(PCR checked and approved by the SRV)

Issue date
21/03/2024

Valid to
20/03/2029

Hans Peters
(Chairman Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

Sulphate resisting cement

Owner of the declaration
Lafarge Egypt
Kilo 93 Kattameia
El Ein El Sokhna
Suez, Egypt

Declared product / Declared unit
1000 kg of Sulphate resisting cement

Scope:
This environmental product declaration shows the life cycle assessment of the production of 1000 kg of Sulphate resisting cement at the El Sokhna plant of Lafarge Egypt.

The EPD was calculated with the pre-verified software EN 15804 EPD Generator - Cement of Holcim.

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of *EN 15804+A2*. In the following, the standard is simple referred to as *EN 15804.*

Verification

The *standard EN 15804* serves as the core PCR
Independent verification of the declaration and data according to *ISO 14025:2011*
☐ internally ☒ externally

Matthias Schulz
(Independent verifier)

2 Product

2.1 Product description/Product definition

Sulphate resisting cement is a CEM I 42,5 N SR5 cement which is produced and monitored in accordance with *EN 197-1 (ES 4756-1)*. This cement is a hydraulically hardening binder for the production of concrete and mortar. It consists of a mixture of finely ground, non-metallic, inorganic components. After adding water to the cement, a suspension (cement paste) is formed, which solidifies and hardens both in air and under water due to the onset of a hydration reaction and remains permanently solid. The composition of the product corresponds to the specifications of *EN 197-1 (ES 4756-1)*.

Regulation (EU) No. 305/2011(CPR) applies to placing the product on the market in the EU/EFTA (with the exception of Switzerland). The product requires a declaration of performance taking into account EN 197-2:2014-05, Cement - Part 2: Conformity assessment and the CE marking.

The respective national regulations apply to their use.

2.2 Application

Sulphate resisting cement is used as a binder in the manufacture of concrete and mortar.

2.3 Technical data

Sulphate resisting cement has the following technical characteristics:

Technical data

Name	Value	Unit
Strength class acc. to EN 197-1 (ES 4756-1)	42,5 N	N/mm2

Performance values of the product correspond to the performance declaration in relation to its essential characteristics according to EN 197-1:2011-11 Composition, requirements and conformity criteria of common cement (ES 4756-1).

2.4 Delivery status

Sulphate resisting cement is delivered in sacks of 50 kg.

2.5 Base materials/Ancillary materials

Portland cement clinker (ca. 95 - 100%)

Cement clinker is made from a mixture of raw materials that is heated in a kiln at a temperature of over 1400°C until it is sintered. The starting materials for the production of cement clinker must mainly contain calcium oxide (CaO) and silicon dioxide (SiO2) as well as small amounts of oxides of aluminum (Al2O3) and iron (Fe2O3). Rocks that provide these compounds are limestone, marl and clay or their naturally occurring mixture.

Minor constituents (ca. 0 - 5%) + Calcium sulfates

Minor components are specially selected, inorganic, natural mineral substances, inorganic mineral substances from clinker production or main cement components, unless the latter are already contained as the main component in the cement. Secondary components can either be inert or have hydraulic, latently hydraulic or pozzolanic properties. Gypsum is also added to the binder as setting regulators.

This product contains substances listed in the candidate list (date: 14.06.2023) exceeding 0.1 percentage by mass: no

This product contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) Ordinance on Biocide Products No. 528/2012): no

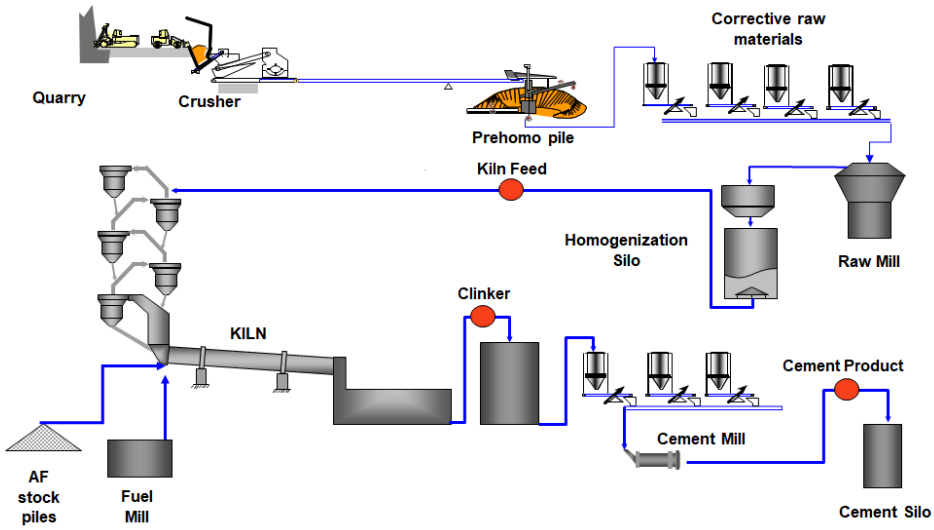
2.6 Manufacture

Production of Portland cement clinker

Limestone, marl, clay or their natural mixture, are required for the production of Portland cement clinker. These starting materials are mined in quarries, pre-crushed and transported to the nearby cement works. There they are homogenized into an intermediate product, with additional natural or secondary corrective substances being added to fine-tune the chemical composition. In the subsequent heating process, the Portland cement clinker is produced from the intermediate product. The firing process takes place in a rotary kiln, where the material is thermally converted at around 1450 °C and then rapidly cooled. The finished clinker is stored in silos.

Cement Production

To produce the final cement product, the Portland cement clinker is ground into a fine powder. A sulfate carrier is added to control the setting behavior.



2.7 Environment and health during manufacturing

The plant operation is subject to the provisions of the Egyptian environmental regulation, in particular the *Law No. 4* of 1994 relating to the regulations applicable to establishments for the protection of the environment. *Law No. 4* of 1994 relates to atmospheric emission control, limiting liquid effluents from industrial discharges and regulating noise emissions.

Furthermore, measures are taken to protect workers from potential exposure to respirable crystalline silica dust in accordance with the European social agreement Negotiation Platform on Silica. An environmental management system according to *ISO 14001* is installed in the plant. The plant also complies with *ISO 45001* occupational health and safety management system and *ISO 9001:2015* quality management system.

2.8 Product processing/Installation

General
Mixing cement and water creates the cement paste, which encases the individual grains of the aggregate in concrete or mortar and binds them together firmly as it hardens. The cement paste, which is liquid after the addition of water turns into the solid cement paste. Today, fresh concrete is produced almost exclusively in ready-mixed concrete plants, on large construction sites or in precast plants in medium-sized and large mixing plants.

Environment and health during product processing
The dust particles of the product can irritate the eyes and respiratory system.

If the product comes into contact with water or if the product gets wet, an alkaline solution will be formed which may cause skin and eye irritation.

Water-soluble chromate may develop allergic chromate dermatitis with prolonged contact. Therefore, Sulphate resisting cement is low in chromate according to the REACH Regulation.

2.9 Packaging

The following packaging materials are used when the product is sold in paper sacks of 50 kg capacity:

- **Paper sack:** 3.5 kg

2.10 Condition of use

Not relevant for Sulphate resisting cement .

2.11 Environment and health during use

Not relevant for Sulphate resisting cement .

2.12 Reference service life

Not relevant for Sulphate resisting cement .

2.13 Extraordinary effects

Fire
Sulphate resisting cement is neither flammable nor explosive. The product is classified in Class A1 according to *EN 13501-1.*

Water
When cement reacts with water, the so-called hydrate phases arise, which cause the cement paste to solidify and harden to form cement paste. If larger amounts of cement are accidentally released into bodies of water, the pH value in the body of water can increase. Water quality specifications according to Egyptian code for concrete *ECP203-2020*, article 2-2-3.

Mechanical destruction
Not relevant for Sulphate resisting cement .

2.14 Re-use phase

Not relevant for Sulphate resisting cement .

2.15 Disposal

If the cement has to be disposed of, it should be hardened with water and disposed off in accordance with local regulations. Disposal of construction and demolition waste as per the Egyptian waste management *Law 202/2020*.

2.16 Further information
Further information: https://www.lafarge.com.eg/en

3 LCA: Calculation rules

3.1 Declared unit
The declared unit is 1000 kg cement.

Declared unit

Name	Value	unit
Declared unit	1000	kg
Conversion factor to 1 kg	0,001	-

3.2 System boundary

Type of EPD: cradle-to-factory gate

The system boundaries include the extraction of raw materials through to the finished product at the factory gate. The product stage includes:

Material production and placement

Module A1: Extraction and processing of the raw materials

Module A2: Transport of the raw materials to the factory gate and internal transport

Module A3: Manufacture of final product

The construction stage, the use stage and the disposal stages are not taken into account in the life cycle assessment for the final product.

3.3 Estimates and assumptions
No estimates or assumptions were made that would be relevant for the interpretation of the life cycle assessment results.

3.4 Cut-off criteria
The flows not taken into account are less than 0,01% of the total incoming mass of each elementary process and in total for module A1-A3.

3.5 Background data
The data on which the life cycle assessment is based comes from data collection at the El Sokhna plant. Information on the use of material and energy resources as well as transport distances was provided by Lafarge Egypt.

The emission data used in the life cycle assessment of clinker production are based on the legally prescribed emission measurements on rotary kilns of Lafarge Egypt for the period 01-01-2022 to 31-12-2022.

The life cycle modeling was carried out using the Holcim EN 15804 EPD Generator - Cement version 1.0.0 dated 29.02.2024. Datasets from the background database Ecoinvent (version 3.9.1) were used for the calculation.

3.6 Data quality
The data basis for this EPD is the continuous data acquisition in the El Sokhna plant. The data was collected for the calendar year 01-01-2022 to 31-12-2022 by Lafarge Egypt and checked for plausibility by Holcim Innovation Center. The data quality can be rated as very good.

Any gaps in the collected data were filled in with conservative proxy data. The background datasets are on average less than 5 years old and their quality is rated as good or very good.

3.7 Period under review
Data from the period 01-01-2022 to 31-12-2022 were used for the life cycle assessment of Sulphate resisting cement .

3.8 Geographic Representativeness
Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Egypt

3.9 Allocation
There are no co-products at the El Sokhna plant and therefore all environmental impacts are allocated to the final product.

Kiln dust or bypass dust can be co-produced during clinker production. The sum of the inputs and outputs of this production process are assigned to the clinker.

The materials resulting from reuse, recycling or recovery in the context of the manufacture of cements are:

- Alternative fuels

The alternative fuels used for production are classified as either secondary fuels or waste. Emissions from secondary fuels are included in the environmental impact assessment results, while emissions from the incineration of waste are reported as additional information according to the IBU Cement PCR. The waste status of the fuels concerned was verified using the waste key number. The exclusion of environmental impacts from the incineration of combustible waste was only applied to CO2 emissions, as other emissions (e.g. NOx, SOx, etc.) could not be easily distinguished from different fuel types.

3.10 Comparability
Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. The background database Ecoinvent (version 3.9.1) is used.

4 LCA: Scenarios and additional technical information

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic Carbon Content in product	0	kg C
Biogenic Carbon Content in accompanying packaging	1.38	kg C

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

5 LCA: Results

The following table contains the results of the life cycle assessment for a declared unit of 1000 kg of Sulphate resisting cement .

The characterization factors of the "Environmental Footprint reference Package 3.1" were used to determine the impact balance.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the 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	MNR	MNR	MNR	ND	ND	ND	ND	ND	ND	ND

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1000 kg of Sulphate resisting cement

Core Indicator	Core indicator	Unit	A1-A3
GWP-total	Global warming potential - total	[kg CO_2-Eq.]	862
GWP-fossil	Global warming potential - fossil fuels	[kg CO_2-Eq.]	862
GWP-biogenic	Global warming potential - biogenic	[kg CO_2-Eq.]	0.16
GWP-luluc	GWP from land use and land use change	[kg CO_2-Eq.]	0.04
ODP	Acidification potential, accumulated exceedance	[kg CFC11-Eq.]	4.90e-6
AP	Acidification potential, accumulated exceedance	[mol H^+-Eq.]	1.90
EP-freshwater	Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	2.75e-3
EP-marine	Eutrophication, fraction of nutrients reaching marine	[kg N-Eq.]	0.72
EP-terrestrial	Eutrophication, accumulated exceedance	[mol N-Eq.]	7.89
POCP	Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	2.41
ADPE	Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	2.83e-3
ADPF	Abiotic depletion potential for fossil resources	[MJ]	4565
WDP	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m^3 world-Eq deprived]	51.5

Legend	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1000kg of Sulphate resisting cement

Indicator	Core indicator	Unit	A1-A3
PERE	Renewable primary energy as energy carrier	[MJ]	214
PERM	Renewable primary energy resources as material utilization	[MJ]	63.0
PERT	Total use of renewable primary energy resources	[MJ]	277
PENRE	Non-renewable primary energy as energy carrier	[MJ]	4565
PENRM	Non-renewable primary energy as material utilization	[MJ]	0
PENRT	Total use of non-renewable primary energy resources	[MJ]	4565
SM	Use of secondary material	[kg]	0
RSF	Use of renewable secondary fuels	[MJ]	519
NRSF	Use of non-renewable secondary fuels	[MJ]	293
FW	Use of net fresh water	[m^3]	0.82

Legend	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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net freshwater

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1000kg of Sulphate resisting cement

Indicator	Core indicator	Unit	A1-A3
HWD	HWD Hazardous waste disposed	[kg]	2.57
NHWD	Non-hazardous waste disposed	[kg]	78.0
RWD	Radioactive waste disposed	[kg]	3.12e-4
CRU	Components for re-use	[kg]	0
MFR	Materials for recycling	[kg]	0.35
MER	Materials for energy recovery	[kg]	0
EEE	Exported electrical energy	[MJ]	0
EET	Exported thermal energy	[MJ]	0

Legend	HWD = Hazardous waste disposed; NHWD = Nonhazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for reuse; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2: 1000 kg of Sulphate resisting cement

Indicator	Core indicator	Unit	A1-A3
PM	Potential incidence of disease due to PM emissions	[Disease Incidence]	3.24e-5
IRP	Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	0.61
ETP-fw	Potential comparative toxic unit for ecosystems	[CTUe]	1349
HTP-c	Potential comparative toxic unit for humans - cancerogenic	[CTUh]	3.61e-7
HTP-nc	Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	1.38e-6
SQP	Potential soil quality 2.00	[-]	1668

Legend	PM = Potential incidence of disease due to PM emissions; IRP = Potential Human exposure efficiency relative to U235; ETPfw = Potential comparative Toxic Unit for ecosystems; HTPc = Potential comparative Toxic Unit for humans (cancerogenic); HTPnc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality 2.00

Tips

2.51e2 = 2.51 x 10^2 = 251 4.25e-3 = 4.25 x $\frac{1}{10^3}$ = 0.00425

On Global Warming Potential (GWP):
Net values are declared for all GWP indicators in A1 – A3. The waste status of the (waste-based) fuels used in cement production has been verified. Gross emissions (i.e. including CO_2 from incineration of waste) are 891 kg CO_2-eq. / t (GWP-total), 890 kg CO_2-eq. / t (GWP fossil), 0.16 kg CO_2 eq. / t (GWP-biogenic).
For wastes with biogenic carbon content, gross CO_2 emissions correspond to the uptake of biogenic CO_2 during the biomass growth phase.

Disclaimer 1 - for the indicator "potential Human exposure efficiency relative to U235". 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 radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 –for the indicators: "abiotic depletion potential for fossil resources", "abiotic depletion potential for non-fossil resources", "water (user) deprivation potential", "deprivation-weighted water consumption", "potential comparative toxic unit for ecosystems", "potential comparative toxic unit for humans - cancer effects", "potential comparative toxic unit for humans – non-cancer effects", "potential soil quality 2.00". 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.

6 LCA: Interpretation

The following table shows the most important influencing factors on important indicators of the impact and life cycle inventory analysis.

Category	GWP_{total}	AP	$EP_{terrestrial}$	POCP	PERT	PENRT	ADPE	FW	PM
Clincker Production	95.5 %	91.6 %	95.4 %	94.1 %	14.6 %	88.1 %	17.5 %	61.0 %	91.5 %
Blast furnace slag procution	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Fly ash production	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Burnt oil shale production	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
Sulfate production	0.02 %	0.18 %	0.21 %	0.15 %	0.02 %	0.05 %	80.1 %	0.05 %	0.25 %
Cement production	3.52 %	5.97 %	2.63 %	3.93 %	6.15 %	9.56 %	1.06 %	6.12 %	6.36 %
Dispatch	0.64 %	1.55 %	1.01 %	1.07 %	78.7 %	1.50 %	0.55 %	5.73 %	0.80 %
Other materials and processes	0.29 %	0.74 %	0.70 %	0.78 %	0.50 %	0.77 %	0.77 %	27.1 %	1.08 %
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Legend	**Clinker production:** Includes the impacts related to the production of cement clinker. **Blast furnace slag production**: Includes the upstream and processing impacts for the production of blast furnace slag**. Fly ash production:** Includes the upstream and processing impacts for the production of fly ash**. Burnt oil shale production:** Includes the impacts associated with burnt oil shale production. **Sulfate production:** Includes the impacts related to the production of primary and secondary sulfates. **Cement production:** Includes the impacts associated with the final grinding or mixing stage to produce the final product. **Dispatch:** Includes the impact related to product preparation for shipping. **Other materials and processes:** Includes the impacts of materials or production processes not covered by the above categories.

The contribution of clinker production to the indicators GWP (Global Warming Potential), AP (Acidification Potential of Soil and Water), EP-terrestrial (Eutrophication Potential), POCP (Tropospheric Ozone Creation Potential) and PM (Potential Occurrence of Diseases due to Particulate matter emissions) is largely determined by the exhaust air emissions from the rotary kiln, while the contribution to the PENRT indicator (non-renewable primary energy) is due to the use of fossil fuels and electrical energy.

7 Requisite evidence

7.1 Radioactivity

The radioactivity of cements is currently not routinely measured in Egypt. Literature shows that the activity index for cement, is in the order of magnitude of the activity index for natural soils and rocks (*IAEA*).

7.2 Chromate

According to legal requirements *(European Regulation (EG) 1907/2006 REACH Regulation and Chemicals Prohibition Regulation),* cements or cement-containing preparations that contain more than 2 ppm water-soluble chromate based on the mass of dry cement may not be placed on the market. Exceptions to this are cements that are only used in closed and fully automated processes and where there is no risk of skin contact. Sulphate resisting cement is manufactured with less than 2 ppm of water-soluble chromate.

The content of water-soluble chromium (VI) is determined according to *EN 196-10*. Evidence of compliance with the limit value is provided as part of the factory production control.

8 References

Standards

EN 13501-1
EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests.

EN 197-1
EN 197-1:2011-11, Cement – Part 1: Composition, specifications and conformity criteria for common cements

EN 197-2
EN 197-2:2014-05, Cement - Part 2: Conformity of evaluation

EN 196-10
EN 196-10:2016-11, Methods of testing cement - Part 10: Determination of the water-soluble chromium (VI) content of cement

EN 15804
EN 15804:2012+A2+AC:2021, Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

ES 4756-1

ES 4756-1:2013. (2013). Cement Part:(1) Composition, Specifications And Conformity criteria for common cements.

ISO 14001
EN ISO 14001:2015-11, Environmental management systems - Requirements with guidance for use.

ISO 45001
ISO 45001:2018 Occupational health and safety management systems

ISO 9001:2015
Quality management systems

ISO 14025
EN ISO 14025:2011-10, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

Other literature

CPR
Construction Products Regulation
Establishing harmonized conditions for the marketing of construction products, (EU) No. 305/2011, March 09, 2011.

Holcim EN 15804 EPD Generator - Cement
Version 1.0.0 dated 29.02.2024

Ecoinvent
Database, version 3.9.1, Ecoinvent, 2023.

EF 3.1
Environmental Footprint, ref package 3.1, July 2022 (European Platform on Life Cycle Assessment (EPLCA))

ECP 203-2020
Egyptian Code on the Design and Construction of Concrete Structures

ECHA
European Chemicals Agency (ECHA): Candidate list of substances of very high concern.
https://echa.europa.eu/

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Institut Bauen und Umwelt e.V.: General instructions for the EPD program of Institut Bauen und Umwelt e.V. Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021.
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IAEA 2008
International Atomic Energy Agency, Radioactivity in Building Materials: a first Overview of the European Scenario, 2008

Law No. 4 of 1994
Relating to the management, control of emissions & pollutants.

Law No. 202/2020
Relating to the waste management of construction & Demolition waste.

Negotiation Platform on Silica
Negotiation Platform on Silica (NePSi) ‘Agreement on workers’ health protection through the good handling and use of crystalline silica and products containing it’.

No 528/2012
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products

PCR Part A
Product category rules for building related products Part A: Calculation rules for the life cycle assessment and requirements for the project report according to EN 15804+A2:2021 (v1.3). Berlin: Institut Bauen und Umwelt e.V., 31/08/2022

PCR Cement
Product category rules for building related products and services. Part B: Requirements for the EPD for cement, version 5. Berlin: Institut Bauen und Umwelt e.V. (ed.), 04/07/2023.
www.ibu-epd.com

REACH-Regulation
Registration, Evaluation, Authorisation and Restriction of Chemicals, EG 1907/2006:2006-12-18.

	Publisher IBU - Institut Bauen und Umwelt e.V. Hegelplatz 1 10117 Berlin Germany	Tel +49 (0)30 3087748 - 0 Fax +49 (0)30 3087748 - 29 Mail info@ibu-epd.com Web **www.ibu-epd.com**
	Programme holder IBU - Institut Bauen und Umwelt e.V. Hegelplatz 1 10117 Berlin Germany	Tel +49 (0)30 3087748 - 0 Fax +49 (0)30 3087748 - 29 Mail info@ibu-epd.com Web **www.ibu-epd.com**
	Author of the Life Cycle Assessment Holcim Innovation Center 95 rue du Montmurier 38291 Saint-Quentin Fallavier France	Tel +33 4 74 82 1616 Mail lca@holcim.com Web **www.holcim.com**
	Owner of the Declaration Lafarge Egypt Kilo 93 Kattameia El Ein El Sokhna Suez, Egypt	Tel: +20-2-27689200 Mail: egypt.communications@lafargeholcim.com mahmoud.salaheldin@lafarge.com Web: **https://www.lafarge.com.eg/en**