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Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

CEM II/A-LL 52.5 N

SCHWENK

EPD-Global

Owner of the declaration
SCHWENK Sverige AB

Product
CEM II/A-LL 52.5 N

Declared unit
1 tonne

This declaration is based on Product Category Rules
EN 15804:2012+A2:2019 serves as core PCR
EN 16908:2017 Cement and building lime

Program operator
EPD-Global

Declaration number
NEPD-5093-4427-EN

Issue date
29.09.2023

Latest revision
v1.1 Date: 16.12.2025

Valid to
29.09.2028

EPD software:
LCA.no EPD generator ID: 1348933

General information

Product

CEM II/A-LL 52.5 N

Owner of the declaration

SCHWENK Sverige AB
Contact person: Urs Müller
Phone: +46 40-31 75 52
e-mail: urs.mueller@schwenk.com

Program operator

EPD-Global
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-global.com

Manufacturer

SCHWENK Latvija SIA

Declaration number

NEPD-5093-4427-EN

Place of production

SCHWENK Latvija SIA
Rupnicas iela 10
LV – 3851 Broceni, Latvia

This declaration is based on Product Category Rules

EN 15804:2012+A2:2019 serves as core PCR
EN 16908:2017 Cement and building lime

Management system

ISO 9001 – certifikat 1689ISO 14001 – certifikat 1689MISO 27001 – certifikat 1689I

Statement of liability

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

Organisation no

556089-9287

Declared unit

1 tonne CEM II/A-LL 52.5 N

Issue date

29.09.2023

Declared unit with option

A1-A3, A4

Valid to

29.09.2028

Year of study

2024

Functional unit

Comparability

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are seen in a building context.

General information on verification of EPD from EPD tools

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Global's General Programme Instructions for further information on EPD tools

Development and verification of EPD

The declaration is created using EPD generator v2025.09, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD-Global. NEPDT16

Developer of EPD Urs Mueller

Reviewer of company-specific input data and EPD Lars Busterud

Verification of EPD tool

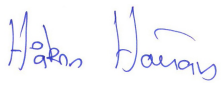
Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPD-Global's procedures and guidelines for verification and approval of EPD tools.

Third party verifier

Ellen Soldal, Norsus AS

(no signature required)

Approved



Håkon Hauan, CEO EPD-Global

Product

Product description

CEM II/A-LL 52.5 N is a hydraulic binder and suitable for the production of concrete according to EN 206 and dry mortar products. The cement can be used as binder for ground stabilization.

Product specification

Portland limestone cement.

Materials	Value	Unit
Cement clinker	80-94	%
Limestone	6-20	%
Minor constituents	0-5	%

Technical data

CEM II/A-LL 52.5 N
Technical information on schwenk.lv

Market

Latvia, Estonia

Reference service life, product

Depending on the area of use.

Reference service life, building or construction works

-

LCA, Calculation rules

Declared unit

1 tonne CEM II/A-LL 52.5 N

Cut-off criteria

All major raw materials and all the essential energy are included. The production processes for raw materials and energy flows with very small amounts (less than 1%) may not be included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. For co-products, an economic allocation is carried out. Furthermore, the processing, when applicable, and transportation of the co-product are included in this analysis.

Data quality

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs in accordance with EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

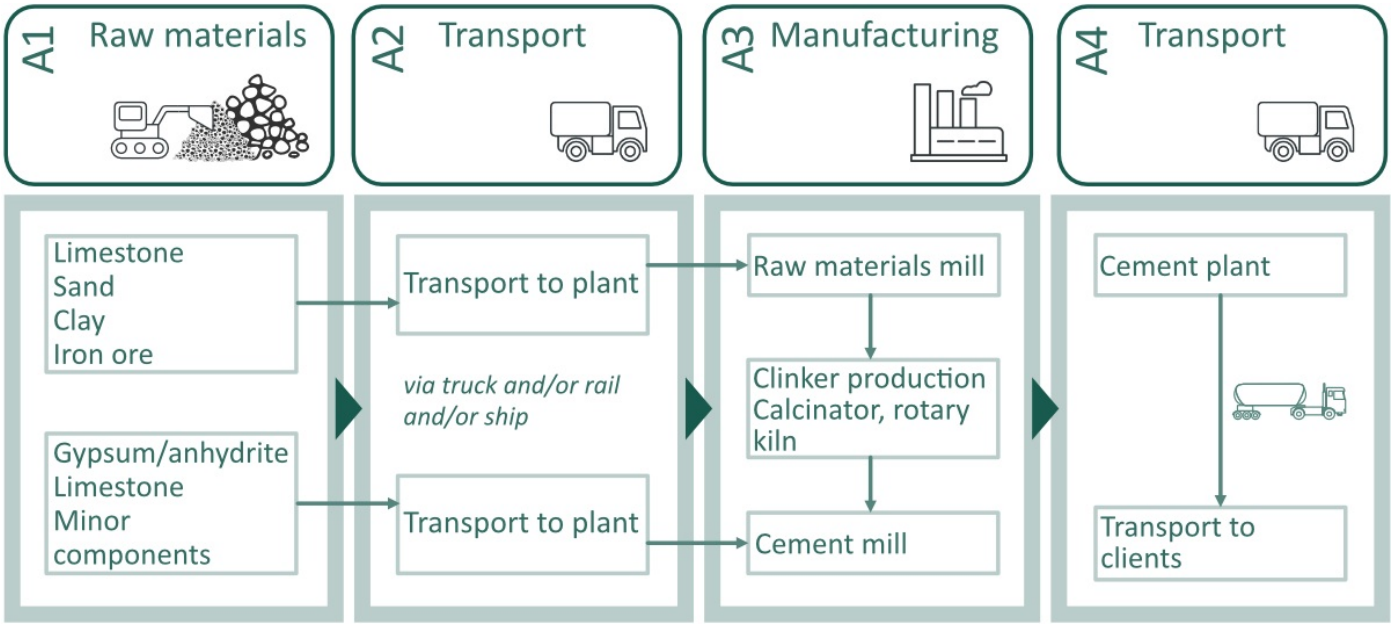
Materials	Source	Data quality	Year
Additives	ecoinvent 3.6	Database	2019
Aggregate	ecoinvent 3.6	Database	2019
Aggregate	LCA.no	Database	2024
Energy from primary fuels, Fossil	ecoinvent 3.10	Database	2023
Raw materials, Mineral	LCA.no	Database	2024
SCM	LCA.no	Database	2024

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage	Use stage								End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	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	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

System boundary

Type of the EPD: cradle to gate (A1 – A3) with option A4. The applied system boundaries cover the production of cement including carbon capture and storage up to the finished product at the factory gate. The product stage includes: - Module A1: Extraction and processing of raw materials - Module A2: Transport of raw materials to the factory gate - Module A3: Clinker and cement production The construction process stage includes: - Module A4: Transport



Additional technical information

A4 emissions represent transport of cement from the cement plant to the client for an average distance of 50 km (by truck).

LCA, Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Transport from production place to user (A4)	Capacity utilisation, incl. return (%)	Distance (km)	Fuel/Energy Consumption	Unit	Value (l/t)
Truck, over 32 tonnes, EURO 6	53.3 %	50.00	0.023	l/tkm	1.15

LCA, Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact				
	Indicator	**Unit**	A1-A3	A4
	GWP-total	kg CO_2 -eq	5.21E+02	4.36E+00
	GWP-fossil	kg CO_2 -eq	5.21E+02	4.35E+00
	GWP-biogenic	kg CO_2 -eq	6.34E-01	1.87E-03
	GWP-luluc	kg CO_2 -eq	7.47E-02	1.33E-03
	ODP	kg CFC11 -eq	1.42E-05	1.05E-06
	AP	mol H+ -eq	2.00E+00	1.40E-02
	EP-FreshWater	kg P -eq	4.01E-03	3.47E-05
	EP-Marine	kg N -eq	7.00E-01	3.07E-03
	EP-Terrestial	mol N -eq	7.78E+00	3.42E-02
	POCP	kg NMVOC -eq	1.90E+00	1.34E-02
	ADP-minerals&metals[1]	kg Sb-eq	1.15E-03	7.76E-05
	ADP-fossil[1]	MJ	1.41E+03	7.07E+01
	WDP[1]	m^3	6.58E+04	5.42E+01

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 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

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

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 experienced with the indicator.

Remarks to environmental impacts

The LCA results in the EPD are calculated using a specific methodological approach for accounting energy resources, see the additional requirements section for more information. In this EPD the following approach was used: Location-based approach.

The core GWP indicators declared do not include the emissions from the combustion of waste fuels (GWP, net). The waste status of the waste-based fuels has been proven. The GWP indicators including the emissions from the combustion of waste fuels (GWP, gross) are reported separately in this EPD under "Additional Environmental Information".

Additional environmental impact indicators				
Indicator		**Unit**	A1-A3	A4
	PM	Disease incidence	1.02E-05	4.00E-07
	IRP[2]	kgBq U235 -eq	5.38E+00	3.09E-01
	ETP-fw[1]	CTUe	1.33E+03	5.17E+01
	HTP-c[1]	CTUh	5.70E-08	0.00E+00
	HTP-nc[1]	CTUh	7.00E-07	5.00E-08
	SQP[1]	dimensionless	9.79E+02	8.11E+01

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

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 experienced with the indicator.
2. 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.

Resource use				
Indicator		**Unit**	A1-A3	A4
	PERE	MJ	2.95E+02	8.90E-01
	PERM	MJ	0.00E+00	0.00E+00
	PERT	MJ	2.95E+02	8.90E-01
	PENRE	MJ	1.34E+03	7.07E+01
	PENRM	MJ	8.46E+01	0.00E+00
	PENRT	MJ	1.43E+03	7.07E+01
	SM	kg	1.07E+01	0.00E+00
	RSF	MJ	1.37E+03	3.11E-02
	NRSF	MJ	1.42E+03	1.04E-01
	FW	m^3	4.24E-01	8.05E-03

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 materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Waste

Indicator		Unit	A1-A3	A4
	HWD	kg	8.70E-01	3.87E-03
	NHWD	kg	2.56E+01	6.15E+00
	RWD	kg	5.97E-03	4.83E-04

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Output flow

Indicator		Unit	A1-A3	A4
	CRU	kg	0.00E+00	0.00E+00
	MFR	kg	5.10E-05	0.00E+00
	MER	kg	1.93E-06	0.00E+00
	EEE	MJ	1.18E-04	0.00E+00
	EET	MJ	1.44E-03	0.00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

Transparent reporting of energy

The table below presents GWPtotal values for energy resources used in the manufacturing phase (A3), calculated with both the location-based and market-based approach. This information is provided for transparency, allowing EPD users to understand the impact of these methodological choices. In this EPD, the following methodology was used in the main results: Location-based approach.

Energy source	Data source	Amount	Unit	GWP-total [kg CO_2-eq/unit]	SUM [kg CO_2-eq]
Location based approach					
Electricity, Latvia (kWh)	ecoinvent 3.6	102.08	kWh	0.54	55.12
Market based approach					

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products			
Indicator	**Unit**	A1-A3	A4
GWPIOBC	kg CO_2 -eq	5.21E+02	4.36E+00

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Additional GWP indicators in accordance with cPCR and more transparent reporting related to CCS		
Indicator	**Unit**	**A1-A3**
GWP-total, gross	kg CO_2 -eq	6.42E+02
GWP-fossil, gross	kg CO_2 -eq	6.42E+02
GWP-biogenic, gross	kg CO_2 -eq	6.34E-01
GWP-luluc, gross	kg CO_2 -eq	7.47E-02
GWP-total, net	kg CO_2 -eq	5.21E+02
GWP-fossil, net	kg CO_2 -eq	5.21E+02
GWP-biogenic, net	kg CO_2 -eq	6.34E-01
GWP-luluc, net	kg CO_2 -eq	7.47E-02
CWRS	kg CO_2 -eq	0.00E+00
CWNRS	kg CO_2 -eq	1.21E+02
CC	kg CO_2	4.31E+02
CCS	kg CO_2	0.00E+00

GWP-total, gross = Global Warming Potential total, gross (GWP-fossil, gross + GWP-biogenic, gross + GWP-luluc); GWP-fossil, gross = Global Warming Potential fossil, gross; GWP-biogenic, gross = Global Warming Potential biogenic, gross; GWP-luluc = Global Warming Potential land use and land use change; GWP-total, net = Global Warming Potential total, net (GWP-total, gross minus CWRS and CWNRS); GWP-fossil, net = Global Warming Potential fossil, net (GWP-fossil, gross minus CWNRS); GWP-biogenic, net = Global Warming Potential biogenic, net (GWP- biogenic, gross minus CWRS); CWRS = Emissions from combustion of waste from renewable sources; CWNRS = Emissions from combustion of waste from non-renewable sources; CC = Emissions from decarbonization of limestone in clinkering (process emissions, clinker); CCS = Amount of carbon reductions from carbon capture and storage considered in the main results of the EPD

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ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
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epd-global Powered by EPD-Norway	**Program operator and publisher** EPD-Global Postboks 5250 Majorstuen, 0303 Oslo, Norway	Phone: e-mail: web:	+47 977 22 020 post@epd-norge.no www.epd-global.com
SCHWENK	**Owner of the declaration** SCHWENK Sverige AB c/o Regus, Hylie Boulevard 34, S-215 35 Hyllie, Sweden	Phone: e-mail: web:	+46 40-31 75 52 urs.mueller@schwenk.com https://www.schwenk.de/en/schwenk-sverige/
LCA.no	**Author of the Life Cycle Assessment** LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no
LCA.no	**Developer of EPD generator** LCA.no AS Dokka 6A, 1671 Kråkerøy, Norway	Phone: e-mail: web:	+47 916 50 916 post@lca.no www.lca.no
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