ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

MAAVARAD

EPD HUB, HUB-5597

Published on 05.03.2026, last updated on 05.03.2026, valid until 04.03.2031

EPD of multiple products and factories, based on a representative product
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.

ECO PLATFORM EPD VERIFIED

LCA SUPPORT

GENERAL INFORMATION

MANUFACTURER

Manufacturer	OÜ INF Maavarad
Address	Vana-Narva mnt 11b, Kiiu, 74604 Harju, Estonia
Contact details	info.maavarad@inf.ee
Website	www.infmaavarad.ee

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019 and ISO 14025
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	Sander Härma, LCA Support
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Yazan Badour as an authorized verifier for EPD Hub

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	Aggregates
Place(s) of raw material origin	Estonia
Place of production	Estonia
Period for data	01.10.2024-30.09.2025
Averaging in EPD	Multiple factories and products, based on a representative product
Variation in GWP-fossil for A1-A3 (%)	5-9
A1-A3 Specific data (%)	68,6

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 tonne of aggregates
Declared unit mass	1000 kg
Mass of packaging	0 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,51
GWP-total, A1-A3 ($kgCO_2e$)	1,51
Secondary material, inputs (%)	0
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	5,33
Net freshwater use, A1-A3 (m^3)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

OÜ INF Maavarad, a member of the Infortar Group, is dedicated to the sustainable production and extraction of high-quality construction minerals used in the construction materials industry, building projects, and road infrastructure. Their operations focus on delivering materials with diverse properties to meet the needs of modern construction.

PRODUCT DESCRIPTION

The product consists of limestone aggregates, gravel and natural sand. The life cycle inventory is based on site-specific operational data from four representative quarry sites operated by the manufacturer: Reinu, Soodla, Huntaugu and Kuusalu.

The materials are suitable for a wide range of applications, including construction, infrastructure and roadworks. It meets the technical requirements specified in the relevant European standards for aggregates used in these sectors.

Product Group	Product name	Standards			
		EN 13242	EN 12620	EN 13043	EN 13139
Limestone	Limestone aggregates 0/63	x			
	Limestone aggregates 4/16	x			
	Limestone aggregates 16/32	x			
	Limestone aggregates 4/32	x			
	Limestone aggregates 4/63	x			
	Limestone aggregates 32/63	x			
	Limestone aggregates 0/16	x			
	Limestone aggregates 0/6				
	Blasted limestone 0/500				
Gravel and natural sand	Gravel 0/630				
	Crushed gravel 0/32	x			
	Crushed gravel 0/16	x			
	Construction sand 0/8	x	x	x	x
	Construction sand 0/2	x	x		x
	Construction sand 0/6	x	x		x
	Construction sand 0/4	x	x	x	x
	Construction sand 0/10	x			
	Construction sand 0/1			x	
	Fill sand 0/8	x	x	x	x
	Natural fill soil				

Applicable standards: EN 13139:2002 for aggregates for mortar; EN 12620:2002+A1:2008 for aggregates for concrete; EN 13043:2004 aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas; EN 13242:2002+A1:2007 aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction.

Further information can be found at:
www.infmaavarad.ee

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	-	-
Minerals	100	Estonia
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

DECLARED UNIT

Declared unit	1 tonne of aggregates
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

The declared unit of the study is supplied to the client. The scope of the EPD is cradle to gate (A1-A3). Modules C1-C4 and D were not declared as the product falls under exemption of statement 5.2 of EN 15804.

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 the production as well as packaging materials and other 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.

Aggregate production does not involve the use of manufactured raw materials. The raw material is a naturally occurring mineral resource extracted at the quarry. As no upstream raw material supply processes are applicable, module A1 does not contain any environmental impacts. All activities related to extraction, handling and processing of the material, including the use of explosives, fuels, electricity and machinery, are modelled in module A3.

Overburden handling
Prior to the extraction of mineral raw materials, overburden consisting of soil and non-mineral layers is removed to gain access to the underlying deposit. Overburden removal is carried out using mobile machinery such as excavators and, where applicable, dozers. The removed material is not considered part of the aggregate production process and is therefore managed separately. Suitable overburden materials are stored on site and reused for landscaping, site management and recultivation purposes during or after quarrying activities.

Raw material extraction
Aggregate production begins with the extraction of mineral raw materials in open-pit quarries. Depending on geological conditions, the extracted materials include limestone, sand and gravel. Hard rock materials are extracted using drilling and blasting, while unconsolidated materials such as sand and gravel are excavated mechanically.

Loading and internal transport
Following extraction, the raw material is loaded using excavators and transported within the quarry area to the relevant processing stages. Material handling is carried out using mobile machinery and conveyor systems. Interim stockpiling may occur before further processing.

Crushing and screening
Hard rock materials are processed in crushing plants, where impact crushers are used to reduce the material to the required size. The crushed material is then screened to separate it into different aggregate fractions. Depending on the selected processing route, pre-screening may be applied to remove fine material prior to crushing. Sand and gravel materials are primarily processed through screening. In some cases, additional crushing is applied to produce crushed gravel or gravel sand. Screening units separate the material into defined grain size fractions.

Product classification and storage
The processed aggregates are classified into various fractions, such as crushed stone, crushed gravel, gravel sand and screenings. Each fraction is stockpiled separately according to grain size and product specification. These stockpiles form the final aggregate products ready for dispatch.

Quality control
Aggregate products are subject to regular quality control to ensure compliance with applicable technical and regulatory requirements. Testing is performed in accordance with relevant standards to verify grain size distribution and material properties.

Site management and recultivation
During and after quarrying activities, site management measures are implemented to ensure environmental protection and future land use. Overburden and suitable soil materials are stored for later use. After completion of extraction activities, recultivation works may include surface levelling, soil replacement, drainage arrangements and land restoration for nature conservation, recreational, agricultural or forestry purposes.

TRANSPORT AND INSTALLATION (A4-A5)

This EPD does not cover the transportation and installation phase.

PRODUCT USE AND MAINTENANCE (B1-B7)

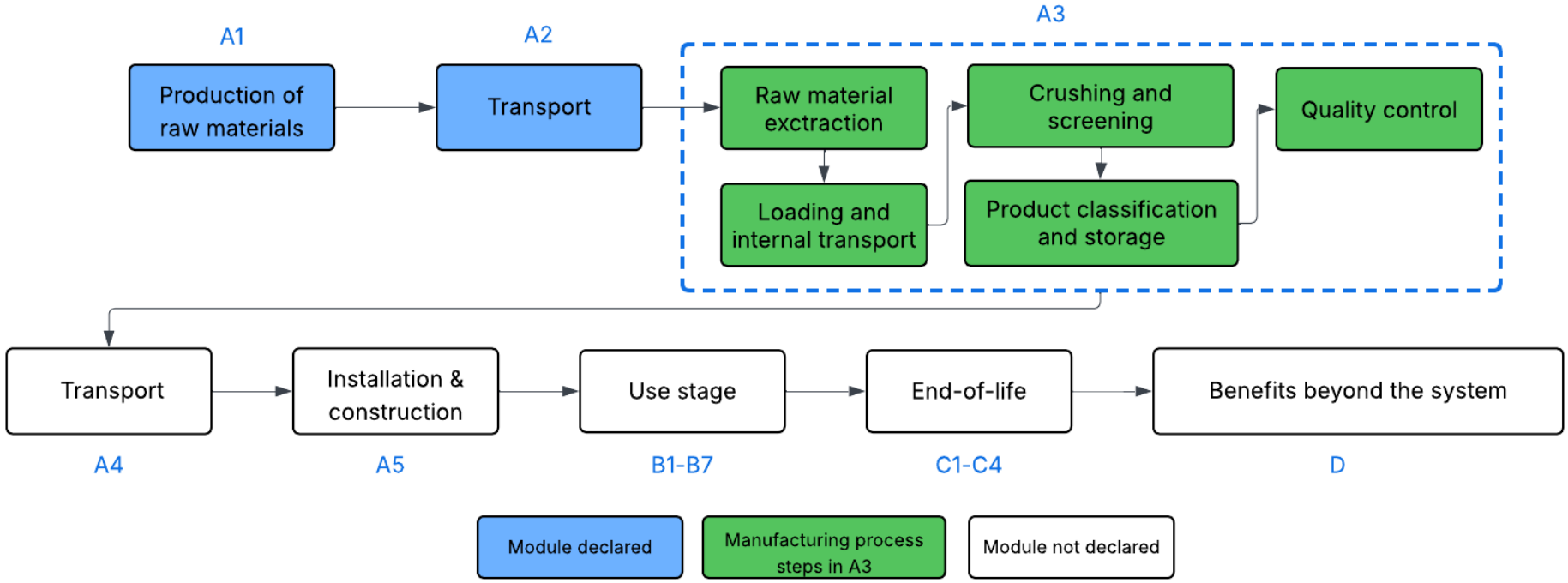
This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

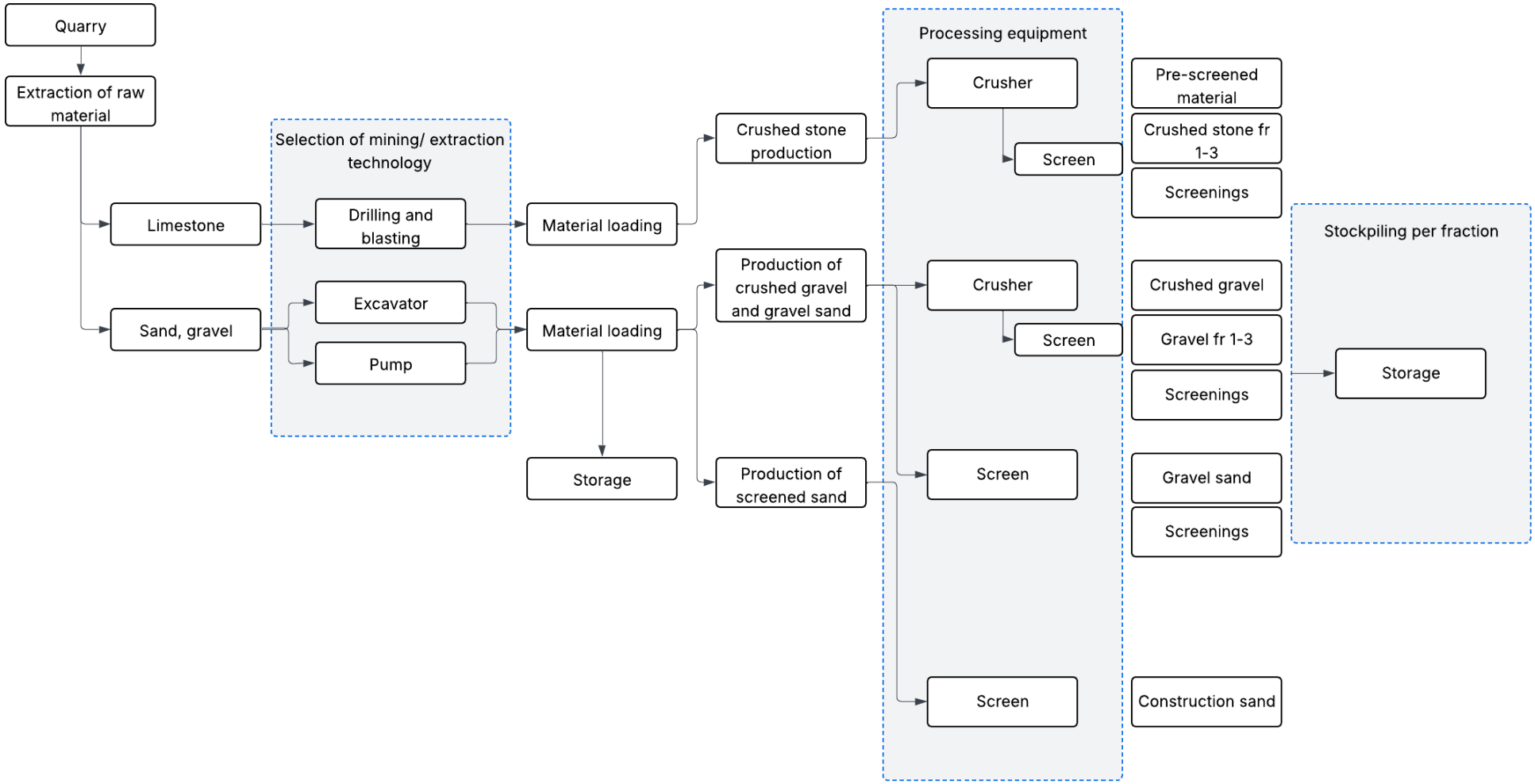
This EPD does not cover the end of life phase.

This EPD does not cover the product end of life because the material undergoes a chemical change or is integrated with other products that renders it unidentifiable. In addition, the material does not contain biogenic carbon. End-of-life scenarios for cement can be found in the EPD for concrete and mortar.

SYSTEM DIAGRAM



MANUFACTURING PROCESS



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 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, transport, and packaging 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.

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 done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by production volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple factories and products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	5-9

OÜ INF Maavarad has many operating quarries. Four were chosen based on their processing methods to cover the entire range of their manufacturing.

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_2e	0,00E+00	5,55E-03	1,51E+00	1,51E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – fossil	kg CO_2e	0,00E+00	5,54E-03	1,50E+00	1,51E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – biogenic	kg CO_2e	0,00E+00	1,26E-06	3,54E-03	3,55E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
GWP – LULUC	kg CO_2e	0,00E+00	2,48E-06	4,66E-04	4,69E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ozone depletion pot.	kg CFC-$_{11}$e	0,00E+00	8,18E-11	2,72E-08	2,72E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acidification potential	mol H^+e	0,00E+00	1,89E-05	1,34E-02	1,34E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-freshwater[2)]	kg Pe	0,00E+00	4,32E-07	1,64E-04	1,64E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-marine	kg Ne	0,00E+00	6,21E-06	5,81E-03	5,82E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EP-terrestrial	mol Ne	0,00E+00	6,76E-05	6,44E-02	6,45E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
POCP ("smog")[3)]	kg NMVOCe	0,00E+00	2,79E-05	1,76E-02	1,76E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-minerals & metals[4)]	kg Sbe	0,00E+00	1,55E-08	4,61E-06	4,62E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADP-fossil resources	MJ	0,00E+00	8,04E-02	2,10E+01	2,11E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Water use[5)]	m^3e depr.	0,00E+00	3,97E-04	2,15E-01	2,16E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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.

ADDITIONAL (OPTIONAL) 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
Particulate matter	Incidence	0,00E+00	5,55E-10	2,83E-07	2,84E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ionizing radiation[6)]	kBq U235e	0,00E+00	7,01E-05	2,98E-02	2,98E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ecotoxicity (freshwater)	CTUe	0,00E+00	1,14E-02	1,67E+01	1,67E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Human toxicity, cancer	CTUh	0,00E+00	9,15E-13	4,89E-10	4,90E-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Human tox. non-cancer	CTUh	0,00E+00	5,21E-11	6,28E-09	6,33E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SQP[7)]	-	0,00E+00	8,10E-02	2,15E+00	2,23E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

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	0,00E+00	1,10E-03	2,91E-01	2,92E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Renew. PER as material	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
Total use of renew. PER	MJ	0,00E+00	1,10E-03	2,91E-01	2,92E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-re. PER as energy	MJ	0,00E+00	8,04E-02	1,88E+01	1,89E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-re. PER as material	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
Total use of non-re. PER	MJ	0,00E+00	8,04E-02	1,88E+01	1,89E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Secondary materials	kg	0,00E+00	3,42E-05	2,00E-02	2,01E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Renew. secondary fuels	MJ	0,00E+00	4,35E-07	4,53E-05	4,57E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-ren. secondary fuels	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
Use of net fresh water	m^3	0,00E+00	1,19E-05	4,90E-03	4,91E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	0,00E+00	1,36E-04	6,77E-02	6,78E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Non-hazardous waste	kg	0,00E+00	2,52E-03	1,11E+00	1,11E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Radioactive waste	kg	0,00E+00	1,72E-08	7,80E-06	7,81E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Materials for recycling	kg	0,00E+00	0,00E+00	7,59E-05	7,59E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Materials for energy recovery	kg	0,00E+00	0,00E+00	1,11E-03	1,11E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Exported energy	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
Exported energy – Electricity	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
Exported energy – Heat	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

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	0,00E+00	5,55E-03	1,50E+00	1,51E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Diesel, burned in building machine, World, Ecoinvent
Electricity kg CO2 /MJ	0,10

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD System Verification v3.2.3. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

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 are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to 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

Yazan Badour as an authorized verifier for EPD Hub
05.03.2026