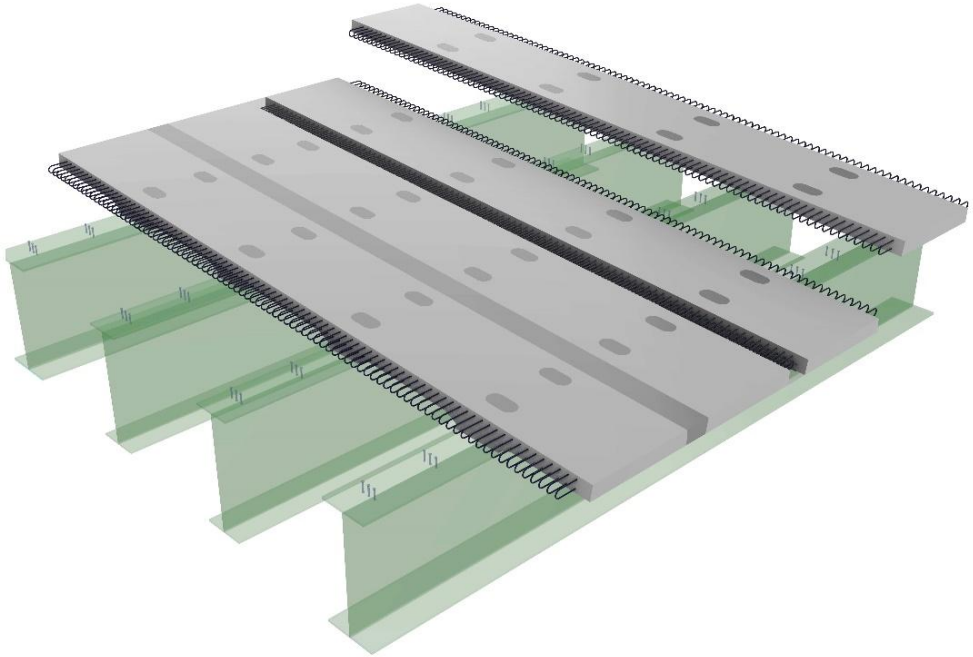
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

STC-ZERO precast slab
Sumitomo Mitsui Construction Co., Ltd.



EPD HUB, HUB-3015
Published on 08.03.2025, last updated on 08.03.2025, valid until 07.03.2030

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一般情報 - GENERAL INFORMATION

メーカー - MANUFACTURER

メーカー名 Manufacturer	Sumitomo Mitsui Construction Co., Ltd.
住所 Address	River city M-SQUARE, 2-1-6, Tsukuda, Chuo Ku, Tokyo To, 104-0051, Japan
問い合わせ先 Contact details	tnaoki@smcon.co.jp
ウェブサイト Website	https://www.smcon.co.jp/

EPD 規格、スコープ、認証機関 - EPD STANDARDS, SCOPE AND VERIFICATION

プログラムオペレータ Program operator	EPD Hub, hub@epdhub.com
参照規格 Reference standard	EN 15804+A2:2019 and ISO 14025
PCR PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023
製品カテゴリ Sector	Construction product
EPD カテゴリ Category of EPD	Design phase EPD
EPD のスコープ Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD 申請者 EPD author	Naoki Takahashi
EPD 検証 EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD 検証 EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

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.

製品 - PRODUCT

製品名 Product name	STC-ZERO precast slab
追加ラベル Additional labels	-
参照製品 Product reference	-
製造地 Place of production	417 Jingocho, Higashiomi-shi, Shiga-ken 521-1213 Japan
データ取得年 Period for data	2023/01~2023/12
EPD 平均化 Averaging in EPD	No averaging
A1-A3 の GWP-fossil 変動率 Variation in GWP-fossil for A1-A3	0%

環境影響データ概要 - ENVIRONMENTAL DATA SUMMARY

宣言単位 Declared unit	1 m3
宣言単位あたりの質量 Declared unit mass	2599 kg
GWP-fossil, A1-A3 (kgCO2e) GWP-fossil, A1-A3 (kgCO2e)	5,93E+02
GWP-total, A1-A3 (kgCO2e) GWP-total, A1-A3 (kgCO2e)	5,93E+02
副資材の投入(%) Secondary material, inputs (%)	1.33
副資材のアウトプット(%) Secondary material, outputs (%)	99.2
エネルギー使用量計, A1-A3 (kWh) Total energy use, A1-A3 (kWh)	2250
水使用量計、A1-A3 (m3) Net fresh water use, A1-A3 (m3)	-1.02

製品とメーカー-PRODUCT AND MANUFACTURER

メーカーの概要 - ABOUT THE MANUFACTURER

Sumitomo Mitsui Construction Co., Ltd. operates in the general construction industry and currently has 13 domestic branches and 15 overseas branches. The company has 2,963 employees. For the fiscal year ending March 2024, its sales were JPY 337.2 billion for SMCC on a non-consolidated basis and JPY 479.4 billion for the Group as a whole, including subsidiaries and affiliates. Civil engineering and building construction account for 45% and 55% of the total amount of completed work. Overseas sales account for 15-20% of consolidated sales. The company aims to achieve an overseas share of 30% by 2030. The company is developing its business not only in Japan but also in the rest of the world, drawing on its extensive experience in civil engineering, including prestressed concrete bridges and underground space construction technology, and in construction, including high-rise condominiums and seismic isolation and vibration control technology.

製品説明 - PRODUCT DESCRIPTION

This product is a cementless precast slab which is constructed by joining precast components split in the direction of the bridge axis to form a single unitary precast slab.

Further information can be found at https://www.smcon.co.jp/.

主な原材料構成 - PRODUCT RAW MATERIAL MAIN COMPOSITION

原材料カテゴリ Raw material category	量、質量 - % Amount, mass- %	原材料源 Material origin
金属 Metals	13.6	Japan
鉱物 Minerals	61.6	Japan
化石原料 Fossil materials	24.8	Japan
バイオマス原料 Bio-based materials	-	-

生物起源 CO2 含有量 - BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

製品の生物起源 CO2 含有量、kg C Biogenic carbon content in product, kg C	-
梱包の生物起源 CO2 含有量、kg C Biogenic carbon content in packaging, kg C	-

機能単位と耐用年数 - FUNCTIONAL UNIT AND SERVICE LIFE

宣言単位 Declared unit	1 m3
宣言単位あたりの質量 Mass per declared unit VP	2599 kg
機能単位 Functional unit	-
参照耐用年数 Reference service life	-

化学物質、REACH 高懸念物質 - SUBSTANCES, REACH - VERY HIGH CONCERN

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

製品のライフサイクル - PRODUCT LIFE-CYCLE

システム境界 - 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	MND	MND	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

製造と梱包 - 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.

This precast concrete product is made from cement-free concrete, rebar and PC steel. Some of the concrete materials are sourced from overseas, while other materials are sourced domestically and trucked to Sumitomo Mitsui Construction's Notogawa Plant. The main manufacturing processes are: concrete production; rebar processing, assembly and installation; formwork assembly and release agent application; PC steel installation and tensioning; concrete placement and curing; a random sample of each batch is inspected to ensure conformity with the prescribed appearance, performance, shape and dimensional specifications, and the product is then completed.

The manufacturing process requires electricity, heat and water for each piece of equipment. Stripping agents are used to prevent concrete from sticking to the formwork. Highly alkaline waste water from the washing of concrete production equipment and tools used during casting contains mortar components. This waste water is treated on site, with agglomerates treated as sludge and neutralised, and the purified water then used on site for spraying or draining.

輸送と据付 - TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

This EPD excludes the A4-A5 stage. It is not common in Japan to include A4-A5 in declaration as well as we do not have data for calculations and it is not mandated by standards.

製品使用とメンテナンス - 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.

製品の廃棄・リサイクル段階 - PRODUCT END OF LIFE (C1-C4, D)

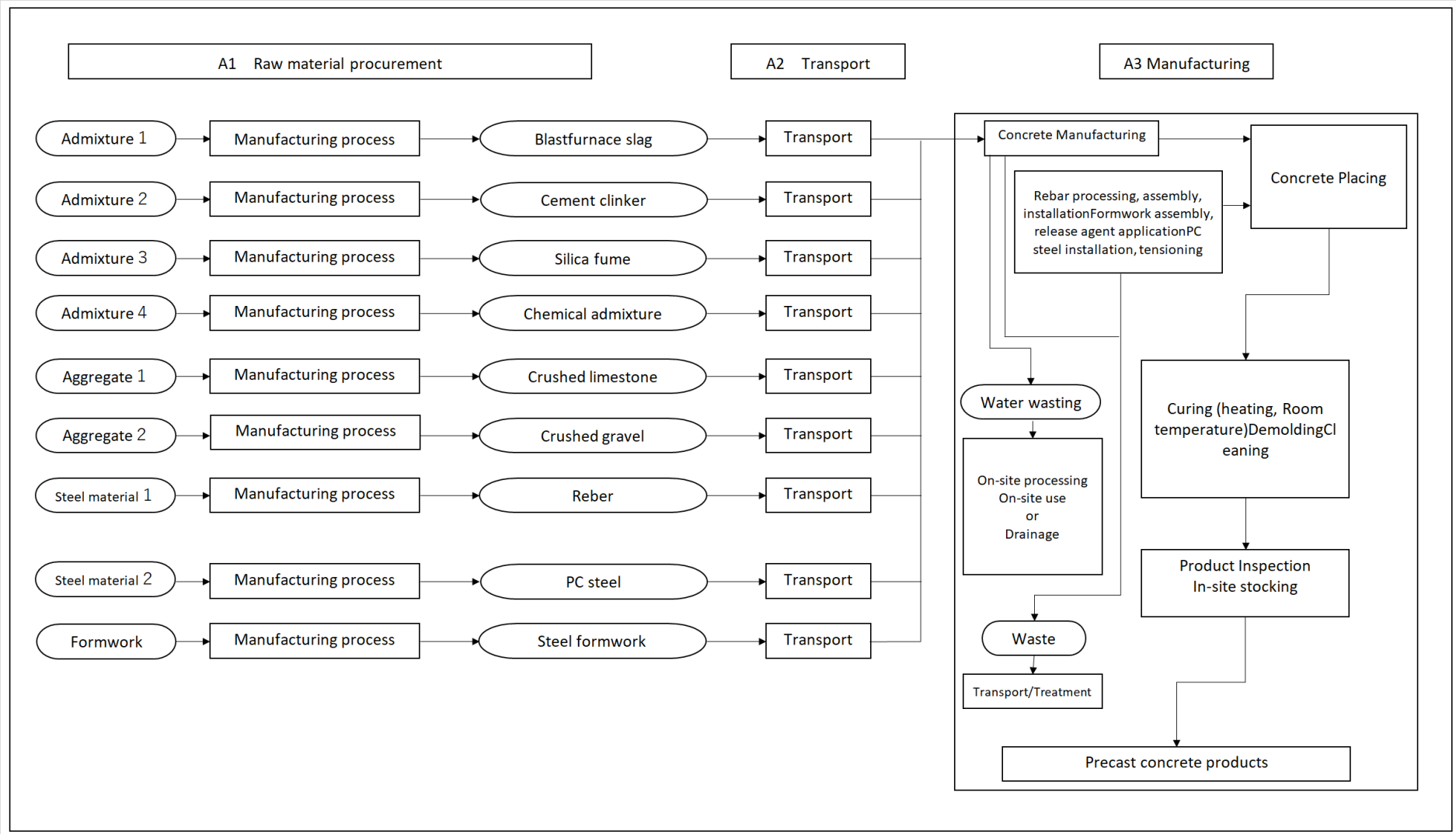
It is assumed that 0.0013L/kg of diesel fuel will be consumed for demolition (C1). This scenario is based on Annual Research Report 2002 published by Tokyo Metropolitan Research Institute for Environmental Protection. The transport from the demolition site to the disposal site (C2) is assumed to be 50 km by truck in all scenarios.

The product scenarios (C3-C4) were developed based on the recycling rate of construction waste in the 2008 survey of actual construction by-products published by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

Concrete:
In this EPD, 99.5% of concrete waste is recycled after demolition and the remaining 0.5% is landfilled.

Steel wastes:
Steel wastes are assumed to be 95.9% recycled and 4.1% landfilled.

製造プロセス - MANUFACTURING PROCESS



ライフサイクルアセスメント - LIFE-CYCLE ASSESSMENT

カットオフ基準 - 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.

配分、推定 - 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:

データタイプ - Data type	配分 - Allocation
原材料 - Raw materials	No allocation
梱包材 - Packaging materials	No allocation
補助材料 - Ancillary materials	No allocation
製造エネルギーと廃棄物 - Manufacturing energy and waste	Allocated by mass or volume

平均値と変動率 - AVERAGES AND VARIABILITYVP

平均化の種類 - Type of average	No averaging
平均化の方法 - Averaging method	Not applicable
A1-A3 における GWP-fossil の変動率 - Variation in GWP-fossil for A1-A3	0%

No averaging is done in this EPD.

LCA ソフトウェアと参考文献 - LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent v3.8 and One Click LCA databases were used as sources of environmental data.

環境影響データ - ENVIRONMENTAL IMPACT DATA

主な環境影響指標 - CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	3,89E+02	4,25E+01	1,61E+02	5,93E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,19E+01	2,92E+01	1,97E+01	2,23E-01	-2,55E+02
GWP – fossil	kg CO_2e	3,89E+02	4,24E+01	1,61E+02	5,93E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,19E+01	2,92E+01	1,94E+01	2,21E-01	-2,56E+02
GWP – biogenic	kg CO_2e	-2,86E-01	0,00E+00	3,35E-03	-2,82E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,84E-01	1,43E-03	0,00E+00
GWP – LULUC	kg CO_2e	3,98E-01	2,19E-02	6,35E-02	4,83E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,18E-03	1,44E-02	9,54E-03	3,64E-04	1,26E-01
Ozone depletion pot.	kg CFC_{-11}e	2,63E-05	8,79E-06	1,44E-05	4,94E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,54E-06	6,07E-06	3,48E-06	6,86E-08	-8,09E-06
Acidification potential	mol H^+e	2,15E+00	1,44E-01	6,05E-01	2,90E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,23E-01	8,62E-02	2,09E-01	2,03E-03	-1,12E+00
EP-freshwater[2)]	kg Pe	1,82E-02	4,08E-04	3,12E-03	2,17E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	3,93E-05	2,76E-04	3,18E-04	1,95E-06	-1,54E-03
EP-marine	kg Ne	3,89E-01	2,85E-02	1,57E-01	5,75E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	5,46E-02	1,65E-02	7,57E-02	7,72E-04	-6,33E-02
EP-terrestrial	mol Ne	4,38E+00	3,18E-01	1,55E+00	6,24E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	5,99E-01	1,84E-01	8,39E-01	8,47E-03	-2,90E+00
POCP (“smog”)[3)]	kg NMVOCe	1,71E+00	1,12E-01	5,49E-01	2,37E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,65E-01	6,87E-02	2,31E-01	2,40E-03	-1,43E+00
ADP-minerals & metals[4)]	kg Sbe	4,27E-03	1,99E-04	4,35E-04	4,90E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	6,02E-06	1,33E-04	7,29E-04	4,38E-07	-8,99E-03
ADP-fossil resources	MJ	4,83E+03	6,03E+02	2,10E+03	7,54E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,60E+02	4,16E+02	2,52E+02	4,63E+00	-2,12E+03
Water use[5)]	m^3e depr.	4,01E+03	2,98E+00	2,33E+05	2,37E+05	MND	MND	MND	MND	MND	MND	MND	MND	MND	4,29E-01	2,02E+00	1,76E+00	1,58E-02	6,95E+01

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.

追加(オプション)の環境影響指標 - ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

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	2,65E-05	2,82E-06	9,34E-06	3,86E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	3,31E-06	1,99E-06	2,20E-05	1,34E-07	-1,33E-05
Ionizing radiation[6)]	kBq U235e	2,15E+01	2,81E+00	7,48E+00	3,18E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	7,34E-01	1,94E+00	1,26E+00	2,12E-02	5,43E+00
Ecotoxicity (freshwater)	CTUe	1,44E+04	5,87E+02	1,94E+03	1,69E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	9,60E+01	4,02E+02	4,61E+02	3,16E+00	-6,27E+03
Human toxicity, cancer	CTUh	1,53E-06	1,89E-08	1,90E-07	1,74E-06	MND	MND	MND	MND	MND	MND	MND	MND	MND	3,68E-09	1,25E-08	1,47E-08	9,41E-11	2,19E-06
Human tox. non-cancer	CTUh	1,30E-05	5,03E-07	1,61E-06	1,51E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	6,94E-08	3,46E-07	5,34E-07	2,28E-09	1,32E-05
SQP[7)]	-	9,84E+02	3,47E+02	2,79E+02	1,61E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,08E+01	2,47E+02	1,74E+02	7,40E+00	-9,33E+02

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.

天然資源の利用 - 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	3,85E+02	8,41E+00	8,83E+01	4,81E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	9,13E-01	5,67E+00	1,27E+01	4,47E-02	-2,85E+02
Renew. PER as material	MJ	2,53E+01	0,00E+00	0,00E+00	2,53E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,52E+01	-1,26E-01	0,00E+00
Total use of renew. PER	MJ	4,10E+02	8,41E+00	8,83E+01	5,07E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	9,13E-01	5,67E+00	-1,25E+01	-8,17E-02	-2,85E+02
Non-re. PER as energy	MJ	4,79E+03	6,03E+02	2,21E+03	7,61E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,60E+02	4,16E+02	2,52E+02	4,63E+00	-2,12E+03
Non-re. PER as material	MJ	4,62E+01	0,00E+00	0,00E+00	4,62E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-4,60E+01	-2,31E-01	0,00E+00
Total use of non-re. PER	MJ	4,84E+03	6,03E+02	2,21E+03	7,65E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,60E+02	4,16E+02	2,06E+02	4,40E+00	-2,12E+03
Secondary materials	kg	3,45E+01	2,52E-01	6,66E+01	1,01E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	6,25E-02	1,67E-01	1,50E-01	1,30E-03	1,52E+02
Renew. secondary fuels	MJ	2,32E-03	3,44E-03	2,56E-03	8,33E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,04E-04	2,30E-03	4,36E-03	2,09E-05	-3,65E-02
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	2,88E+00	7,77E-02	-3,98E+00	-1,02E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	9,70E-03	5,30E-02	4,74E-02	3,62E-03	-6,37E+00

8) PER = Primary energy resources.

廃棄・リサイクル段階 — 廃棄 - 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	7,01E+01	1,02E+00	3,10E+00	7,42E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,14E-01	6,86E-01	8,17E-01	4,21E-03	-1,37E+02
Non-hazardous waste	kg	9,70E+02	1,60E+01	5,47E+01	1,04E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,50E+00	1,08E+01	1,64E+01	1,01E+01	-4,23E+02
Radioactive waste	kg	1,29E-02	3,93E-03	6,64E-03	2,35E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,12E-03	2,72E-03	1,58E-03	2,15E-05	1,64E-04

廃棄・リサイクル段階 — 出力フロー - 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	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	2,73E+02	2,73E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,58E+03	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	9,40E-12	9,40E-12	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

環境影響 - ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	3,88E+02	4,20E+01	1,59E+02	5,89E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,17E+01	2,89E+01	1,92E+01	2,18E-01	-2,38E+02
Ozone depletion Pot.	kg CFC_{-11}e	2,28E-05	6,97E-06	1,35E-05	4,33E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,01E-06	4,82E-06	2,77E-06	5,43E-08	-1,05E-05
Acidification	kg SO_2e	1,71E+00	1,18E-01	4,97E-01	2,33E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	8,79E-02	7,09E-02	1,56E-01	1,50E-03	-8,79E-01
Eutrophication	kg PO_4^3e	7,44E-01	2,53E-02	1,06E-01	8,75E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	2,04E-02	1,62E-02	4,07E-02	3,38E-04	-3,67E-01
POCP (“smog”)	kg C_2H_4e	1,78E-01	5,55E-03	2,92E-02	2,13E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,92E-03	3,55E-03	4,35E-03	5,17E-05	-1,78E-01
ADP-elements	kg Sbe	4,26E-03	1,94E-04	4,32E-04	4,88E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	5,92E-06	1,29E-04	7,29E-04	4,30E-07	-8,98E-03
ADP-fossil	MJ	4,83E+03	6,03E+02	2,10E+03	7,53E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	1,60E+02	4,16E+02	2,52E+02	4,63E+00	-2,12E+03

検証報告 - VERIFICATION STATEMENT

本 EPD の検証プロセス - VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

第三者検証報告 - THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
03.03.2025

VERIFIED ISO 14025