

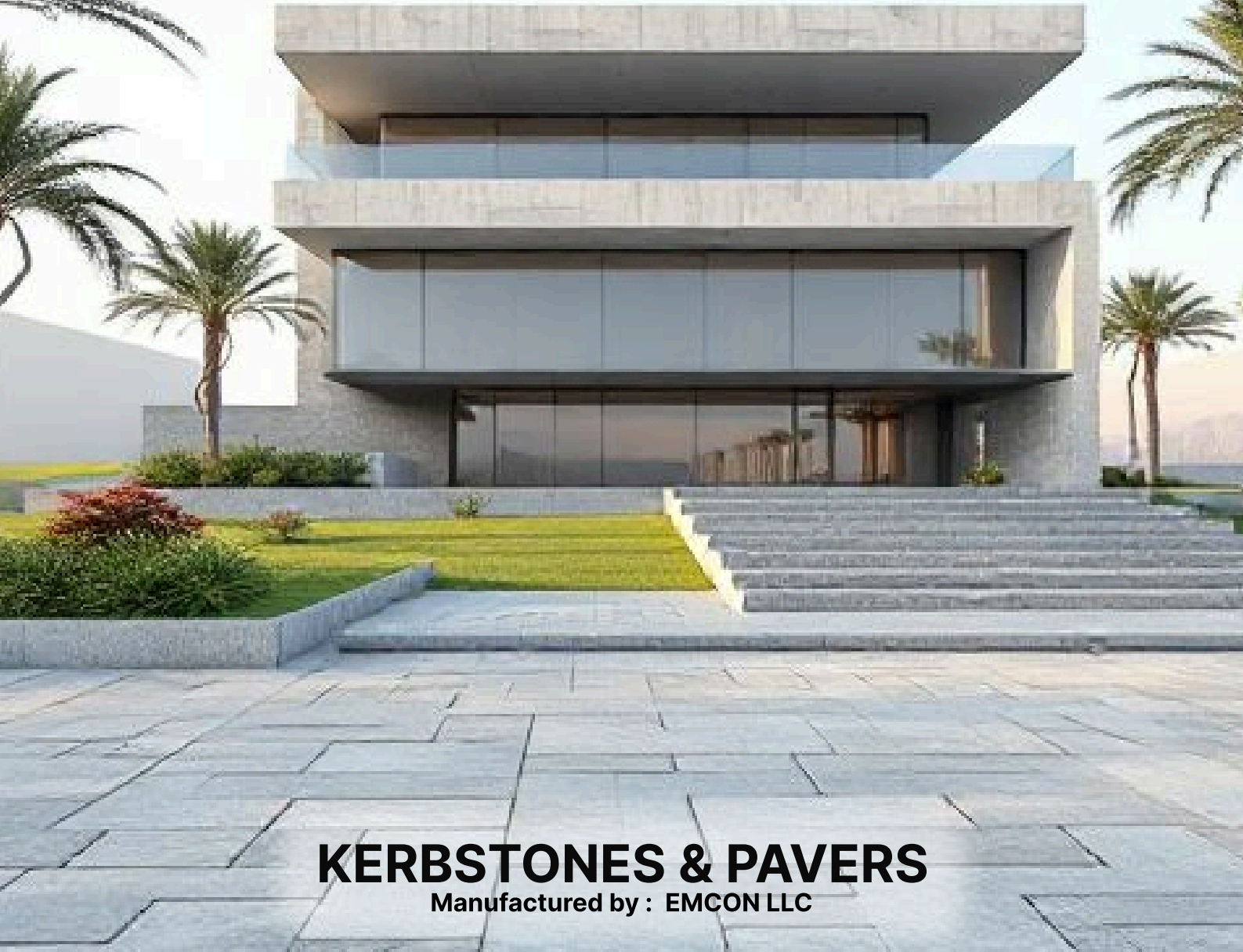
# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and  
EN 15804:2012+A2:2021 :

# EMCON



ENVIRONMENTAL FOOTPRINT INSTITUTE



## KERBSTONES & PAVERS

Manufactured by : EMCON LLC

**Programme:**  
**Programme operator:**  
**EPD Reference number:**  
**Issue date:**  
**Valid until:**  
**Geographical Scope**

**The EFI Program**  
**The Environmental Footprint Institute**  
**250103EPD CR:P-3100**  
**25.01.2025**  
**24.01.2030**  
Manufactured in **DUBAI (UAE)**  
and distributed in **United Arab Emirates**

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## 1.0 INTRODUCTION

This report contains the environmental performance of the manufacturing process of **KERBSTONE & PAVERS**, Manufactured by **EMCOM LLC**. located in Post Box # 62942 Dubai, United Arab Emirates. This Environmental Product Declaration (EPD) has been developed using the Life Cycle Assessment (LCA) methodology. The environmental impact values calculated are expressed to One-Ton of Kerbstone and Pavers.

The assessed life cycle includes all phases in the manufacturing process of kerbstone & pavers in a “cradle to gate with options (A1-A5,C,D)” scope. This LCA covers transportation of raw materials, production, distribution of final product to the customer and end of life stages.

This EPD has been conducted according to the program operator regulations and it has been verified in accordance with The Environmental Footprint Institute. The EPD regulation is a system for the international use of Type III Environmental Declarations, according to ISO 14025:2006. Not only the system, but also its applications, is described in the Programmer's Product Category Rules (PCR). This report has been made following the specifications given in the European standard EN 15804:2012+A2:2019/AC:2021.

## 2.0 COMPANY INFORMATION

EMCON L.L.C. was established by Al Naboodah Laing in 1978 to supply concrete blocks to the construction industry in UAE and was part of the group till June 2000.

EMCON gradually emerged stronger and bigger, supplying to more than 3000 major projects in UAE and serving more than 700 customers. EMCON has successfully supplied to prestigious projects like Burj Khalifa, Burj Al Arab, Emirates Tower, Airport Expansion and Grand Hyatt to name a few.

EMCON is fully equipped and geared to meet new challenges with its present capacity of producing a variety of concrete blocks and interlocking tiles to serve the construction industry. Situated in Al Quoz Industrial area of Dubai and Hamriya Free Zone (Sharjah), we are equipped with modern plants such as MASA 9001 XL to produce standard and special range of products. Our Deliveries to site are achieved by our fleet of vehicles which are all fitted with mechanical off-loading facility.



# KERBSTONE & PAVERS

Manufactured by **EMCON LLC**

EMCON have many specialty products and we are known for our innovative products range such as Concrete Lightweight and Normal weight Masonry Blocks, Thermal Insulated Blocks, Concrete Interlock pavers, Concrete Tiles, Concrete Kerbs...etc.

EMCON blocks and interlocking tiles are manufactured under strict quality-controlled conditions using high quality materials to ensure high class products are delivered to the clients to suit their needs.

## Certifications



## Sustainable Practices

EMCON LLC is dedicated to eco-friendly and sustainable practices by incorporating backward and forward integration into its manufacturing processes:

- Sourcing raw materials from the nearest suppliers to minimize the environmental impact of transportation.
- Utilizing recycled materials and reducing waste to further lower the carbon footprint and environmental impact.



## 4.0 PRODUCT INFORMATION

### 4.1 Analyzed Product

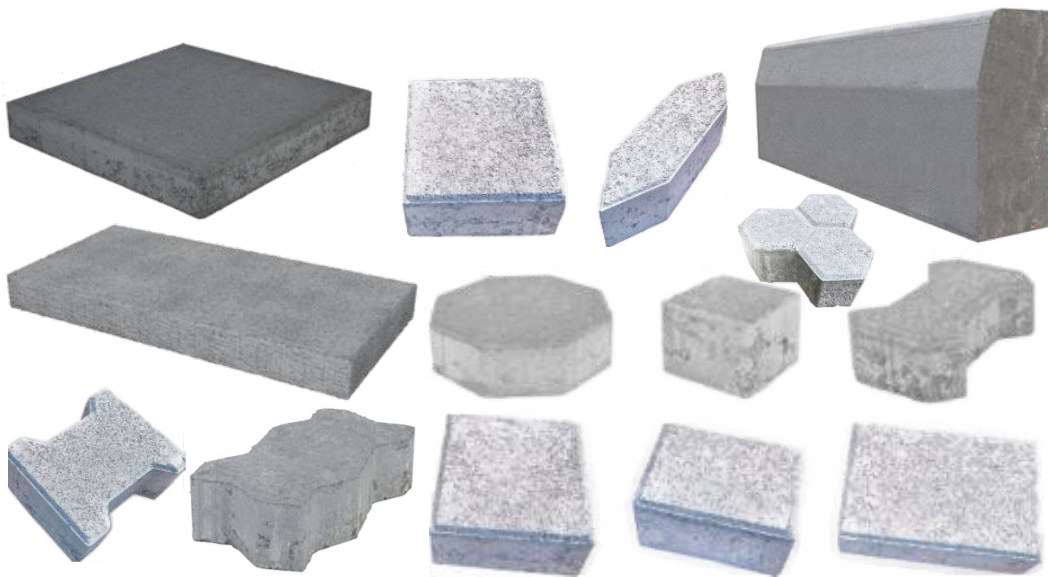
The assessed system in this Environmental Product Declaration (EPD) comprises the full life cycle of **Kerbstones and Pavers** with different sizes manufactured by Emcon LLC in its facility in Dubai, United Arab Emirates. This assessment has been done using the production data of year 2023-2024.

### 4.2 Technical Details

Emcon manufactures and sells the following types of Kerbstones and Pavers :

**Kerbstones** : EMCON LLC specializes in the production of premium-quality kerbstones designed to meet a wide range of infrastructure and landscaping requirements. Manufactured with precision and durability in mind, EMCON's kerbstones ensure long-lasting performance and an appealing finish for diverse projects. Their products are available in wide ranges and sizes (L:100-915mm, W:50-200mm and H:125-440mm) according to the product catalogue.

**Pavers** : EMCON LLC is a leading manufacturer of high-quality concrete pavers, offering a diverse range of designs to meet various architectural and landscaping needs. Their product line-up includes rectangular, square, behaton, uni, quadro, emplaza, tegula, monaco and tri-hexagon with all the available sizes, textures and colours according to the product catalogue.



### 4.2 Product Applications

On-site installation of kerbstones and pavers requires careful preparation and precise execution to ensure durability and functionality. Begin by leveling and compacting the base soil, followed by adding a layer of compacted sub-base material for stability. For kerbstones, position them on a concrete bed and secure them with a mortar or concrete backing to ensure alignment and support. Pavers are typically laid on a sand bed, starting from one corner and working outward, with consistent spacing and proper interlocking to prevent movement. Once laid, the gaps are filled with sand, and the surface is compacted using a plate compactor to achieve a smooth, even finish. Regular checks for alignment and drainage ensure the installation meets both aesthetic and functional requirements.

Note: The values provided above represent the ranges for all products. For specific technical specifications, please refer to the Technical Data Sheet for each individual product.

## 5.0 LCA INFORMATION

This EPD is intended for diverse applications, including industry databases, publications, and communication within the business-to-business (B2B) landscape. Specifically designed for the environmental assessment of buildings, EPDs allow stakeholders to access crucial information regarding a product's environmental performance. This tailored design facilitates B2B communication, enabling companies to make environmentally conscious decisions when selecting materials and components for construction projects. The primary target audience for EPDs is both business-to-business (B2B) interactions, where companies can exchange and evaluate environmental information, and business-to-consumer (B2C) scenarios, where end-users can make informed, sustainable choices based on the disclosed environmental impact of products.

### 5.1 Declared Unit

The Declared Unit of the Life Cycle Assessments is One-ton of **KERBSTONE & PAVERS** plus the proportional part of packaging. All direct and indirect environmental impacts, as well as the use of resources, are reported referred to this unit. This EPD presents the environmental impacts associated to the LCA of the analyzed products

### 5.2 Time Representativeness

Manufacturing facility specific data from **EMCON LLC** are based on 1 year average for process data (Reference year January to December 2024). The following rules for time scope of data were applied - < 10 years for background data and < 2 years for manufacturer's data.

### 5.3 LCA Software and Database

Version 3.17.4.0 of software Air.e LCA™ with Ecoinvent™ 3.10.0 database has been used for LCA modeling and impacts calculations. EN15804 system model is used in this LCA.

### 5.4 System Boundaries

This EPD covers all product stages from “cradle to gate with options (A1-A5,C,D)”, i.e this LCA covers Production stage A1-A3, Transportation A4, Application of Kerbstone & pavers A5, End of life stages C1-C4 and Resource recovery stage D according to EN 15804 + A2/AC:2021.

The system boundaries of this environmental study encompass not only the company-controlled processes but also include upstream and downstream activities such as fuel extraction, material production, and electricity generation, which are not directly managed by the company.

All related direct and indirect environmental impacts related to these elements have been calculated and were included in the LCAs in this EPD. The stage B1,B2,B3,B4,B5,B6 and B7 is not included in this EPD.

**Upstream Processes (A1: Raw Material Supply):** Production of the product starts with mainly raw material production and transportation from different parts of the world and some locally sourced. 'Raw material supply' includes raw material extraction before production.

**Core Processes (A2: Transportation, A3: Manufacturing, A4: Transport, A5: Application):**

Transport is considered for the delivery of raw materials to the plant and the movement of materials within the facility. Electricity is consumed during the production of kerbstone & pavers. These products are distributed to customers at various locations. The production process starts with the receipt and handling of raw materials, followed by mixing, molding, curing, quality inspection, marking, packaging, and storage in the warehouse before final distribution. To create a scenario for the A4 phase, all Kerbstone & pavers are distributed from January to December 2024 have been analyzed to represent typical transportation patterns, including international transport where relevant. The transport vehicles used include 3.5-7.5-ton trucks and larger >32-ton trucks, following Euro 5 emissions standards. In the A5 phase, The installation in the building is not consider in this EPD. However this stage will model the end-of-life of the packaging, which are assumed to be incinerated in municipal waste treatment plant.

Scenario Details	Description
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 liters per km
Capacity utilization (including empty drums)	50% as assumed in Ecoinvent
Bulk transportation	Mass of the transported product.

**Module C1 (Demolition):** In Module C1, The demolition of kerbstone and pavers involves the use of heavy machinery, such as excavators, to remove and break them down. This process contributes to environmental impacts, primarily through the consumption of fuel by machinery and the emissions generated during demolition activities. Additionally, waste handling and management are key considerations in this phase. While recycling is not considered in this module, the demolition process plays a significant role in the overall environmental impact.

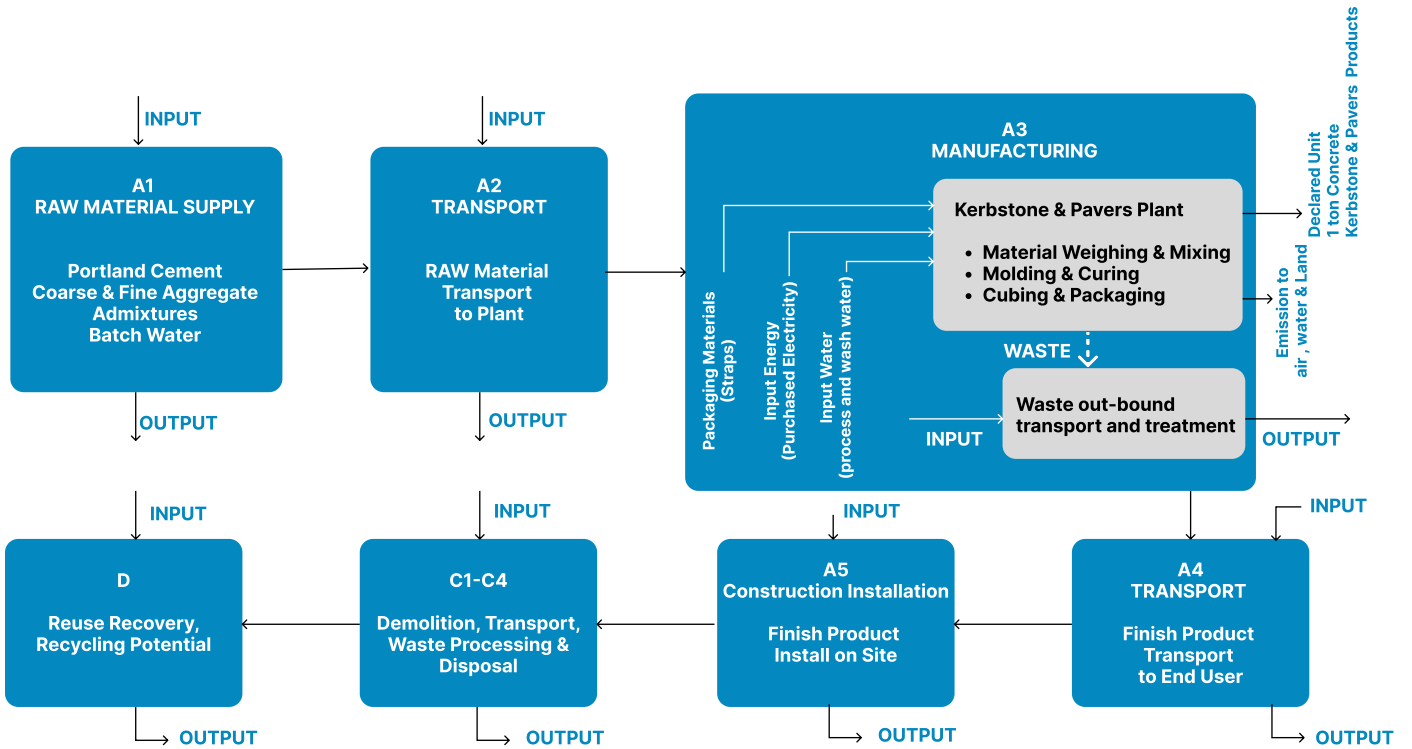
**Module C2 (Transport to Waste Treatment Facility):** In Module C2 assumes that the demolished Kerbstone & pavers are transported to a nearby waste treatment facility using a Euro 5 truck. The average distance to the facility is set at 5 kilometers.

**Module C3 (Waste Processing):** In Module C3, it is assumed that 100% of the demolished kerbstone and pavers are transported to a waste treatment plant in Abu Dhabi. Instead of being recycled, all materials are directed to a landfill. The kerbstone and pavers are crushed and separated, but no portion of the kerbstone or pavers is recovered for reuse or recycling. The process losses at the waste treatment plant are considered negligible. The environmental impact of this module includes the effects associated with landfill disposal and the associated emissions.

**Module C4 (Disposal):** In Module C4, the final disposal of the kerbstone and pavers is considered. Since 100% of the materials are directed to a landfill, this module accounts for the environmental impacts associated with landfill operations. These impacts include emissions from the decomposition of materials, leachate management, and the overall long-term environmental burden of landfilling.

**Module D (Reuse, Recycling & Recovery Potential)** - since 100% of the kerbstone and pavers are directed to landfill and no recycling or recovery is performed, there are no associated benefits or avoided burdens in this module. The absence of material recovery or reuse means that Module D does not contribute positively to offsetting environmental impacts in other systems, emphasizing the importance of exploring recycling or recovery options in future scenarios to improve the overall environmental performance.

**5.5 MANUFACTURING FLOW AND SYSTEM BOUNDARIES DIAGRAM**



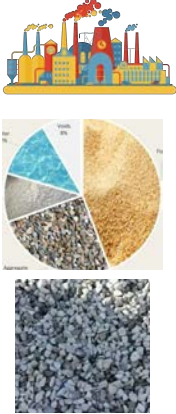





The scope of this EPD is "cradle to gate with options".

Possible scopes of the LCA defined in the European standard EN 15804:2012+A2:2019/AC:2021 are :

	Production Stage			Construction Stage	Use Stage								End of Life Stage				Resource Recovery Stage
	Raw Materials	Transport	Manufacturing	Transport	Construction Installation	Use Stage	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction & Demolition	Transport	Waste Processing	Disposal	Reuse Recovery Recycling Potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Module Declared	X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	UAE	UAE	UAE	UAE	UAE	-	-	-	-	-	-	-	UAE	UAE	UAE	UAE	UAE

X = Included, ND=Module not declared, NR= Module not relevant



Scope of this Life Cycle Assessment 'Cradle to Gate with Options'					
A1 Raw Materials Production	A2 Transport raw materials	A3 Manufacture	A4 Distribution	C1-C4 End of use Stage	D Recovering & Recycling
					
Raw Materials and Chemicals	Transport from supplier by land or sea	Manufacturing Phase	Transport to customers by trucks & Ships	Demolition, transport, disposal.	Reuse, recovery and recycling potential

### 5.6 Content Declaration

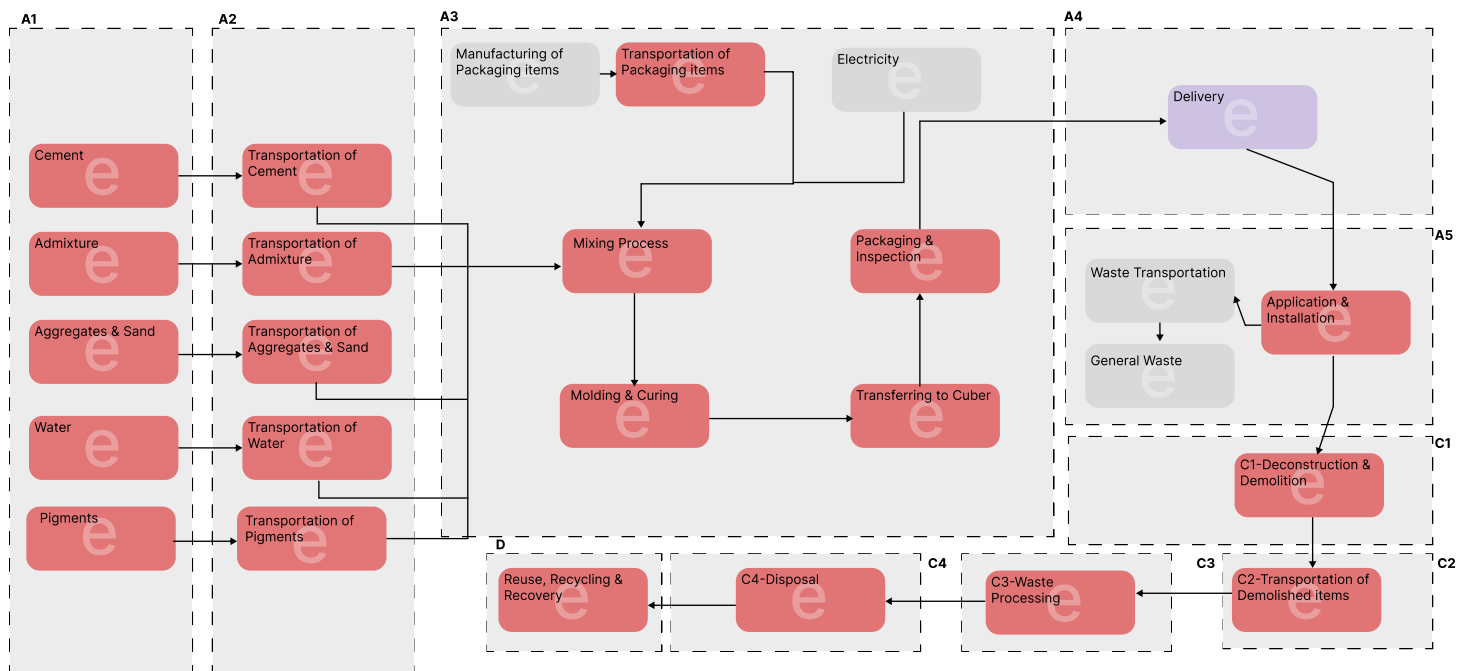
Product Components	Kerbstone Pavers (%)	Post-consumer material, weight-%	Biogenic material, weight-% and ton C/ton
Cement	10-15	0	0
Admixtures	0.05-0.1	0	0
Fine Aggregates	0-5	0	0
Course Aggregates	10-25	0	0
Water	5-15	0	0
Pigments	0.01-0.02	0	0
Aggregates Limestone	45-60	0	0
Dune Sand	0-15	0	0

Packaging Materials			
Packaging Materials	Weight(ton) per DU	Weight % (Versus the Product)	Weight biogenic carbon, ton C/ton
Nylon Straps	8.51E-02	8.51E+00	0

### 5.7 Substance listed in the "Candidate List of SVHC"

During the life cycle of the product no hazardous substance listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" has been used in a percentage higher than 0.1% of the weight of the product.

## 5.8 Life Cycle Assessment Modeling



## 5.9 More information

**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.

**Allocations:** The allocation of common inputs and outputs is based on the general allocation rule what represents the proportion of production of every specific product in overall production expressed in tons. Generic process data for production of input materials were used.

**Electricity:** A specific dataset with the Life Cycle Inventory (LCI) corresponding to the electricity mix in United Arab Emirates, has been used for this LCA.

- **Source** : 2020: IEA World Energy Statistics and Balances, United Arab Emirates, Total primary energy supply, 2020
- **Global warming potential (excluding biogenic Carbon)** : 0.6279 kg of CO<sub>2</sub> eq /kWh (based on Climate Change (fossil) indicator)

**Calculation Rules:** Datasets from Ecoinvent 3.10.0 with emission factors for raw materials and generic chemicals have been characterized to adjust them to the characteristics of manufacturing of suppliers or counties where suppliers are located. Specific datasets with the emissions factors corresponding to the fuel combustion of production plant and machinery have been developed for these LCAs. Indirect emissions due to diesel production and transportation are also included in the environmental impact. Minor components are not directly related to the product, with less than 1% impact, such as office supplies, has been excluded from the assessment.

All transports of components have been included in the LCA considering real distances travelled by materials used for production. It is estimated in a global scale according to Ecoinvent™ criteria. As exact port locations are not known in detail, transport distances have been calculated from a one of the ports in the country of origin to the factory. Operation in port has also been excluded. Road distances calculated using Google Maps. Maritime distances calculated using Marine Traffic Voyage Planner. By Products Assignment There are no By Products in this Environmental Product Declaration. Hence, no allocation had to be applied.

## 6.0 ENVIRONMENTAL PERFORMANCE

### 6.1 Potential Environmental Impacts

In the following tables, the environmental performance of the declared units “One-ton of Kerbstone and pavers ” is presented for the EMCON LLC product totalized and for every sub-phase of the life cycles. During the assessment it was not evident to distinguish the differences in the consumption of electricity, water, diesel, raw material and chemicals during the manufacturing process of the Kerbstone and Pavers. Hence, the calculation is based on total production vs total consumption against production of the product. The Life Cycle Assessment (LCA) and associated environmental impacts presented in this EPD are based on the total production of both kerbstone and pavers, reflecting the combined output of the two products.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding thresholds values, safety margins or risks.

EN 15804+ A2 disclaimers for Abiotic depletion and Water use indicators and all 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 experienced with the indicator.

### Core Environmental Impact Indicators

Impact Category	Unit	A1	A2	A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Climate change (GWP) –fossil	kg CO2e	1.30E+02	2.37E+01	2.21E+02	2.54E+01	1.60E+00	0.00E+00	3.61E+00	9.58E+00	4.38E+00	6.25E+00	4.25E+02	0.00E+00
Climate change (GWP) –biogenic	kg CO2e	9.82E-02	3.63E-03	2.04E-01	3.89E-03	1.35E+01	0.00E+00	2.87E-04	1.50E-03	3.48E-04	2.46E-03	1.38E+01	0.00E+00
Climate change (GWP) –LULUC	kg CO2e	2.87E-02	9.42E-03	8.14E-03	1.01E-02	6.73E-04	0.00E+00	3.13E-04	3.90E-03	3.81E-04	2.09E-03	6.37E-02	0.00E+00
Climate change (GWP) – total	kg CO2e	1.30E+02	2.37E+01	2.21E+02	2.54E+01	1.51E+01	0.00E+00	3.61E+00	9.59E+00	4.38E+00	6.26E+00	4.39E+02	0.00E+00
Ozone depletion	kg CFC-11e	5.40E-07	3.31E-07	4.91E-07	3.55E-07	1.28E-08	0.00E+00	5.52E-08	1.42E-07	6.70E-08	1.81E-07	2.18E-06	0.00E+00
Acidification	mol H+e	4.19E-01	7.91E-02	9.14E-01	8.48E-02	5.16E-03	0.00E+00	3.25E-02	2.20E-02	3.95E-02	4.43E-02	1.64E+00	0.00E+00
Eutrophication, aquatic freshwater	kg Pe	1.31E-02	1.86E-03	1.12E-02	1.99E-03	4.09E-04	0.00E+00	1.05E-04	7.57E-04	1.28E-04	5.15E-04	3.01E-02	0.00E+00
Eutrophication, aquatic marine	kg Ne	1.22E-01	2.58E-02	3.47E-01	2.76E-02	4.42E-02	0.00E+00	1.51E-02	5.17E-03	1.84E-02	1.69E-02	6.22E-01	0.00E+00
Eutrophication, terrestrial	mol Ne	1.40E+00	2.79E-01	1.77E+00	2.99E-01	1.52E-02	0.00E+00	1.65E-01	5.50E-02	2.01E-01	1.84E-01	4.36E+00	0.00E+00
Photochemical ozone formation	kg NMVOCe	3.84E-01	1.10E-01	5.67E-01	1.18E-01	1.03E-02	0.00E+00	4.93E-02	3.07E-02	5.98E-02	6.60E-02	1.40E+00	0.00E+00
Abiotic depletion, minerals & metals	kg Sbe	3.67E-04	7.59E-05	2.05E-04	8.14E-05	2.41E-06	0.00E+00	1.26E-06	3.12E-05	1.52E-06	9.58E-06	7.75E-04	0.00E+00
Abiotic depletion of fossil resources	MJ	7.12E+02	3.51E+02	3.64E+03	3.76E+02	1.30E+01	0.00E+00	4.98E+01	1.42E+02	6.04E+01	1.61E+02	5.51E+03	0.00E+00
Water use	m³ W.ed	1.75E+01	1.81E+00	2.37E+02	1.95E+00	3.37E-01	0.00E+00	1.38E-01	7.59E-01	1.68E-01	6.84E+00	2.67E+02	0.00E+00

### Additional Environmental Impact Indicators

Impact Category	UNIT	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Particulate matter	Incidence	1.31E-05	1.64E-06	7.04E-08	0.00E+00	9.14E-07	5.70E-07	5.07E-06	9.78E-07	2.24E-05	0.00E+00
ionizing radiation, human	kBq U234e	1.77E+00	2.93E-01	1.03E-02	0.00E+00	2.11E-02	1.12E-01	2.56E-02	9.82E-02	2.33E+00	0.00E+00
Eco-toxicity (freshwater)	CTUe	5.92E+02	9.39E+01	6.34E+01	0.00E+00	6.61E+00	3.57E+01	8.03E+00	1.83E+01	8.18E+02	0.00E+00
Human toxicity, cancer effects	CTUe	3.41E-07	1.32E-07	9.09E-10	0.00E+00	1.41E-08	5.04E-08	1.71E-08	2.63E-08	5.82E-07	0.00E+00
Human toxicity, non-cancer	CTUe	1.26E-06	2.23E-07	3.85E-08	0.00E+00	5.84E-09	8.48E-08	7.09E-09	2.62E-08	1.65E-06	0.00E+00
Land use related impacts/soil	Dimensionless	4.73E+02	2.13E+02	1.68E+01	0.00E+00	3.30E+00	8.15E+01	4.01E+00	3.02E+02	1.09E+03	0.00E+00

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.

### Environmental Impact -GWP-GHG

Impact Category	UNIT	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
GEP-GHG	kg CO2e	3.77E+02	2.57E+01	1.59E+01	0.00E+00	3.66E+00	9.66E+00	4.45E+00	6.40E+00	4.43E+02	0.00E+00

This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

### Use of Natural Resources

Impact Category	UNIT	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Renewable PE used as energy	MJ	8.02E+01	4.68E+00	-1.72E+02	0.00E+00	2.89E-01	1.79E+00	3.50E-01	0.00E+00	-8.43E+01	0.00E+00
Renewable PE used as materials	MJ	0.00E+00	0.00E+00	1.72E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.72E+02	0.00E+00
Total use of renewable PE	MJ	8.02E+01	4.68E+00	4.42E-01	0.00E+00	2.89E-01	1.79E+00	3.50E-01	0.00E+00	8.77E+01	0.00E+00
Non-renew. PE used as energy	MJ	3.70E+03	3.57E+02	-1.00E+02	0.00E+00	4.72E+01	1.35E+02	5.73E+01	0.00E+00	4.20E+03	0.00E+00
Non-renew. PE used as materials	MJ	7.62E+02	0.00E+00	1.13E+02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.75E+02	0.00E+00
Total use of non-renewable PE	MJ	4.47E+03	3.57E+02	1.24E+01	0.00E+00	4.72E+01	1.35E+02	5.73E+01	0.00E+00	5.07E+03	0.00E+00
Use of secondary materials	Kg	4.02E-01	1.60E-01	5.17E-03	0.00E+00	1.96E-02	6.12E-02	2.38E-02	0.00E+00	6.72E-01	0.00E+00
Use of renewable secondary fuels	MJ	2.22E-01	2.04E-03	1.10E-04	0.00E+00	5.12E-05	7.82E-04	6.22E-05	0.00E+00	2.25E-01	0.00E+00
Use of non-renew. Secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m3	6.00E+00	4.76E-02	8.08E-03	0.00E+00	3.37E-03	1.85E-02	4.09E-03	1.60E-01	6.24E+00	0.00E+00

### End of Life - waste

Impact Category	UNIT	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Hazardous waste	Kg	6.01E+00	6.25E-01	1.77E-02	0.00E+00	5.27E-02	2.38E-01	6.40E-02	1.54E-01	7.16E+00	0.00E+00
Non-hazardous waste	Kg	8.90E+01	1.17E+01	6.26E-01	0.00E+00	7.20E-01	4.46E+00	8.74E-01	1.63E+00	1.09E+02	0.00E+00
Radioactive waste	Kg	4.35E-04	7.18E-05	8.29E-06	0.00E+00	5.18E-06	2.74E-05	6.29E-06	0.00E+00	5.54E-04	0.00E+00

Note: No radioactive waste is produced during EMCON LLC operation.

### End of Life - Outflows

Impact Category	UNIT	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	Total	D
Components for reuse	Kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	Kg	2.76E-02	2.63E-03	2.30E-04	0.00E+00	1.27E-04	1.00E-03	1.55E-04	0.00E+00	3.17E-02	0.00E+00
Materials for energy recovery	Kg	1.25E-04	2.30E-05	8.42E-07	0.00E+00	6.46E-07	8.82E-06	7.85E-07	1.62E-03	1.78E-03	0.00E+00
Exported energy - electricity	MJ	1.48E-01	2.59E-02	2.95E-03	0.00E+00	2.14E-03	9.92E-03	2.59E-03	0.00E+00	1.92E-01	0.00E+00
Exported energy - thermal	MJ	1.43E-01	5.24E-02	1.39E-03	0.00E+00	1.12E-03	2.01E-02	1.36E-03	0.00E+00	2.19E-01	0.00E+00

### Biogenic Carbon Content

Details	Unit	A1-A3
Biogenic carbon content in product	Kg C	0
Biogenic carbon content in accompanying packaging	Kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>. "Reading example: 1.57E-03 = 1.57\*10<sup>-3</sup> = 0.00157"

*Disclaimer: "According to the EN 15804:2012+A2:2019 standard, the LCIA results are relative expressions translating impacts into environmental themes such as climate change, ozone depletion, etc. (midpoint impact categories). Thus, the LCIA results do not predict impacts on category endpoints such as impact on the extinction of species or human health. In addition, the results do not provide information about the exceeding of thresholds, safety margins or risks".*

## 6.2 Interpretation of LCA Study Results

In general terms, as it is shown in the table of core environmental impact indicators, A1-A3 modules represents more than 80% of most of the core impact indicators. A4 module has a less impact. C2 and C4 module has little impact too, representing at most 5% and 5% respectively of the whole impact. Finally, Module D represents savings between 10% of the total impact.

## 7.0 Mandatory Statements

Explanatory material can be obtained from EPD owner and/or LCA author. Contact information can be found below. The verifier and The Program Operator do not make any claim or present any responsibility about the legality of the product.

The EPD owner has the sole ownership, liability, and responsibility for the EPD. The LCA Author shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

EPDs within the same product category but registered in different EPD programmes 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.

## 8.0 VERIFICATION

Diffusion Institution	The Environmental Footprint Institute Calle CIRCE 49A Madrid 28022 Spain www.environmentalfootprintinstitute.org
EPD Registration Number	250103EPD CR:P-3100
Published	25-01-2025
Valid until	24-01-2030
Product Category Rules	PCR P-3100: Construction products in general (EN15804)
Product Group Classification	UN CPC 3754
Reference year for Data	January 2024 - December 2024
Geographical Scope	United Arab Emirates

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.

Independent verification of the declaration and data, according to ISO 14025:2006 and ISO 14040:


EPD Process Certification (internal)

EPD Verification (external)

Third party verifier: **Mr. Iván Jiménez**

Accredited by: The Environmental Footprint Institute.

## 9.0 CONTACT INFORMATION

<p><b>EPD Owner</b></p>	<p><b>EMCON LLC</b>                  23rd St - Al Quoz Industrial Area 3                  Dubai, UAE                  Tel : +971 4 347 3400  <a href="http://www.emcongcc.com">www.emcongcc.com</a></p> 
<p><b>LCA Author</b></p>	<p><b>Name : Mehmood Khan</b>  <b>CQES International LLC</b>                  Shams Business Center                  Tel : +971 5 85879085  <a href="mailto:sales@cquesint.com">sales@cquesint.com</a>  <a href="http://www.cquesint.com">www.cquesint.com</a></p> 
<p><b>Programme Operator</b></p>	<p><b>THE ENVIRONMENTAL FOOTPRINT INSTITUTE</b>                  Calle Circe 49A Madrid, Spain  <a href="http://www.environmentalfootprintinstitute.com">www.environmentalfootprintinstitute.com</a>  <a href="mailto:info@environmentalfootprintinstitute.com">info@environmentalfootprintinstitute.com</a></p>  <p>ENVIRONMENTAL FOOTPRINT INSTITUTE</p>

## 10.0 ADDITIONAL INFORMATION

### 10.1 Action against Erosion, Environmental Restoration, and Landscaping of the work.

Application of measures to prevent erosion, restore the environment, and landscape the job includes restoring all elements immediately connected to it. The restoration of other related items indirectly is also suggested, including work roads, auxiliary facilities, and loan and landfill lands.

In the areas of air protection, EMCON LLC makes an effort to stop pollution and lessen its damaging effects on the environment management of both waste and water. The foundation of quality and environmental policy is a long-term growth plan built on recognized and global trends that have been expertly evaluated in relation to the development of potential clients' needs.

Instruction for proper use of the product, e.g. To minimize the energy or water consumption or to improve the durability of the product;- Increasing product quality and value without raising production's energy intensity or environmental burdens through ongoing technical advancements and equipment replacement.

### 10.2 Information on Recycling

All the regulations related to the disposal are followed. Circular Economy Strategy is deployed to ensure the open and close loop recycling is done

### 10.3 Information related to Sector EPD

This is not a sector EPD.

### 10.4 Differences versus previous versions

This is the first version of the EPD.

## 11.0 References

LCA Report: Life Cycle Inventory of KERBSTONE & PAVERS by EMCON LLC.

Software: Air.e LCA Version 3.17.4.0 [www.solidforest.com](http://www.solidforest.com)

Main database: Ecoinvent 3.10.+0 [www.ecoinvent.org](http://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.

General Programme Instructions of the Environmental Footprint Institute  
Product Category Rules: P-3100: Construction products in general (EN-15804)



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