

TOGETHER WE BUILD PROGRESS



ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804:2012+A2:2019/AC:2021 &
ISO 14025

PC35M (S-V) 42,5 N – LH S10



EPD HUB, HUB-4741

Published on 29.12.2025, last updated on 29.12.2025, valid until 28.12.2030

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Holcim Srbija d.o.o. Beočin
Address	Trg beočinske fabrike cementa 1, Beočin 21300, Srbija
Contact details	damir.cjepa@holcim.com
Website	www.holcim.rs

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021, ISO 14025 and EN 16908
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate
EPD author	LCA Institut
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	D.V, as authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	PC35M (S-V) 42,5N – LH S10
Additional labels	-
Product reference	-
Place(s) of raw material origin	Serbia
Place of production	Beocin, Serbia
Place(s) of installation and use	Serbia
Period for data	Calendar year 2024
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	-
A1-A3 Specific data (%)	92,2

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 t
Declared unit mass	1000 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	497
GWP-total, A1-A3 (kgCO ₂ e)	497
Secondary material, inputs (%)	23,7
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	434
Net freshwater use, A1-A3 (m ³)	0,62

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Holcim Serbia, as a member of the Holcim Group – the world’s leading manufacturer of building materials and solutions – is the market leader in cement, concrete, and aggregates production in Serbia. Located in Beočin, near Novi Sad, the cement plant boasts more than 185 years of production tradition, guaranteeing the superior quality and outstanding performance of its products and solutions.

Beyond the cement plant, Holcim Serbia operates a strategically positioned network of ready-mix concrete plants in Belgrade, Novi Sad, and surrounding areas. This network delivers high-performance, durable, and sustainable concrete solutions tailored to residential, commercial, infrastructure, and industrial projects.

Through Geocycle, the company operates a specialized unit focused on sustainable waste management. By processing waste into alternative fuels for the cement production, Geocycle makes a significant contribution to both environmental protection and the reduction of CO₂ emissions.

Holcim Serbia is a trusted partner for complex and impactful construction projects, driven by comprehensive portfolio of sustainable solutions. We leverage the global expertise of the Holcim Group, which is redefining the future of construction through advanced technologies, circularity, and decarbonization, to shape the built environment across the country.

The company’s management system is certified according to ISO 9001:2015 and ISO 14001:2015.

More information about our operations can be found at: www.holcim.rs



PRODUCT DESCRIPTION

PC35M (S-V) 42,5N – LH S10 is a cement classified under national norm TTO IMS – STO 005/2023, specifically characterized by low heat of hydration (LH) and sulfate resistance (S10). This makes it ideal for massive concrete structures by mitigating the risk of thermal stress and cracking. The cement demonstrates moderate strength gain, ensuring balanced development of mechanical properties over time, alongside high resistance to chemical attack and good long-term workability (especially for pumped and transported concrete). It also yields a uniform, smooth surface and reduced shrinkage.

Further information can be found at: www.holcim.rs

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	100	Europe
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 t
Mass per declared unit	1000 kg

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).



PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
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		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction / demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = ND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in production as well as ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

Cement is a fine powder that serves as a binder in construction - a key ingredient in materials like concrete and mortar. Its defining characteristic is

that when mixed with water, it forms a paste that hardens and adheres to other materials, binding them into a solid, durable mass. Production process starts with mixing raw materials such as limestone and clay and grinding it into a raw meal. This meal is heated in a kiln to extremely high temperatures, to form clinker. The clinker is then cooled and grounded with a small amount of gypsum (to control the setting time) and other mineral components (for composite cement types) to produce the final fine cement powder stored in large silos.

For large-scale use and transportation, the cement is loaded in bulk into specialized, sealed silo trucks. These vehicles use pneumatic systems to efficiently and cleanly convey the cement powder from the truck directly into the customer's on-site storage silos, or ready-mix concrete plants.

TRANSPORT AND INSTALLATION (A4-A5)

This EPD does not cover the construction stage.

PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use stage.

PRODUCT END OF LIFE (C1-C4, D)

The end-of-life phase (modules C1–C4 and D) is excluded as per EN 15804+A2 exclusion criteria for products that become chemically bonded and inseparable with other products. For an end-of-life scenario for cement that becomes a part of either concrete, plaster, or mortar, please refer to an EPD representing the respective products.



MANUFACTURING DIAGRAM (A1 - A3)



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process that is more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production and transport was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1. Data quality is separately assessed according to time, geography and technical representativeness in the LCA report, as per EN15941 and EN15804.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are made according to the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Physical allocation by mass
Packaging material	Not applicable
Ancillary materials	Physical allocation by mass
Manufacturing energy and waste	Physical allocation by mass

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	-

This EPD is product and factory-specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.



ENVIRONMENTAL IMPACT DATA

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	3,14E+01	7,64E+00	4,58E+02	4,97E+02	ND													
GWP – fossil	kg CO ₂ e	3,13E+01	7,64E+00	4,58E+02	4,97E+02	ND													
GWP – biogenic	kg CO ₂ e	1,09E-02	1,69E-03	-5,19E-02	-3,93E-02	ND													
GWP – LULUC	kg CO ₂ e	3,89E-02	3,26E-03	4,45E-02	8,67E-02	ND													
Ozone depletion pot.	kg CFC-11e	7,12E-07	1,24E-07	3,67E-06	4,51E-06	ND													
Acidification potential	mol H ⁺ e	2,58E-01	2,57E-02	5,54E-01	8,38E-01	ND													
EP-freshwater ²⁾	kg Pe	7,10E-03	5,72E-04	1,69E-01	1,76E-01	ND													
EP-marine	kg Ne	6,03E-02	8,51E-03	1,32E-01	2,00E-01	ND													
EP-terrestrial	mol Ne	7,35E-01	9,26E-02	7,06E-01	1,53E+00	ND													
POCP (“smog”) ³⁾	kg NMVOCe	1,99E-01	3,89E-02	4,51E-01	6,89E-01	ND													
ADP-minerals & metals ⁴⁾	kg Sbe	1,27E-03	2,13E-05	2,95E-05	1,32E-03	ND													
ADP-fossil resources	MJ	3,72E+02	1,11E+02	2,67E+03	3,15E+03	ND													
Water use ⁵⁾	m ³ e depr.	1,06E+01	5,53E-01	1,85E+03	1,86E+03	ND													

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	3,31E+01	1,60E+00	1,33E+02	1,68E+02	ND													
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Total use of renew. PER	MJ	3,31E+01	1,60E+00	1,33E+02	1,68E+02	ND													
Non-re. PER as energy	MJ	3,74E+02	1,11E+02	9,10E+02	1,39E+03	ND													
Non-re. PER as material	MJ	2,74E+00	0,00E+00	1,76E+03	1,77E+03	ND													
Total use of non-re. PER	MJ	3,76E+02	1,11E+02	2,67E+03	3,16E+03	ND													
Secondary materials	kg	2,37E+02	4,74E-02	2,80E-01	2,37E+02	ND													
Renew. secondary fuels	MJ	4,20E-03	6,01E-04	9,78E-01	9,83E-01	ND													
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Use of net fresh water	m ³	2,94E-01	1,64E-02	3,09E-01	6,20E-01	ND													

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	1,56E+00	1,80E-01	7,22E-01	2,46E+00	ND													
Non-hazardous waste	kg	5,28E+01	3,40E+00	8,69E+02	9,25E+02	ND													
Radioactive waste	kg	5,71E-04	2,63E-05	3,35E-04	9,33E-04	ND													

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Materials for recycling	kg	7,47E-05	0,00E+00	0,00E+00	7,47E-05	ND													
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND													

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity, Serbia, residual mix, 2024, Serbia, One Click LCA, 0.84 kgCO₂e/kWh
2. Petroleum coke production, petroleum refinery operation, Ecoinvent, 0.68 kgCO₂e/kg
3. Natural gas, World, One Click LCA, 2.42 kgCO₂e/m³

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance is filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub cannot identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

D.V, as authorized verifier acting for EPD HUB Limited
29.12.2025

