Environmental Product Declaration

ENVIRONMENTAL FOOTPRINT INSTITUTE

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for:

Concrete Masonry Blocks

Hollow & Solid

Gulf Toub Cement LLC

Programme :	**The EFI Program**
Programme Operator :	**The Environment Footprint Institute**
EPD Registration No :	**260902EPD CPR-3100**
Issue Date :	17-09-2026
Valid Until :	16-09-2031
Geographical Scope :	United Arab Emirates
Reference Year :	2025

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at Gulf Toub Cement LLC

General Information

Programme :	The EFI Programme
Address :	The Environment Footprint Institute Calle Circe 49A Madrid, Spain
Website : Email :	www.environmentalfootprintinstitute.com info@environmentalfootprintinstitute.com

Product Category Rules (PCR)
Product Category Rules (PCR)
PCR review was conducted by: The Environmental Footprint Institute.
Product category rules (PCR): Under the general rules of the Environmental Footprint Institute and PCR P-3100: Construction products in general (EN-15804)
Complementary PCR : EN 16757:2022 for concrete and concrete elements.

Life Cycle Assessment (LCA)
LCA accountability: Mehmood Khan, CQES International LLC
☐ **Internal Verification** ☑ **Third Party Verification**
Accredited by: THE ENVIRONMENTAL FOOTPRINT INSTITUTE **Third party verifier:** Iván Jiménez Calle Circe 49A Madrid, Spain www.environmentalfootprintinstitute.com info@environmentalfootprintinstitute.com
Procedure for follow-up of data during EPD validity involves Internal verifier: ☐ Yes ☑ No

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

EPDs within the same product category but registered in different EPD programs may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterization factors); have equivalent content declarations; and be valid at the time of comparison.

Company Information

Owner of the EPD :

Gulf Toub Cement LLC

Contact : Mohammed Raihan

Email: qc@gulf-toub.com

Our company has been a dedicated manufacturer of high-quality concrete products for over a decade, driven by an experienced team committed to innovation and excellence in everything we do. Utilizing state-of-the-art plants and the latest technology, we produce concrete products quickly and efficiently while maintaining the highest standards of quality.

Our operations align with the high standards set by the UAE's construction materials industry, exemplified by Gulf Cement Company (GCC)—a regional leader established in 1977 that has grown into one of the nation's most established industrial cement manufacturers.

GCC has a strong legacy of adopting advanced technologies, being the first in the region to introduce high-efficiency bag filter house technology for environmental performance and pioneering advanced dome silo technology for clinker storage, reflecting a market standard of superior quality and reliability. With GCC operating a significant manufacturing facility in Dubai (UAE) and boasting substantial annual production capacity, our team embodies this same spirit of innovation and excellence, making us a trusted partner in the region's continued growth and development.

Certifications

The data and environmental performance presented in this EPD are supported by our company's certified management systems. We operate under ISO 9001 (Quality Management), ISO 14001 (Environmental Management), and ISO 45001 (Occupational Health and Safety Management) certifications. ISO 14001 ensures systematic identification, monitoring, and control of environmental aspects associated with concrete block production, while ISO 9001 and ISO 45001 guarantee that the product is manufactured under controlled, consistent, and safe operational conditions. Additionally, our facility is certified under the Dubai Central Laboratory (DCL) product conformity scheme, confirming compliance of our concrete masonry Hollow & Solid Blocks with applicable UAE technical requirements. This integrated management and certification framework enhances the reliability, traceability, and robustness of the life cycle inventory data used in this EPD.

Product Information

Product Name : **Hollow and Solid Concrete Masonry Blocks**

Product identification :

The results presented in this EPD are representative of all hollow and solid concrete masonry blocks manufactured at our production facility. The results are calculated on a per-ton basis, derived from the total production volume and the aggregated consumption of raw materials, energy, and water, as well as the total generation of waste and emissions associated with concrete block manufacturing during the defined reference period.

UN CPC Code	UN CPC 37520 - Concrete blocks, bricks, and other masonry products"
Reference Service Life (RSL)	100 years (standard practice for concrete masonry products)
Geographical Scope	United Arab Emirates
Location of Production Site :	Saih Shuaib 4, Dubai Industrial City, Dubai, United Arab Emirates

Product Picture :

Product Description :

Concrete masonry blocks are factory-produced precast concrete masonry units intended for use in load-bearing and non-load-bearing wall applications in buildings and civil engineering works. The products covered by this EPD are manufactured by Gulf Toub Cement LLC under controlled industrial conditions using highly automated German-made machines to achieve high compaction, high density, superior strength, and perfect finish.

The blocks are produced using a standardized manufacturing process consisting of batching, mixing, moulding, compaction, curing, and storage. The main raw materials include cementitious binder, natural and/or manufactured aggregates, water, and may contain admixtures, coloring pigments, and other materials incorporated during block manufacturing. No hazardous substances are intentionally added during production.

Hollow blocks are manufactured with hollow cores to reduce weight, improve insulation, facilitate handling, and provide space for reinforcing materials and service conduits. Solid blocks are high-density blocks primarily used for substructural, load-bearing, and foundation applications. The available block sizes, densities, unit weights, and compressive strengths are presented in the table below. Variations in thickness, density, and mix composition may occur within the product family; however, these are covered by the aggregated life cycle inventory data used for the environmental impact calculations in accordance with EN 15804 and PCR P-3100 requirements.

DESCRIPTION	SIZE MM	Block Density Kg/M3	WEIGHT KG	COMP. STRENGTH N/MM2
HOLLOW BLOCK 4"	400 X 100 X 200	1530	13	7.5
HOLLOW BLOCK 6"	400 X 150 X 200	1430	17.6	7.5
HOLLOW BLOCK 8"	400 X 200 X 200	1460	22.5	7.5
HOLLOW BLOCK 10"	400 X 250 X 200	1330	26	7.5
HOLLOW BLOCK 12"	400 X 300 X 200	1330	32	7.5
SOLID BLOCK 4"	400 X 100 X 200	2160	18	10-12.5
SOLID BLOCK 6"	400 X 150 X 200	2200	26	10-12.5
SOLID BLOCK 8"	400 X 200 X 200	2200	34	10-12.5
SOLID BLOCK 10"	400 X 250 X 200	2200	42	10-12.5
SOLID BLOCK 12"	400 X 300 X 200	2200	50	10-12.5

LCA Information

Declared Unit :

1 tonne (1,000 kg) of concrete masonry units, representing the weighted-average production of hollow and solid concrete masonry blocks manufactured at the Gulf Toub Cement LLC production facility. All environmental impacts and resource use are reported with reference to this declared unit, in accordance with EN 15804 requirements.

Time Representativeness :

The Life Cycle Inventory (LCI) data used in this EPD are representative of production activities during the reference period from January 2025 to December 2025.

Database(s) and LCA software used:

The LCA modelling and impact calculations were performed using Air.e LCA™ software (version 3.22.0.7) in combination with the Ecoinvent™ database (version 3.11.0). The EN 15804 system model was applied for the assessment of environmental impacts, using the characterization factors from EN 15804:2012+A2:2019.

Electricity usage in A3 :

A specific dataset with the Life Cycle Inventory (LCI) corresponding to the electricity mix in UAE, has been used for this LCA. 0.6279 kg CO2eq/kWh (GWP-GHG).

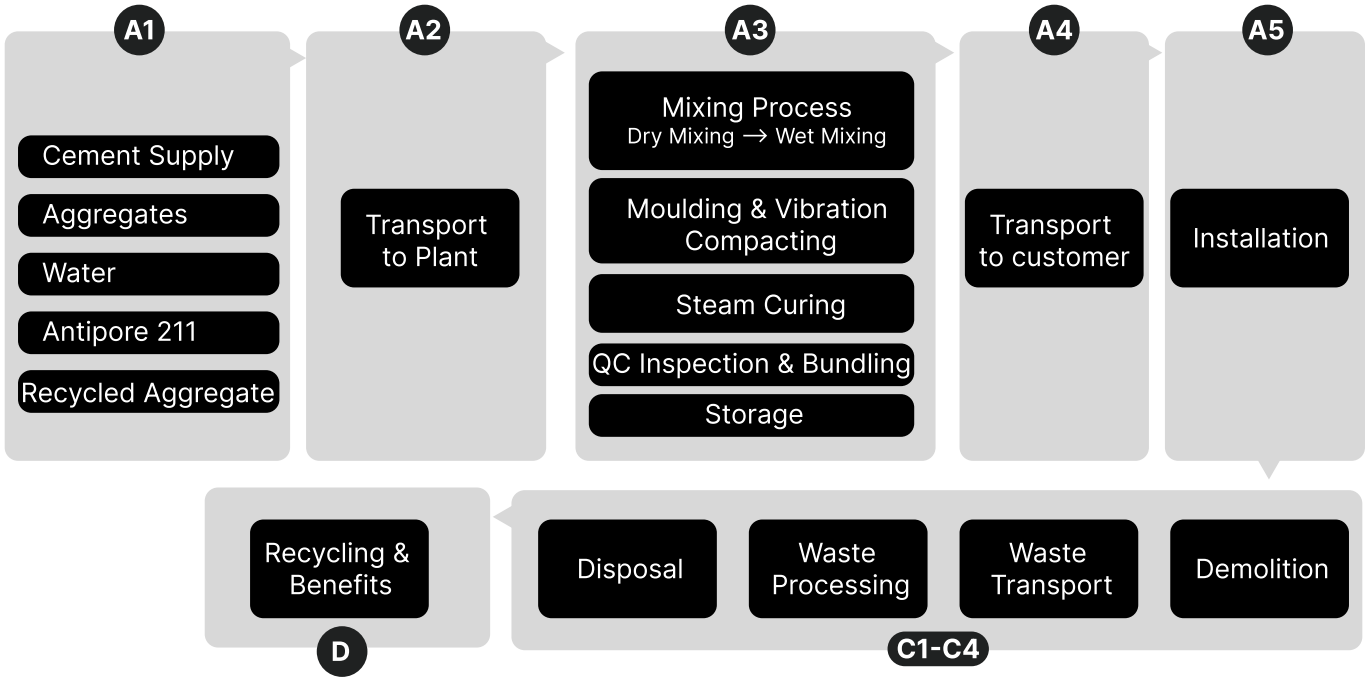
Cut-off rules:	More than 99% of the materials and energy consumption have been included. The Polluter Pays Principle and the Modularity Principle have been followed.
Allocation method:	No allocation was required, as the production of Concrete Masonry Hollow & Solid Blocks does not generate co-products with economic value. Where background datasets required allocation, the allocation rules applied within the selected databases and system model were followed in accordance with EN 15804.

Description of system boundaries:

This EPD follows a cradle-to-gate with options approach in accordance with EN 15804. It covers Modules A1–A3 (raw material supply, transport, and manufacturing), Module A4 (transport to the construction site), and Module A5 (installation at the construction site).

In addition, end-of-life Modules C1–C4 (deconstruction/demolition, transport, waste processing, and disposal) and Module D (benefits and loads beyond the system boundary) are included based on standardized and scenario-based assumptions applicable to Concrete Masonry Hollow & Solid Blocks.

Use-stage Modules B1–B7 are excluded from the declared scope of this EPD. In accordance with EN 16757, carbonation (CO_2 uptake) during the use stage is not considered in this EPD and is therefore excluded from Module B.



Core Processes

Upstream Stage

This stage includes the extraction, production, and transportation of raw materials used in the production of Concrete Masonry Blocks at Gulf Toub Cement LLC.

A1-Raw Material Supply: The A1 module covers the extraction, processing, and upstream transportation of raw materials used in the production of Concrete Masonry Blocks. This includes Cement production; 5-10 mm Aggregate (Gravel) extraction and processing; 0-5 mm Aggregate (Gravel) extraction and processing and Antipore 211 (admixture) production. All raw materials are sourced locally within the UAE or imported through international suppliers. This stage also accounts for energy consumption and emissions from pre-processing activities prior to block production.

A2 - Transport: The A2 module includes the transportation of raw materials from their point of extraction or processing to the Gulf Toub Cement LLC manufacturing site in the UAE. Transport of raw materials to the production site is taken as the weight average values for transport from suppliers for the year of 2025.

- Vehicle used for transport - freight, lorry, 16-32 metric ton, diesel, EURO 5
- Vehicle capacity - average load 5.79 tons and GVW 25 tons
- Fuel type and consumption - Diesel, as per ecoinvent
- Bulk transportation - Mass of the transported product.

Core Stage

This stage includes the manufacturing of Concrete Masonry Blocks, encompassing material consumption, energy use, emissions, and waste treatment.

A3 - Manufacturing:
The A3 stage covers all processes within the Gulf Toub Cement LLC manufacturing facility, from the receipt of raw materials to the production of Concrete Masonry Blocks. This includes the mixing of Portland CEM I cement, 5–10 mm aggregate (gravel), 0–5 mm aggregate (gravel), recycled aggregates, water, and Antipore 211 admixture; energy consumption (electricity, diesel, etc.); and emissions to air and water. Production waste and manufacturing residues generated during manufacturing, amounting to approximately 11,823 tonnes, are crushed and reused internally in the manufacturing process as secondary aggregate/input. The electricity consumption associated with crushing the recovered production waste is 1.5 kWh per tonne of waste.

A4 - Transportation of Goods:
Stage A4 includes the transport of finished Concrete Masonry Blocks from the manufacturing facility to customers or distribution points. Transportation is carried out using Euro 5 diesel trucks, including 3.5–7.5 ton and >32 ton vehicles, with carrying capacities of 3.5–7.5 tons and 25 tons, respectively. Diesel consumption is assumed as 0.38 liters/km. Transport impacts are calculated based on the mass of the product and transport distance (ton-kilometer basis).

A5 - Installation :
Module A5 includes activities related to the installation of Concrete Masonry Blocks at the construction site. This module accounts for the handling and disposal of packaging waste, specifically nylon straps, which are collected and sent to recycling or disposal according to local waste management practices. Concrete Masonry Blocks are installed using cement mortar, with an average consumption of 0.25 tons of mortar per ton of blocks, based on standard masonry practice with 10 mm joints. The environmental impacts of both the blocks and the mortar used during installation are included in this module.

C1 – Deconstruction / Demolition :
Module C1 covers the demolition and removal of the Concrete Masonry Blocks at the end of their service life. The demolition process is assumed to be carried out using diesel-powered construction machinery, with an energy consumption of 0.01 kWh/kg (10 kWh/tonne) of demolished product. This value is based on commonly applied demolition energy assumptions for concrete construction products, including the approach documented in concrete-related EPDs and based on Bozdağ & Seçer (2007).

C2 – Transport :
Module C2 includes the transportation of demolished Concrete Masonry Blocks from the demolition site to recycling or disposal facilities. Transport is carried out using Euro 5 diesel trucks, including 3.5–7.5 ton and >32 ton vehicles, with carrying capacities of 3.5–7.5 tons and 25 tons, respectively. An average transport distance of 50 km by road is assumed. Transport impacts are calculated based on the mass of the transported material and distance (ton-kilometer basis).

C3 – Waste Processing
Module C3 includes the processing of demolished blocks for reuse, recycling, or recovery. Activities include sorting and preparation. Energy required for sorting is assumed to be 0.05 kWh per kg of waste material (crushed concrete). A portion of the blocks may be crushed and reused as aggregate in other construction applications.

C4 – Disposal :
The end-of-life scenario for concrete blocks in the UAE is based on the latest available regional waste stream analysis for construction and demolition waste (C&DW). Concrete and masonry fractions constitute approximately 80% of all C&DW by weight in the UAE (Dubai Municipality, 2019).

Despite national policies aiming for 75% diversion of C&DW from landfills, the recycling rate for the inert concrete/masonry fraction remains low, estimated at only 5% (ibid.). This 5% represents downcycling for use as fill material or sub-base in civil engineering projects. True closed-loop recycling into new concrete products is negligible. Therefore, a conservative distribution of 95% to landfill and 5% to recycling is used for this EPD. It is assumed that no incineration occurs for this inert mineral product.

Module D – Benefits and Loads Beyond the System Boundary :
The potential benefits from recycling (5% scenario) are calculated based on the avoidance of virgin aggregate production. The recycled concrete aggregate (RCA) is assumed to substitute for natural aggregate in road sub-base applications. The burdens (e.g., energy for crushing) for the 5% recycling scenario are included in Module C3. The disposal burdens for the 95% landfill scenario are in Module C4. Module D accounts for the credit from avoiding virgin aggregate production.

Assumptions :

This Environmental Product Declaration (EPD) is based on specific production data for the 2025 reference period at the Gulf Toub Cement LLC facility in Dubai, UAE. For the declared unit of one tonne (1,000 kg) of finished concrete blocks, the Life Cycle Inventory (LCI) accounts for a total production output of 236,757.10 tonnes.

The mass balance accounts for the relevant material inputs and outputs associated with the manufacturing process, including finished products, process water loss through evaporation, particulate emissions, and production waste. Based on the available production data, approximately 11,823 tonnes of production waste and other manufacturing residues are identified after accounting for the finished product output, water loss, and particulate emissions.

The production waste comprises fresh concrete waste, off-specification units, and other manufacturing residues. The recoverable concrete waste is assumed to be crushed and reused internally in the manufacturing process as secondary aggregate/input. The electricity consumption associated with crushing and processing the recovered waste is assumed to be 1.5 kWh per tonne of recovered waste.

More Information

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

	Product Stage			Construction Process Stage		Use Stage	End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use, maintenance, repair, replacement, refurbishment, operational energy and water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1-B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	ND	X	X	X	X	X
Geography	AE	AE	AE	AE	AE	--	AE	AE	AE	AE	AE
Specific data used	>10%			--	--	--	--	--	--	--	--

Legend: *X = Included | ND = Not Declared | AE = United Arab Emirates*

Content Information

Product Content:

Product Components	Weight %	Post-Consumer material weight -%	Biogenic material, kg C/kg
Cement	8-10	0	0
Aggregate (5-10 mm)	10-15	0	0
Aggregate (0-5 mm)	40-50	0	0
Aggregate Recycled (5-10mm)	10-15	0	0
Aggregate Recycled (0-5mm)	10-15	0	0
Antipore 211	0.01-0.05	0	0
Water	3-7	0	0
Total	100	0	0

Packaging Material Content:

Packaging Material	Weight (ton)/DU	Weight % (Versus the Product)	Weight biogenic carbon, kg C/kg
Nylon Straps	3.80E-04	3.80E-02	0.00E+00

Dangerous substances from the candidate list of SVHC for Authorisation:

Dangerous substances from the candidate list of SVHC for Authorisation:	EC No.	CAS No.	Weight-% per declared unit
None	--	--	--
None	--	--	--

Biogenic carbon content:

Biogenic carbon content	A1-A3/Unit
Biogenic carbon content in product	0.00E+00 kg C
Biogenic carbon content in accompanying packaging	0.00E+00 kg C

Manufacturing Process:

The manufacturing process for the concrete blocks begins with the batching of raw materials, where aggregates and cement are accurately weighed according to the specified mix design and transferred to an industrial mixer for dry and wet mixing. The fresh concrete is then fed into moulds using an automated block-making machine and compacted through vibration. The formed blocks are subsequently transferred to the curing chamber for approximately 24 hours. After curing, the blocks are automatically handled, bundled, tagged with a Lot identification system for traceability, and transferred to yard storage. Throughout the manufacturing process, quality control inspections are carried out to verify mix properties and product dimensions, with the relevant production and inspection data recorded to support consistent product quality and the life cycle inventory for material and energy inputs.

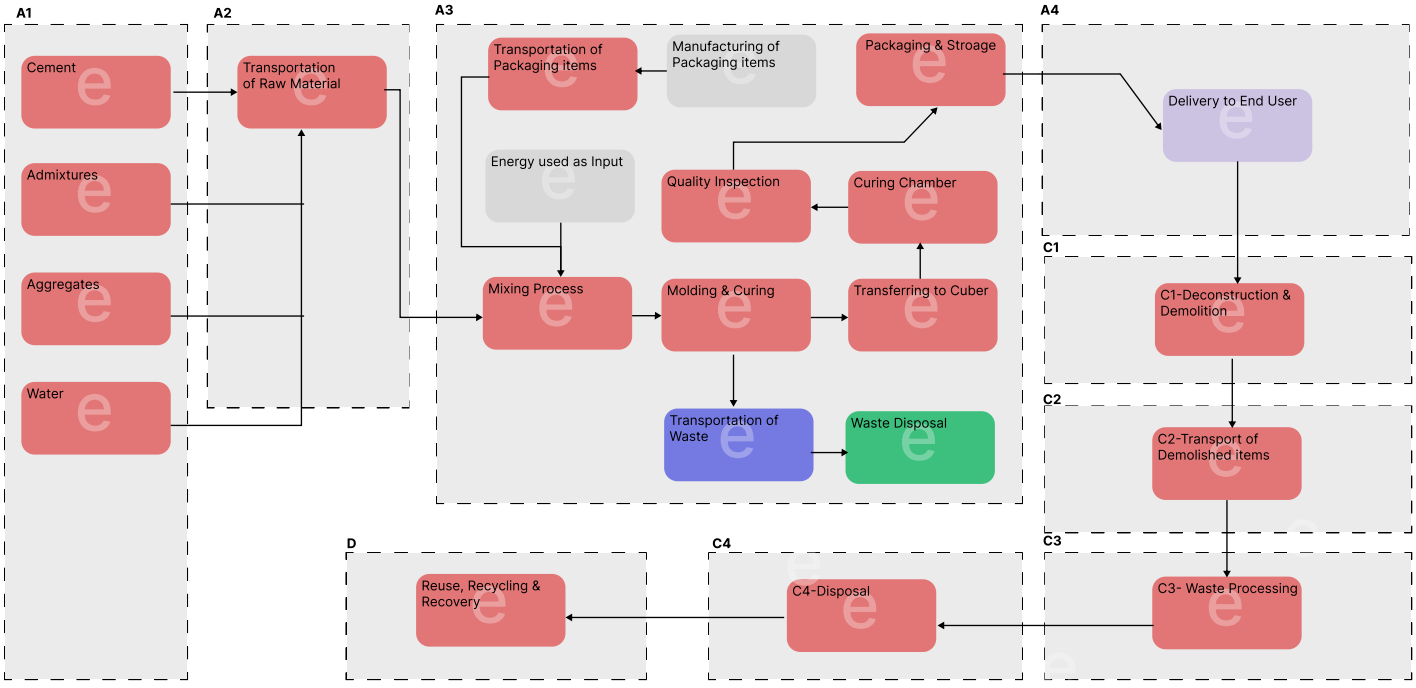
Technical information:

For more technical information about the Concrete Masonry Hollow & Solid Blocks, please refer to the product TDS

Data quality:
This EPD was developed in compliance with ISO 14025, ISO 14040/14044, and the core rules of EN 15804:2012+A2:2019, following PCR-3100 for construction products (UN CPC 37520). Primary, site-specific data for the 2025 reference period were collected for raw material supply, transport, and manufacturing (Modules A1-A3) at the Gulf Toub Cement facility in Dubai, UAE. Background system data were sourced from the Ecoinvent 3.11.0 database.

The LCA was modelled using Air.e LCA software v3.22.0.7, applying EN 15804 characterization factors. Data quality objectives prioritized temporal, geographical, and technological representativeness, with over 90% of the mass and energy flows in Modules A1-A3 based on measured plant data.

Life Cycle Assessment Modelling



Environmental Performance

Potential Environment Impacts

The following tables present the environmental performance for the declared unit of 1000 kg of concrete block produced by Gulf Toub Cement LLC. Due to the integrated nature of the fully automated production line, it was not feasible to isolate the consumption of electricity, water, and raw materials separately for hollow and solid concrete masonry blocks. Consequently, the life cycle inventory (LCI) was calculated using the total annual plant consumption and allocated to the hollow and solid product family based on the applicable production mass shares.

The estimated impact results are relative indicators and do not indicate impact category endpoints, exceedance of threshold values, safety margins, or risks.

Core Environmental Impact Indicators

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.	1.79E+02	1.36E+01	5.24E+01	ND	ND	ND	ND	ND	ND	ND	3.62E+00	9.90E+00	1.60E+01	5.95E+00	-2.02E-01
GWP-fossil	kg CO_2 eq.	1.79E+02	1.36E+01	5.22E+01	ND	ND	ND	ND	ND	ND	ND	3.62E+00	9.89E+00	1.59E+01	5.94E+00	-2.02E-01
GWP-biogenic	kg CO_2 eq.	1.05E-01	3.05E-03	1.94E-01	ND	ND	ND	ND	ND	ND	ND	3.61E-04	2.27E-03	1.76E-02	1.84E-03	-9.41E-06
GWP-luluc	kg CO_2 eq.	6.45E-02	6.08E-03	1.53E-02	ND	ND	ND	ND	ND	ND	ND	3.71E-04	4.54E-03	2.60E-02	3.41E-03	-8.38E-06
ODP	kg CFC 11 eq.	1.56E-06	1.72E-07	2.07E-07	ND	ND	ND	ND	ND	ND	ND	5.38E-08	1.34E-07	2.57E-07	1.66E-07	-3.06E-09
AP	mol H^+ eq.	6.17E-01	4.63E-02	1.84E-01	ND	ND	ND	ND	ND	ND	ND	3.24E-02	2.37E-02	1.20E-01	4.16E-02	-1.86E-03
EP-freshwater	kg P eq.	1.95E-02	1.49E-03	1.07E-02	ND	ND	ND	ND	ND	ND	ND	1.17E-04	1.08E-03	8.92E-03	5.20E-04	-2.55E-06
EP-marine	kg N eq.	1.90E-01	1.48E-02	6.06E-02	ND	ND	ND	ND	ND	ND	ND	1.51E-02	5.52E-03	3.96E-02	1.60E-02	-8.83E-04
EP-terrestrial	mol N eq.	2.06E+00	1.59E-01	6.67E-01	ND	ND	ND	ND	ND	ND	ND	1.65E-01	5.88E-02	4.27E-01	1.75E-01	-9.65E-03
POCP	kg NMVOC eq.	6.93E-01	6.27E-02	1.84E-01	ND	ND	ND	ND	ND	ND	ND	4.94E-02	3.21E-02	1.39E-01	6.30E-02	-2.88E-03
ADP-minerals & metals*	kg Sb eq.	5.69E-04	4.44E-05	5.35E-05	ND	ND	ND	ND	ND	ND	ND	1.26E-06	3.30E-05	4.09E-05	8.65E-06	1.71E-08
ADP-fossil*	MJ	1.49E+03	1.71E+02	3.28E+02	ND	ND	ND	ND	ND	ND	ND	4.35E+01	1.25E+02	2.22E+02	1.33E+02	-2.44E+00
WDP*	m^3	2.42E+01	1.06E+00	3.98E+00	ND	ND	ND	ND	ND	ND	ND	1.37E-01	7.99E-01	-6.24E+01	6.46E+00	7.30E-03
PM	U235e	1.21E-05	1.05E-06	1.55E-06	ND	ND	ND	ND	ND	ND	ND	9.25E-07	7.20E-07	9.78E-06	9.57E-07	-4.26E-07
IRP	D.I	2.71E+00	1.51E-01	3.31E-01	ND	ND	ND	ND	ND	ND	ND	2.01E-02	1.12E-01	4.29E-01	8.72E-02	-1.41E-04
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,Ionizing Radiation – Human Health (IRP),Particulate Matter (PM)															

Note on Declared Modules:

**CO_2 emissions from fuel combustion in A3 were calculated using standard carbon content factors and the 44/12 molecular weight ratio, in accordance with IPCC guidelines.*

Use of Natural Resources

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	5.14E+01	2.60E+00	3.85E+00	ND	ND	ND	ND	ND	ND	ND	2.96E-01	1.93E+00	7.80E+00	1.36E+00	1.80E-02
PERM	MJ	0.00E+00	0.00E+00	3.49E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.81E+01	2.60E+00	7.34E+00	ND	ND	ND	ND	ND	ND	ND	2.96E-01	1.93E+00	7.80E+00	1.36E+00	1.80E-02
PENRE	MJ	1.86E+03	1.88E+02	3.45E+02	ND	ND	ND	ND	ND	ND	ND	4.72E+01	1.37E+02	2.52E+02	1.46E+02	2.86E+00
PENRM	MJ	1.73E+01	0.00E+00	2.29E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	1.78E+03	1.88E+02	3.47E+02	ND	ND	ND	ND	ND	ND	ND	4.72E+01	1.37E+02	2.52E+02	1.46E+02	2.86E+00
SM	kg	6.93E-01	8.26E-02	7.88E-02	ND	ND	ND	ND	ND	ND	ND	1.95E-02	6.12E-02	9.43E-02	3.62E-02	1.18E-03
RSF	MJ	3.49E+01	1.07E-03	1.03E-03	ND	ND	ND	ND	ND	ND	ND	5.12E-05	7.94E-04	1.15E-03	7.56E-04	3.10E-06
NRSF	MJ	1.14E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.09E+03	2.59E-02	9.54E-02	ND	ND	ND	ND	ND	ND	ND	3.33E-03	1.95E-02	-1.45E+00	1.51E-01	2.02E-04
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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

Environmental Impact -GWP-GHG

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.	1.80E+02	1.37E+01	5.27E+01	ND	ND	ND	ND	ND	ND	ND	3.68E+00	9.97E+00	1.62E+01	6.09E+00	2.23E-01

End of Life - Outflows

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	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	4.06E-02	2.12E-03	6.47E-03	ND	ND	ND	ND	ND	ND	ND	2.10E-04	1.57E-03	6.64E-03	1.58E-03	1.27E-05
Materials for energy recovery	kg	1.47E-04	1.25E-05	3.26E-05	ND	ND	ND	ND	ND	ND	ND	6.70E-07	9.30E-06	1.55E-05	2.80E-06	4.07E-08
Exported energy, electricity	MJ	2.44E-01	1.57E-02	1.39E-02	ND	ND	ND	ND	ND	ND	ND	2.23E-03	1.16E-02	4.99E-02	9.45E-03	1.35E-04
Exported energy, thermal	MJ	2.18E-01	2.79E-02	2.16E-02	ND	ND	ND	ND	ND	ND	ND	1.05E-03	2.07E-02	2.01E-02	5.02E-03	6.34E-05

End of Life - waste

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	5.45E+00	4.29E-01	9.05E-01	ND	ND	ND	ND	ND	ND	ND	5.29E-02	3.13E-01	6.69E-01	1.66E-01	3.21E-03
Non-hazardous waste disposed	kg	1.58E+02	8.26E+00	5.44E+01	ND	ND	ND	ND	ND	ND	ND	7.71E-01	6.03E+00	1.07E+03	3.83E+00	4.68E-02
Radioactive waste disposed	kg	6.60E-04	3.70E-05	9.04E-05	ND	ND	ND	ND	ND	ND	ND	4.93E-06	2.73E-05	1.04E-04	2.12E-05	2.99E-07

Additional information

No additional information is provided.

Information related to Sector EPD

This is not sector EPD.

Differences versus previous versions

This is the first version of the EPD.

References

LCA Report: Life Cycle Inventory of Gulf Toub Cement LLC, Dubai (UAE).

Software: Air.e LCA Version 3.22.0.7 www.solidforest.com

Main database: Ecoinvent 3.11.0 www.ecoinvent.org

Geographical scope of the EPD: United Arab Emirates

ISO 14040:2006 "Environmental management -- life cycle assessment -- principles and framework";

ISO 14044:2006 "Environmental management -- life cycle assessment -- requirements and guidelines";

ISO 14020:2000 "Environmental Labels and declarations - General Principles

ISO 14025:2006 "Environmental labels and declarations -- type III environmental declarations - principles and procedures".

EN 15804+A2:2019/AC:2021 European Committee for Standardization: Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products.

Dubai Municipality. (2019). Title of the specific report on Construction and Demolition Waste Management in Dubai. Dubai, United Arab Emirates.

UAE Ministry of Climate Change and Environment (MOCCAE). (Year). Title of the relevant report or data source.

Bozdağ, Ö. & Seçer, M. (2007), [demolition energy consumption basis] — commonly cited as 10 kWh/m² for demolition. Using an assumed average concrete building mass of 1,000 kg/m², this corresponds to 0.01 kWh/kg or 10 kWh/tonne.

U.S. Environmental Protection Agency (EPA). (2006). AP-42, Fifth Edition, Volume I, Chapter 11, Section 11.12: Concrete Batching. June 2006. Office of Air Quality Planning and Standards, Research Triangle Park, NC.

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