

Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Quartz Surfaces

from

Fugenstone UK Limited

Programme: The EFI Program

Programme operator: The Environment Footprint Institute EPD

registration number: 260101EPD CPR:P-3100

Version date: 2026-01-12

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An EPD may be updated or de-published if conditions change. To find the latest version of the EPD and to confirm its validity, see www.environdec.com



GENERAL INFORMATION

Programme Information	
Programme:	The EFI Program
Address:	The Environment Footprint Institute Calle Circe 49A Madrid, Spain
Website:	www.environmentalfootprintinstitute.com
E-mail:	info@environmentalfootprintinstitute.com

Product Category Rules (PCR)
Product category rules (PCR): Under the general rules of the Environmental Footprint Institute and PCR P-3100: Construction products in general (EN-15804)
PCR review was conducted by: The Environmental Footprint Institute.
PCR review was conducted by: <i>Environmental Footprint Institute</i>

Third-party Verification
Independent verification of the declaration and data, according to ISO 14025:2006 and ISO 14040:
<input type="checkbox"/> EPD Process Certification (internal) <input checked="" type="checkbox"/> EPD Verification (external)
Accredited by: THE ENVIRONMENTAL FOOTPRINT INSTITUTE Third party verifier: Iván Jiménez Calle Circe 49A Madrid, Spain www.environmentalfootprintinstitute.com info@environmentalfootprintinstitute.com
<small>*EPD process certification involves an accredited certification body certifying and periodically auditing the EPD process and conducting external and independent verification of EPDs that are regularly published. More information can be found in the General Programme Instructions on www.envrondec.com.</small>

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterization factors); and be valid at the time of comparison.
 For further information about comparability, see EN 15804 and ISO 14025.



INFORMATION ABOUT EPD OWNER

Owner of the EPD: Fugenstone UK Limited

Address: Unit 2-3 Crown Works,
Rotherham Road, Beighton,
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Contact: Riya Aseef

Address and contact information of the LCA practitioner commissioned by the EPD owner, if applicable: CQES International LLC

Shams Business Center
Tel: +971 5858 7 9085
sales@cquesint.com
www.cquesint.com



Description of the organisation:

Fugenstone UK Limited is a premium surface solutions company focused on the design, supply, and distribution of high-quality engineered stone surfaces for residential, commercial, and large-scale architectural projects across the UK. The company offers a carefully curated portfolio of surfaces that balance sophisticated aesthetics with strength, durability, and everyday practicality, making them suitable for kitchens, bathrooms, workspaces, hospitality environments, and bespoke interior applications.

Driven by a commitment to quality, consistency, and performance, Fugenstone UK Limited maintains rigorous standards across material selection, finishing, and final output. Each surface is developed to meet the functional demands of modern living while aligning with contemporary design trends and long-term reliability expectations.

Fugenstone UK Limited works in close collaboration with architects, designers, developers, fabricators, and contractors, providing dependable support from specification through to project completion. With a customer-focused mindset, technical expertise, and an emphasis on responsible business practices, the company positions itself as a trusted partner in delivering refined surface solutions that enhance spaces and stand the test of time.

At Fugenstone, we have undertaken a strategic transformation to expand our product portfolio, incorporating innovative materials that align with our long-term vision for growth and sustainability. Each initiative we implement reflects our commitment to addressing the demands of a changing world while striving for excellence in environmental performance and product safety throughout every stage of the lifecycle.

Product-related or management system-related certifications:

Fugenstone manufacturing facilities are certified to **ISO 9001, ISO 14001**, ensuring quality management, environmental responsibility, and occupational health and safety. The company follows sustainability initiatives focused on efficient resource use, waste reduction, and continuous environmental performance improvement.

PRODUCT INFORMATION

Product name: Fugenstone Quartz Surfaces

Product identification: Engineered quartz surfacing slabs

Visual representation (e.g., an image) of the product:



Pandora



Celestio White



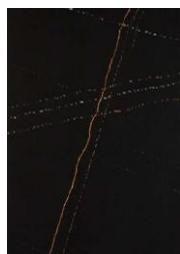
Panda



Noir



Moraine



Laurent



Jumeirah



Lava Vitre



Serano Wave



Irini



Florence



Eternal



Sierra



Bloomfeild



Coastal Chic



Coral Bay



Colossal



Crestline



Olive Green



Golden Dunes



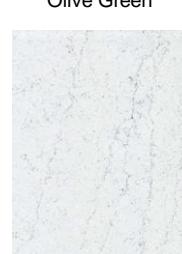
Helios



Lagoon Mist



Liora



Mont Blanc



Marquina

Disclaimer: The product images shown above are for reference purposes only. Not all products and variations are displayed. Additional variations of Quartz Surfaces are included.

UN CPC code: 37560 – Articles of stone or other mineral substances, not elsewhere classified.

Product description:

Fugenstone Quartz Surfaces are premium engineered stone products, composed of approximately 90–95% natural quartz crystals combined with high-quality resins and pigments. Designed for exceptional durability and aesthetic versatility, Fugenstone surfaces are ideal for residential, commercial, and hospitality applications. The non-porous composition ensures superior resistance to stains, scratches, and impact, while maintaining low maintenance requirements. Their hygienic properties make them suitable for kitchens, bathrooms, and other environments where cleanliness and durability are essential. Available in a wide range of colors, patterns, and finishes, Quartz Surfaces can replicate the natural elegance of stone or provide contemporary design options, offering architects and designers extensive flexibility. Each slab meets stringent quality, safety, and sustainability standards, ensuring consistent performance and long-term reliability.

Name and location of production site(s):

Fugenstone

Fujian Pengxiang Industrial Co. Ltd., Zhangzhou, Fujian, China

Applications:

Kitchen countertops, vanity tops, wall claddings, flooring and furniture and architectural surfaces.

Product Forms:

Fugenstone quartz products are supplied as factory-manufactured engineered quartz slabs in standardized thicknesses (e.g., 12 mm, 20 mm, 30 mm), surface finishes, and dimensions suitable for architectural fabrication.

Geographical Scope: Global – The data are representative of Fugenstone quartz manufacturing operations located in China, with products distributed to international markets.

Reference Service Life (RSL): The Reference Service Life (RSL) of Fugenstone quartz surfaces is \geq 50 years when installed and used in accordance with the manufacturer's guidelines and under normal interior building conditions.

CONTENT DECLARATION

Product content	Mass, kg	Post-consumer recycled material, mass-% of product	Biogenic material, mass-% of product	Biogenic material, kg C/product or declared unit
Quartz	925	-	-	0.00E+00
Resin (Binder)	70	-	-	0.00E+00
Pigments	4	-	-	0.00E+00
Additives	1	-	-	0.00E+00
TOTAL	1000			

Packaging materials	Mass, kg	Mass-% (versus the product)	Biogenic material, kg C/product or declared unit
Wooden Pallet	5.93E-03	5.93E-01	2.64E-03

1 kg biogenic carbon in the product/packaging is equivalent to the uptake of 44/12 kg of CO₂.

Hazardous substances from the candidate list of SVHC	EC No.	CAS No.	Mass-% per product or declared unit
N/A	N/A	N/A	N/A

LCA INFORMATION

Declared unit:

The declared unit for this Environmental Product Declaration (EPD) is **1 metric ton (1,000 kg) of Quartz Surfaces**, representing an average engineered quartz slab product manufactured by Fugenstone. The declared unit is used as the reference flow for the life cycle inventory (LCI) and life cycle impact assessment (LCIA) results in accordance with EN 15804+A2.

The declared unit represents an average Fugenstone quartz surface product, calculated based on the total production output of engineered quartz slabs manufactured during the reference period. It reflects the average material composition (including quartz aggregates, polymer binders, pigments, and auxiliary materials) and the average energy and resource consumption associated with Fugenstone's quartz surface manufacturing processes.

The results presented are representative of the complete Fugenstone quartz surface product portfolio and are independent of individual slab thicknesses, surface finishes, colors, or design variations.

While slab thickness affects the weight per square meter, certain installation-related inputs in Module A5 (Installation)—such as mortar consumption—are based on installed area, not slab weight. For reference, the assumed mortar use is 3 kg per square meter of installed surface.

Given the EPD's declared unit is mass-based, the relative contribution of installation materials to the overall life cycle impact is minor. Therefore, no thickness-specific conversion factors are provided.

This EPD remains valid as a cradle-to-gate with options declaration per ton of product. For project-specific assessments requiring area-based comparisons, users may convert results using the average slab density of ~2,450 kg/m³.

Time representativeness: Primary data was collected from the manufacturing plant in Zhangzhou, Fujian for the period January 2024 – December 2024, and is representative of the product and its production process.

Geographical scope:

This Environmental Product Declaration follows a cradle-to-gate approach with options, as defined in EN 15804:2012+A2:2019. The system boundary includes the following modules:

- A1-A3: Product Stage (Raw Material Supply, Transport, and Manufacturing)
 - A1: Raw Material Supply: China (CN). Raw materials are sourced from global suppliers.

- A2: Transport to Manufacturing Plant: China (CN). Transportation of raw materials to the production facility.
- A3: Manufacturing: China. All manufacturing and production processes occur at Fugenstone facilities in the China.
- A4–A5 (Transport to Construction Site and Installation): Global (GLO), covering domestic and international distribution and installation.
- C1–C4 / Module D (End-of-Life and Benefits Beyond System Boundary): Global (GLO), based on local collection, recycling, and disposal practices.

Database(s) and LCA software used:

Ecoinvent 3.11.0 database and EN 15804 reference package based on EF 3.1 has been used.

EPD/LCA Tool used: Air.e LCA v.3.20.1.0**Description of system boundaries:**

The scope of the study is set to be Cradle to gate with options, modules C1–C4, module D and with optional modules (A4, A5). The systems boundaries for Module A3 are strictly referred to the Fugenstone manufacturing plant.

This Environmental Product Declaration (EPD) follows the structure and life cycle stages defined in the reference Product Category Rules (PCR) for Construction products, based on EN15804:2012+A2:2019.

The declared system boundary is cradle-to-gate with options, including the product stage (Modules A1–A3) and the additional stages:

- A4–A5: Transport to construction site and installation.
- C1–C4: Deconstruction/demolition, transport, waste processing, and final disposal.
- Module D: Benefits and loads beyond the system boundary (e.g., potential recycling or energy recovery).

Module A1: This life-cycle module includes the extraction and processing of natural resources and secondary materials used in the production of quartz surface slabs. It covers the supply of natural quartz, binders, pigments, and additives, including upstream energy use, emissions, and material processing at supplier sites.

Module A2: Transportation of raw materials to manufacturer: This stage includes the transportation of raw materials to the manufacturing facility and the movement of materials within the plant. The calculation is based on the average transport distances from suppliers in 2024.

- Vehicle used for transport - 3.5-7.5t & >32t trucks, Euro 5
- Vehicle capacity - 3.5 -7.5 tons and 25 tons
- Fuel type and consumption - Diesel, 0.38 litres per km
- Capacity utilization (including empty poly cartages) - 50% as assumed in Ecoinvent.
- Bulk Sea transportation - Mass of the transported product.

Module A3: Manufacturing: This module includes the manufacturing of quartz surface slabs, comprising crushing and grading of quartz, weighing and batching, mixing, moulding, compaction, curing, cooling, calibration, surface finishing, quality control, and packaging. Energy and water consumption, auxiliary materials, internal transport, and on-site emissions are included.

A production waste rate of 8% is assumed due to trimming, breakage, and off-spec products. Manufacturing waste is managed according to standard industrial practices.

Module A4 –Transport: This module includes the transport of finished quartz surface slabs from the manufacturing facility to the construction site. It considers transport distances, vehicle types, load factors, fuel consumption, and related emissions.

Module A5 – Installation: This module includes the installation of quartz surface slabs at the construction site. Installation is carried out using cement-based mortar. A consumption of 3 kg of cement-based mortar per 1 m² of installed quartz surface is assumed. Material losses during cutting and fitting, as well as packaging waste, are included. No significant energy or water consumption is assumed during installation.

Module C1: De-construction and demolition: This module includes the deconstruction and demolition of quartz surface slabs at the end of their service life. Mechanical demolition is assumed. An electricity consumption of 10 kWh per ton of quartz surface is considered for demolition activities. No selective dismantling, reuse, or recovery is assumed.

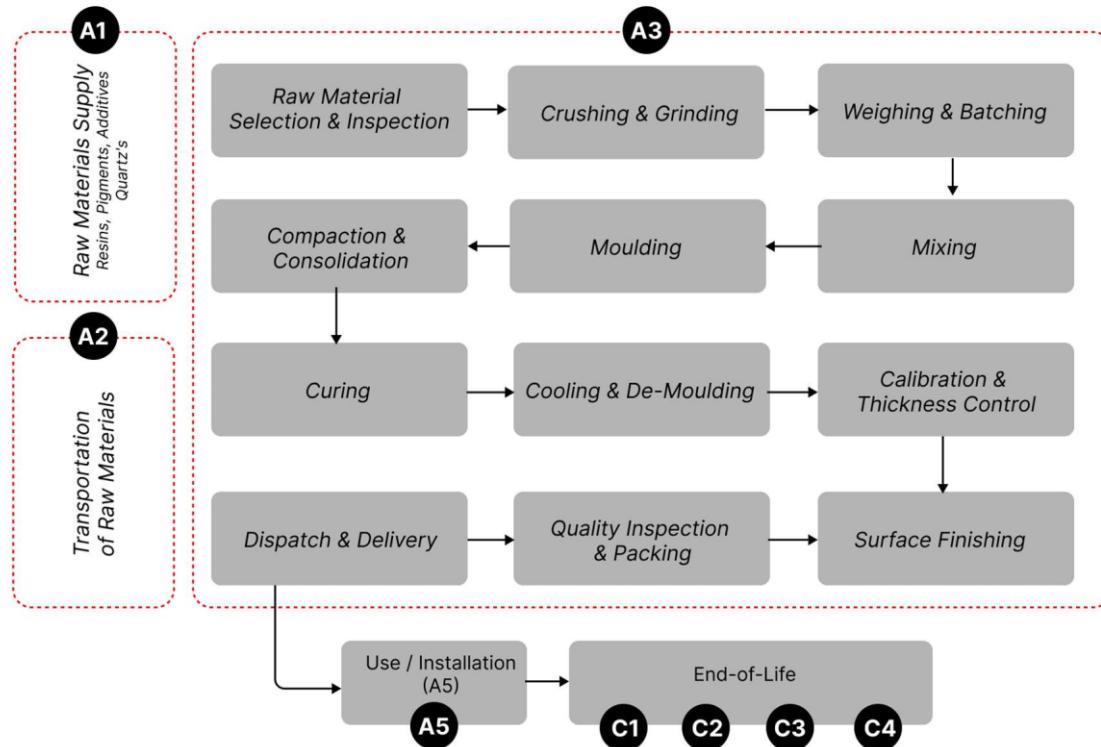
Module C2: Transportation to waste processing: This module includes the transport of quartz surface waste, together with mixed construction and demolition waste, from the demolition site to a waste handling or segregation area. A transport distance of 50 km is assumed. Transport impacts are calculated based on standard waste transport vehicles.

Module C3: Waste processing for reuse, recovery and/or recycling: Quartz surface waste is assumed to be mixed with construction and demolition waste, and segregation is not feasible. Therefore, no waste processing or segregation is applied, and the environmental impacts associated with this module are assumed to be zero.

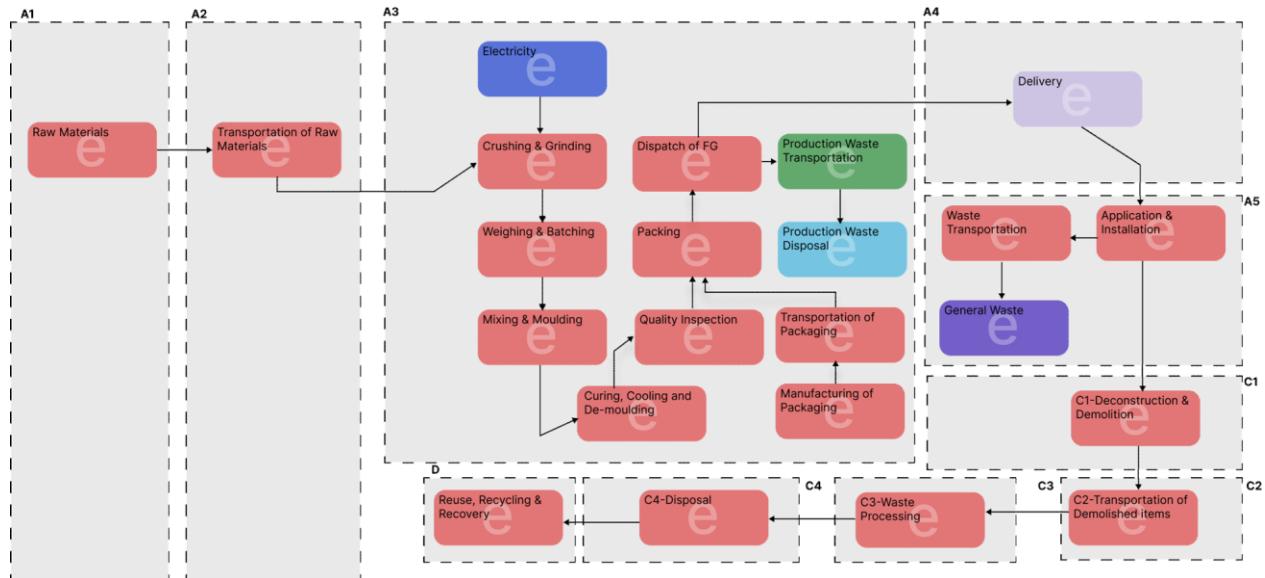
C4 – Disposal: This module includes the final disposal of quartz surface waste. 100% of the quartz surface waste is assumed to be disposed of in landfill together with mixed construction and demolition waste. Environmental impacts associated with landfill disposal of inert materials are included.

D – Benefits and Loads Beyond the System Boundary: No reuse, recycling, or energy recovery is assumed for quartz surface slabs. Therefore, Module D is declared as zero, with no benefits or loads beyond the system boundary reported.

Process flow diagram:



Life Cycle Assessment Modeling:



Modules declared, geographical scope, share of primary data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Distribution/installation stage		Use stage							End-of-life stage				Beyond product life cycle
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	Reuse-Recovery-Recycling-potential
Modules declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	D
Geography	CH	CH	CH	GLO	GLO								GLO	GLO	GLO	GLO	X
Share of primary data	<60%					-	-	-	-	-	-	-	-	-	-	-	GLO

Modules/processes/life-cycle stages declared shall be noted with "X".

Modules/processes/life-cycle stages not declared shall be marked as "ND".

Geographical scope country code(s): CH (China), GLO (Global)

ENVIRONMENTAL PERFORMANCE

LCA results of the product(s) - main environmental performance results

Mandatory impact category indicators according to EN 15804

Impact category indicators according to EN 15804 (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-Total	kg CO ₂ eq.	1.38E+00	1.09E-01	3.53E-03	ND	5.86E-03	1.01E-02	0.00E+00	5.25E-01	0.00E+00						
GWP-fossil	kg CO ₂ eq.	1.38E+00	1.09E-01	3.44E-03	ND	5.86E-03	1.01E-02	0.00E+00	5.25E-01	0.00E+00						
GWP-biogenic	kg CO ₂ eq.	1.79E-03	2.11E-05	8.66E-05	ND	7.70E-07	2.27E-06	0.00E+00	2.09E-04	0.00E+00						
GWP-luluc	kg CO ₂ eq.	1.35E-03	6.40E-05	2.11E-06	ND	5.47E-07	4.53E-06	0.00E+00	1.16E-04	0.00E+00						
ODP	kg CFC 11 eq.	2.24E-08	1.47E-09	1.91E-11	ND	1.35E-10	1.28E-10	0.00E+00	3.93E-09	0.00E+00						
AP	mol H ⁺ eq.	6.79E-03	2.01E-03	1.35E-05	ND	1.17E-05	3.45E-05	0.00E+00	6.37E-04	0.00E+00						
EP-freshwater	kg P eq.	4.39E-04	7.03E-06	4.53E-06	ND	4.66E-07	1.11E-06	0.00E+00	3.02E-05	0.00E+00						
EP-marine	kg N eq.	1.63E-03	4.71E-04	3.82E-06	ND	2.51E-06	1.10E-05	0.00E+00	1.63E-04	0.00E+00						
EP-terrestrial	mol N eq.	1.71E-02	5.23E-03	4.14E-05	ND	2.64E-05	1.19E-04	0.00E+00	1.72E-03	0.00E+00						
POCP	kg NMVOC eq.	5.81E-03	1.50E-03	1.24E-05	ND	1.67E-05	4.68E-05	0.00E+00	6.92E-04	0.00E+00						
ADP-minerals & metals*	kg Sb eq.	5.78E-06	2.08E-07	9.33E-09	ND	4.31E-08	3.31E-08	0.00E+00	5.94E-07	0.00E+00						
ADP-fossil*	MJ	1.99E+01	1.39E+00	2.48E-02	ND	1.00E-01	1.40E-01	0.00E+00	2.45E+00	0.00E+00						
WDP*	m ³	3.21E-01	5.45E-03	-2.80E-04	ND	6.19E-04	7.68E-04	0.00E+00	3.94E-02	0.00E+00						
Acronyms	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															

* Disclaimer: 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.

The EPD shall include a statement, in connection to the results of the impact indicators: "The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks."

Additional mandatory and voluntary impact category indicators

Additional mandatory and voluntary impact category indicators (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO ₂ eq.	1.39E+00	1.09E-01	3.56E-03	ND	5.88E-03	1.02E-02	0.00E+00	5.27E-01	0.00E+00						

Resource use indicators

Resource use indicators (Results per declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	1.37E+00	1.51E-02	2.39E-03	ND	3.07E-03	1.94E-03	0.00E+00	6.52E-02	0.00E+00						
PERM	MJ	1.24E-01	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
PERT	MJ	1.50E+00	1.51E-02	2.39E-03	ND	3.07E-03	1.94E-03	0.00E+00	6.52E-02	0.00E+00						
PENRE	MJ	1.88E+01	1.39E+00	2.48E-02	ND	1.00E-01	1.40E-01	0.00E+00	-5.73E+00	0.00E+00						
PENRM	MJ	1.09E+00	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	8.18E+00	0.00E+00						
PENRT	MJ	1.99E+01	1.39E+00	2.48E-02	ND	1.00E-01	1.40E-01	0.00E+00	2.45E+00	0.00E+00						
SM	kg	5.23E-02	7.23E-04	8.53E-06	ND	1.37E-05	6.16E-05	0.00E+00	3.28E-03	0.00E+00						
RSF	MJ	6.96E-01	3.93E-06	8.86E-06	ND	7.94E-08	7.96E-07	0.00E+00	2.41E-05	0.00E+00						
NRSF	MJ	1.73E-01	0.00E+00	0.00E+00	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
FW	m ³	1.23E+04	1.34E-04	-5.94E-06	ND	1.47E-05	1.88E-05	0.00E+00	9.48E-04	0.00E+00						
Acronyms	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 material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

Waste indicators

Waste indicators (Results per functional or declared unit)																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.15E-01	2.54E-03	1.17E-04	ND	1.05E-04	3.20E-04	0.00E+00	1.62E-01	0.00E+00						
Non-hazardous waste disposed	kg	2.28E+00	4.25E-02	1.82E-02	ND	2.53E-03	6.16E-03	0.00E+00	2.08E+00	0.00E+00						
Radioactive waste disposed	kg	1.98E-05	2.11E-07	1.48E-08	ND	1.25E-07	2.76E-08	0.00E+00	9.85E-07	0.00E+00						

Output flow indicators

Output flow indicators (Results per declared unit)																
Indicator	Unit	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	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00						
Material for recycling	kg	9.18E-04	1.01E-03	8.30E-07	ND	5.51E-06	1.58E-06	0.00E+00	4.47E-05	0.00E+00						
Materials for energy recovery	kg	1.96E-06	5.31E-08	1.27E-08	ND	1.57E-09	9.34E-09	0.00E+00	1.28E-07	0.00E+00						
Exported energy, electricity	MJ	9.13E-03	9.30E-05	7.36E-06	ND	2.21E-06	1.17E-05	0.00E+00	5.66E-04	0.00E+00						
Exported energy, thermal	MJ	4.07E-03	1.05E-04	2.18E-05	ND	2.80E-06	2.08E-05	0.00E+00	4.25E-04	0.00E+00						

ABBREVIATIONS

Abbreviation	Definition
General Abbreviations	
EN	European Norm (Standard)
EF	Environmental Footprint
GPI	General Programme Instructions
ISO	International Organization for Standardization
CEN	European Committee for Standardization
CLC	Co-location center
CPC	Central product classification
GHS	Globally harmonized system of classification and labelling of chemicals
GRI	Global Reporting Initiative
SVHC	Substances of Very High Concern
ND	Not Declared
CH	China

REFERENCES

- PCR P-3100: Construction products in general (EN 15804), Environmental Footprint Institute, 2025. Product Category Rules applied for Quartz Surfaces.
- EN 15804:2012+A2:2019, Sustainability of construction works – Environmental Product Declarations – Core rules for the product category of construction products.
- ISO 14020:2000, Environmental labels and declarations – General principles.
- ISO 14025:2006, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.
- ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework.
- ISO 14044:2006, Environmental management – Life cycle assessment – Requirements and guidelines.
- *Ecoinvent 3.11.0, Ecoinvent Centre, www.ecoinvent.org, 2025.*
- *Aire LCA v3.20.1.0, Solid Forest, www.solidforest.com, 2025.*
- *China Electricity Grid Mix Data, 2023, National Energy Administration, China.*
- *UAE National Greenhouse Gas Inventory Report (NIR), 2022.*
- *European Commission, Joint Research Centre, Model for Life Cycle Assessment (LCA) of Buildings, 2021.*
- *Aire LCA v3.20.1.0 by Solid Forest, www.solidforest.com*

VERSION HISTORY

This is the First Version of the EPD.

Original Version of the EPD, 2026-01-12

