ENVIRONMENTAL PRODUCT DECLARATION

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

CERADIR, Hydrophilic Fiber Cement Panel, Extrusion process 16
KMEW Co., Ltd.

EPD HUB, HUB-1737
Publishing date 02 August 2024, last updated on 02 August 2024, valid until 02 August 2029.

Created with One Click LCA

一般情報 - GENERAL INFORMATION

メーカー - MANUFACTURER

メーカー名 Manufacturer	KMEW Co., Ltd.
住所 Address	Crystal Tower 13F, 1-2-27, Shiromi 1-chome, Chuo-ku, Osaka Japan
問い合わせ先 Contact details	h.masui@kmew.co.jp
ウェブサイト Website	https://www.kmew.co.jp/company/

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	Sister EPD
親 EPD 番号 Parent EPD number	HUB-1381
EPD のスコープ Scope of the EPD	Cradle to gate with modules C1-C4, D
EPD 申請者 EPD author	HIsashi Masui
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	Magaly González Vázquez, 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	CERADIR, Hydrophilic Fiber Cement Panel, Extrusion process 16
追加ラベル Additional labels	-
参照製品 Product reference	-
製造地 Place of production	Kashima Plant (Kamisu City, Ibaraki Prefecture Japan)
データ取得年 Period for data	From April 2022 to March 2023
EPD 平均化 Averaging in EPD	No averaging
A1-A3 の GWP-fossil 変動率 Variation in GWP-fossil for A1-A3	-

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

宣言単位 Declared unit	1t
宣言単位あたりの質量 Declared unit mass	1000 kg
GWP-fossil, A1-A3 (kgCO2e) GWP-fossil, A1-A3 (kgCO2e)	8,96E+02
GWP-total, A1-A3 (kgCO2e) GWP-total, A1-A3 (kgCO2e)	7,86E+02
副資材の投入(%) Secondary material, inputs (%)	27
副資材のアウトプット(%) Secondary material, outputs (%)	1.93
エネルギー使用量計, A1-A3 (kWh) Total energy use, A1-A3 (kWh)	2710
水使用量計、A1-A3 (m3) Net fresh water use, A1-A3 (m3)	5.04

製品とメーカー-PRODUCT AND MANUFACTURER

メーカーの概要 - ABOUT THE MANUFACTURER

KMEW Co., Ltd. is Japans only manufacturer and distributor of overall exterior building materials, including roofing materials, exterior wall claddings, and rain gutters, founded in December 2003. The company contributes to the improvement of the living environment by providing products and services that utilise its unique technologies, such as photocatalytic technology for lightweight roofing and exterior wall materials to enhance the beauty and longevity of buildings.

製品説明 - PRODUCT DESCRIPTION

Extruded exterior wall material is a board-shaped cement product that is formed, patterned, cured, and cosmetically coated by the extrusion process from mixed raw materials consisting of cementitious raw materials, fibrous raw materials, recycled materials, and admixtures. It is a lightweight, environmentally friendly, fire-resistant, strong and flexible exterior wall material used mainly for residential applications. It is also widely used in non-residential buildings such as stores, warehouses, and offices. Name of products declared in this EPD:CERADIR Hydrophilic Coat 16.

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

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	0	-
鉱物 Minerals	66	Japan
化石原料 Fossil materials	27	Japan
バイオマス原料 Bio-based materials	7	Japan

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	23.76
梱包の生物起源 CO2 含有量、kg C Biogenic carbon content in packaging, kg C	11.3

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

宣言単位 Declared unit	1t
宣言単位あたりの質量 Mass per declared unit VP	1000 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.

Mixed raw materials consisting of cementitious raw materials, fibrous raw materials, recycled materials, admixtures, and mixed water are extruded into a solid shape and then patterned, cured, dried, and dimensioned. It then goes through curing, drying, dimensional processing, and decorative coating processes to be finished. The final product is placed on wooden pallets and shipped out.

Energy used in manufacturing, waste generated in the manufacturing process, and material losses from the manufacturing process are also taken into consideration.

A1: Procurement of raw materials. Raw materials include extraction and processing prior to production.

A2: Raw material transportation. Raw materials are transported by sea or truck to the manufacturing facility for storage.
Transport assumptions and distances for raw materials are the actual measurement value based on our internal research.

A3: Manufacturing Process. Electricity, industrial steam, city gas and diesel are used to operate machinery and equipment. Packaging and ancillary materials used in the manufacturing process. Manufacturing wastes such as edge materials from dimensional processing, mixed raw materials excluded as defective after extrusion, and wastewater are also taken into account in this stage. Excluded mixed raw materials and wastewater circulates within the site and re-used. Scenarios of manufacturing wastes are based on the actual measurement. The finished products are packed with interleaving paper, plastic sheet and film, and then shipped out on a wooden pallet.

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. It is excluded because the impacts are assumed to be very little and it is not mandated by standards. As this EPD excludes module A5, all the packaging wastes are considered in the EOL stage.

製品使用とメンテナンス - PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD excludes the use stage.
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)

In this EPD, end-of-life scenarios are developed for each material categories. Energy considered for demolition of building (C1) is considered negligible and transportation distance and method to the treatment facility (C2) is assumed to be 50km by a truck in all scenarios.

Product wastes:
The product wastes at the time of demolition is classified as controlled debris, assuming that the products will be replaced and disposed of 30 years after constructions. 100% of the product wastes are assumed to be landfilled.

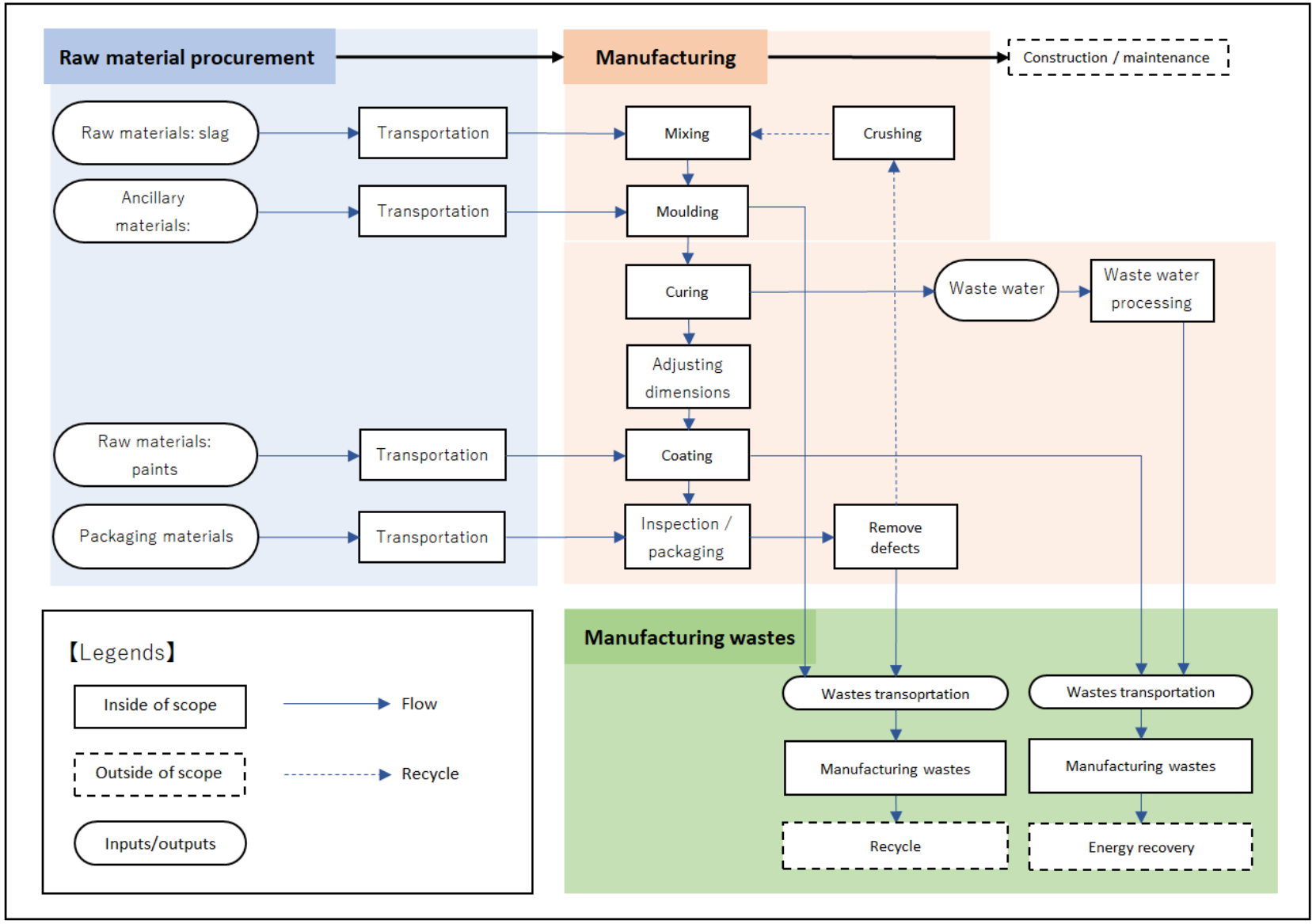
Wooden pallets:
70% are collected by Kmew themselves and reused as is. The remaining 30% are assumed to be collected and sent to chipping facility for recycling. The scenario is based on the internal data.

Plastic wastes:
38% are assumed to be collected and processed for recycling. The remaining 62% are assumed to be incinerated with energy recovery. The scenario is based on the report Results of the 2018 survey on the actual status of construction by-products from Construction Recycling Promotion Plan published by Japanese Ministry of Land, Infrastructure, Transport and Tourism.

Paper wastes:
75.8% are assumed to be collected and processed for recycling, 18.3% are incinerated without energy recovery, and the remaining 5.9% are landfilled. The scenario is based on the results of a Survey of construction by-products in 2018 published by the Ministry of Land, Infrastructure and Transport.

Based on EOL scenarios, the benefits and loads are considered in D for cases where there is recycling, reuse and energy recovery.

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	Allocated by mass or volume
梱包材 - Packaging materials	Allocated by mass or volume
補助材料 - Ancillary materials	Allocated by mass or volume
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	-

This EPD is product and factory specific and does not contain average calculations.

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	5,47E+02	2,01E+01	2,19E+02	7,86E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,14E+01	4,18E+01	1,08E+02	-2,53E+00
GWP – fossil	kg CO_2e	6,16E+02	2,01E+01	2,60E+02	8,96E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,14E+01	7,58E-01	8,23E+00	-2,56E+00
GWP – biogenic	kg CO_2e	-9,91E+01	0,00E+00	-4,14E+01	-1,41E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	4,11E+01	9,95E+01	0,00E+00
GWP – LULUC	kg CO_2e	3,00E+01	9,15E-03	7,91E-02	3,01E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	5,67E-03	2,25E-04	9,26E-03	2,64E-02
Ozone depletion pot.	kg CFC_{-11}e	4,81E-05	4,28E-06	1,89E-05	7,13E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,38E-06	8,08E-09	3,56E-06	-4,80E-07
Acidification potential	mol H^+e	2,71E+00	1,04E-01	1,03E+00	3,84E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	3,38E-02	1,12E-03	7,20E-02	-3,08E-02
EP-freshwater[2)]	kg Pe	2,02E-02	1,66E-04	4,76E-03	2,52E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,08E-04	6,39E-06	2,05E-04	-2,17E-04
EP-marine	kg Ne	6,30E-01	2,30E-02	1,57E-01	8,10E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,49E-03	3,43E-04	2,23E-02	-1,17E-02
EP-terrestrial	mol Ne	5,96E+00	2,55E-01	1,73E+00	7,94E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,23E-02	3,48E-03	2,40E-01	-1,24E-01
POCP (“smog”)[3)]	kg NMVOCe	1,69E+00	8,01E-02	5,41E-01	2,31E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,70E-02	9,52E-04	7,34E-02	-3,89E-02
ADP-minerals & metals[4)]	kg Sbe	6,34E-03	7,13E-05	2,77E-04	6,69E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	5,20E-05	1,48E-06	2,27E-05	-3,50E-05
ADP-fossil resources	MJ	4,97E+03	2,87E+02	3,33E+03	8,59E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,63E+02	1,80E+00	2,51E+02	-4,22E+01
Water use[5)]	m^3e depr.	1,76E+02	1,26E+00	2,36E+01	2,01E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,92E-01	1,06E-01	8,83E-01	-1,69E-02

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	3,35E-05	1,48E-06	8,73E-06	4,38E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,81E-07	3,93E-08	1,27E-06	-8,49E-07
Ionizing radiation[6)]	kBq U235e	2,73E+01	1,34E+00	1,44E+01	4,31E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,62E-01	1,19E-02	1,11E+00	-1,87E-02
Ecotoxicity (freshwater)	CTUe	1,31E+04	2,60E+02	3,43E+03	1,68E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,58E+02	1,89E+01	2,92E+03	4,97E+00
Human toxicity, cancer	CTUh	2,91E-07	8,05E-09	1,16E-07	4,15E-07	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	4,91E-09	5,32E-10	2,47E-07	-3,99E-08
Human tox. non-cancer	CTUh	1,01E-05	2,31E-07	1,39E-06	1,17E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,36E-07	9,21E-09	8,72E-06	-6,99E-08
SQP[7)]	-	6,07E+03	1,85E+02	5,79E+03	1,20E+04	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9,70E+01	8,03E-01	9,64E+02	-3,73E+03

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	7,34E+02	3,40E+00	5,02E+02	1,24E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,23E+00	1,67E-01	2,54E+00	-2,48E+02
Renew. PER as material	MJ	8,61E+02	0,00E+00	3,67E+02	1,23E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-3,64E+02	-8,65E+02	0,00E+00
Total use of renew. PER	MJ	1,59E+03	3,40E+00	8,69E+02	2,47E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,23E+00	-3,64E+02	-8,62E+02	-2,48E+02
Non-re. PER as energy	MJ	4,96E+03	2,87E+02	3,28E+03	8,53E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,63E+02	1,80E+00	2,51E+02	-2,89E+01
Non-re. PER as material	MJ	2,14E+02	0,00E+00	3,71E+01	2,51E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-3,71E+01	-2,14E+02	0,00E+00
Total use of non-re. PER	MJ	5,17E+03	2,87E+02	3,32E+03	8,78E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,63E+02	-3,53E+01	3,74E+01	-2,89E+01
Secondary materials	kg	2,70E+02	1,02E-01	3,47E+03	3,74E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,57E-02	2,75E-03	4,51E-02	2,25E+00
Renew. secondary fuels	MJ	5,93E-02	1,24E-03	8,18E+00	8,25E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9,02E-04	1,68E-05	2,06E-03	-5,73E+00
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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	4,41E+00	3,36E-02	5,94E-01	5,04E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,08E-02	1,85E-03	2,98E-01	7,04E-03

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	4,63E+01	4,24E-01	1,04E+01	5,71E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,69E-01	4,26E-02	1,00E+03	-1,44E-02
Non-hazardous waste	kg	1,13E+03	6,55E+00	1,82E+02	1,32E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	4,26E+00	5,87E-01	7,95E-03	-2,60E+00
Radioactive waste	kg	1,40E-02	1,91E-03	7,50E-03	2,34E-02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,07E-03	4,07E-06	4,59E-07	-1,69E-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	3,47E+03	3,47E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,10E+01	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,19E+01	1,19E+01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	8,00E+00	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	1,97E+00	1,97E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	2,40E-01	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	MNR	0,00E+00	5,39E+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	6,39E+02	1,99E+01	2,54E+02	9,13E+02	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,13E+01	8,22E-01	8,24E+00	-2,53E+00
Ozone depletion Pot.	kg CFC_{-11}e	4,36E-05	3,39E-06	1,55E-05	6,25E-05	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,89E-06	6,98E-09	2,81E-06	-3,91E-07
Acidification	kg SO_2e	2,19E+00	8,43E-02	8,68E-01	3,14E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,79E-02	8,73E-04	5,58E-02	-2,20E-02
Eutrophication	kg PO_4^3e	1,21E+00	1,44E-02	2,00E-01	1,42E+00	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,35E-03	1,28E-03	1,73E-01	-2,16E-02
POCP (“smog”)	kg C_2H_4e	1,50E-01	3,25E-03	4,44E-02	1,98E-01	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,40E-03	7,91E-05	3,57E-03	-2,32E-03
ADP-elements	kg Sbe	5,37E-03	6,96E-05	2,74E-04	5,71E-03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	5,06E-05	1,44E-06	2,25E-05	-3,48E-05
ADP-fossil	MJ	5,17E+03	2,87E+02	3,33E+03	8,79E+03	MND	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,63E+02	1,80E+00	2,51E+02	-4,22E+01

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

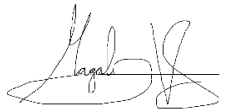
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
02.08.2024



VERIFIED ISO 14025