

Environmental Product Declaration

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

E-Foam Extruded Polystyrene Sheet (XPS) - Thermal Insulation

From

Emirates Extruded Polystyrene L.L.C



Programme :

Programme Operator :

EPD Registration No :

Issue Date :

Valid Until :

Geographical Scope :

The EFI Program

The Environment Footprint Institute

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United Arab Emirates



ENVIRONMENTAL FOOTPRINT INSTITUTE





الإمارات أكستروديد بوليستيرين ذ.م.م.
EMIRATES EXTRUDED POLYSTYRENE L.L.C.
E-FOAM INSULATION SYSTEM



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 Emirates Extruded polystyrene L.L.C

General Information

Programme :	The EFI Programme
Address :	The Environment Footprint Institute Calle Circe 49A Madrid, Spain
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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)	
PCR review was conducted by: Environmental Footprint Institute	
Life Cycle Assessment (LCA)	
LCA accountability: CQES International LLC	
<input type="checkbox"/> Internal Verification	<input checked="" type="checkbox"/> Third Party Verification
Accredited by: THE ENVIRONMENTAL FOOTPRINT INSTITUTE	
Third party verifier: Manuel Rama Calle Circe 49A Madrid, Spain www.environmentalfootprintinstitute.com info@environmentalfootprintinstitute.com	
 ENVIRONMENTAL FOOTPRINT INSTITUTE	
Procedure for follow-up of data during EPD validity involves Internal verifier: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 :

Emirates Extruded Polystyrene L.L.C

Contact : Srijith P. Nair

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Description of the organization :

Emirates Extruded Polystyrene L.L.C. (EEP) is a subsidiary of Dubai Investments Industries and operates as a joint venture with Farha Group. The company's manufacturing facility is located in Dubai Investment Park, United Arab Emirates.

EEP specializes in the production of rigid extruded polystyrene (XPS) insulation boards marketed under the brand name E-Foam Insulation. The product range includes application-oriented solutions such as E-Foam Roof Fix, E-Foam Floor Fix, and E-Foam Wall Fix, designed for use in building envelopes and construction applications requiring high thermal insulation performance.

The manufacturing facility is equipped with advanced production technology, representing one of the latest XPS plants in the Middle East. The production processes are designed to ensure consistent product quality while optimizing resource efficiency.

EEP's insulation products contribute to improved energy performance of buildings by reducing heat transfer, thereby supporting energy efficiency and conservation objectives in accordance with regional sustainability initiatives. The products are widely used across the United Arab Emirates and other Gulf Cooperation Council (GCC) countries within the construction sector.

The company operates in alignment with applicable regulatory requirements and industry standards, supporting sustainable construction practices through the provision of high-performance thermal insulation materials.

Product-related or management system-related certifications :

Emirates Extruded Polystyrene L.L.C. (EEP) operates a quality management system certified in accordance with ISO 9001, ensuring consistent product quality and continuous improvement across its manufacturing processes.

In addition, EEP's products comply with the requirements of the Al Sa'fat Dubai Green Building System (Dubai Central Laboratory – DCL), demonstrating conformity with local green building regulations and supporting sustainable construction practices within the Emirate of Dubai.

Sustainable development :

Emirates Extruded Polystyrene L.L.C. (EEP) supports sustainable development by manufacturing high-performance XPS insulation boards that improve building energy efficiency and reduce overall energy consumption. The production process incorporates internal recycling of regrinded foam to minimize waste and optimize resource use.

Product Information

Product Name: **E-Foam Extruded Polystyrene Sheet (XPS) -Thermal Insulation**

Product identification: Prefabricated insulation boards designed for use in building insulation applications, including roofs, walls, and floors.

Intended use: Building envelope solutions for roof and wall cladding, sheds, garages, industrial buildings, poultry farms, warehouses, and commercial buildings. Roof Fix is used in inverted and conventional roofing systems to protect waterproofing membranes and reduce thermal stress; Wall Fix is suitable for interior, cavity, and exterior wall insulation systems; and Floor Fix comprises high-density boards designed for floor slabs, cold storage, and load-bearing applications.

UN CPC Code: UN CPC 369 – Other plastic products (commonly used classification for plastic-based insulation materials such as extruded polystyrene boards).

Product description: E-Foam is an extruded polystyrene (XPS) rigid foam insulation board manufactured by Emirates Extruded polystyrene L.L.C Dubai. It is available in three product variants:

Product Picture:



Standard Board Dimensions:

- Length: 1250 mm
- Width: 600 mm
- Thickness: 25 mm to 100 mm

Properties of E-FOAM Insulation System:

Properties (Average)	Test Standard	Units	Type VI		Type VII			Type V	
Density	ASTM D-1622 DIN 53420	kg/m ³ lbs/ft ³	30-32 1.9-2.0	32-35 2.0-2.3	35-40 2.3-2.6	40-45 2.6-2.9	45-48 2.9-3.0	48 3.0	
Thermal Conductivity max @ 35° C & 60 % of RH	ASTM C 158-2010 DIN 2612/52616	W/m.K Btu.in/ft ² .hr.°F	0.0303 0.2101	0.0303 0.2101	0.0303 0.2101	0.0303 0.2101	0.0303 0.2101	0.0303 0.2101	
Thermal Resistance of 25.4 mm Thickness @ mean temp of 24±1 °C min	ASTM C 158-2010 DIN 2612/52616	(m ² .k)/W	0.84	0.84	0.84	0.84	0.84	0.84	
Compressive Strength @ Yield or 10% Deformation, min kPa	ASTM D 1621:00 DIN 53421	kPa psi	276 40	300 44	414 60	414 60	414 60	690 100	
Flexural Strength min kPa	ASTM C 203-05a	kPa psi	414 60	414 60	517 75	517 75	517 75	690 100	
Water Vapor Permeance of 25.4 mm Thick max	ASTM E 96:00	perm/in	1.1	1.1	1.1	1.1	1.1	1.1	
Water Absorption by total immersion, max	ASTM C 272:2001 DIN 53428	% by Vol	0.3	0.3	0.3	0.3	0.3	0.3	
Dimensional Stability change in dimension , max %	ASTM D 2126:09	% change	2	2	2	2	2	2	
Oxygen Index min volume %	ASTM C 2863:09	%	24	24	24	24	24	24	
Capillarity		None	None	None	None	None	None	None	
Fire Classifications	DIN 4102:1	Building Material Class	B1 & B2						
			Difficult to Ignite						

LCA Information

Declared Unit :

The declared unit of the Life Cycle Assessment is 1 ton of E-Foam Extruded Polystyrene (XPS) – Thermal Insulation. Environmental impacts and resource use are reported per ton of finished product, independent of board dimensions and thickness. The results are therefore directly applicable to all product variants, including Roof, Wall, and Floor boards, with densities ranging from 30 to 50 kg/m³. This mass-based approach ensures consistency with the underlying production data and avoids the need for additional conversions related to board thickness or surface area. It also provides a transparent and practical basis for evaluating environmental impacts across different applications of E-Foam insulation products 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. LCA™ software (version 3.21.0.5) 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 :

Energy inputs include electricity (Electricity requirements are met by the UAE national grid, which consists of approximately 80% fossil sources and 20% renewable sources) for production and packaging (dataset: market for electricity, low voltage | EN15804, AE with GWP-GHG 0.5856 kg CO₂-eq/kWh).

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.

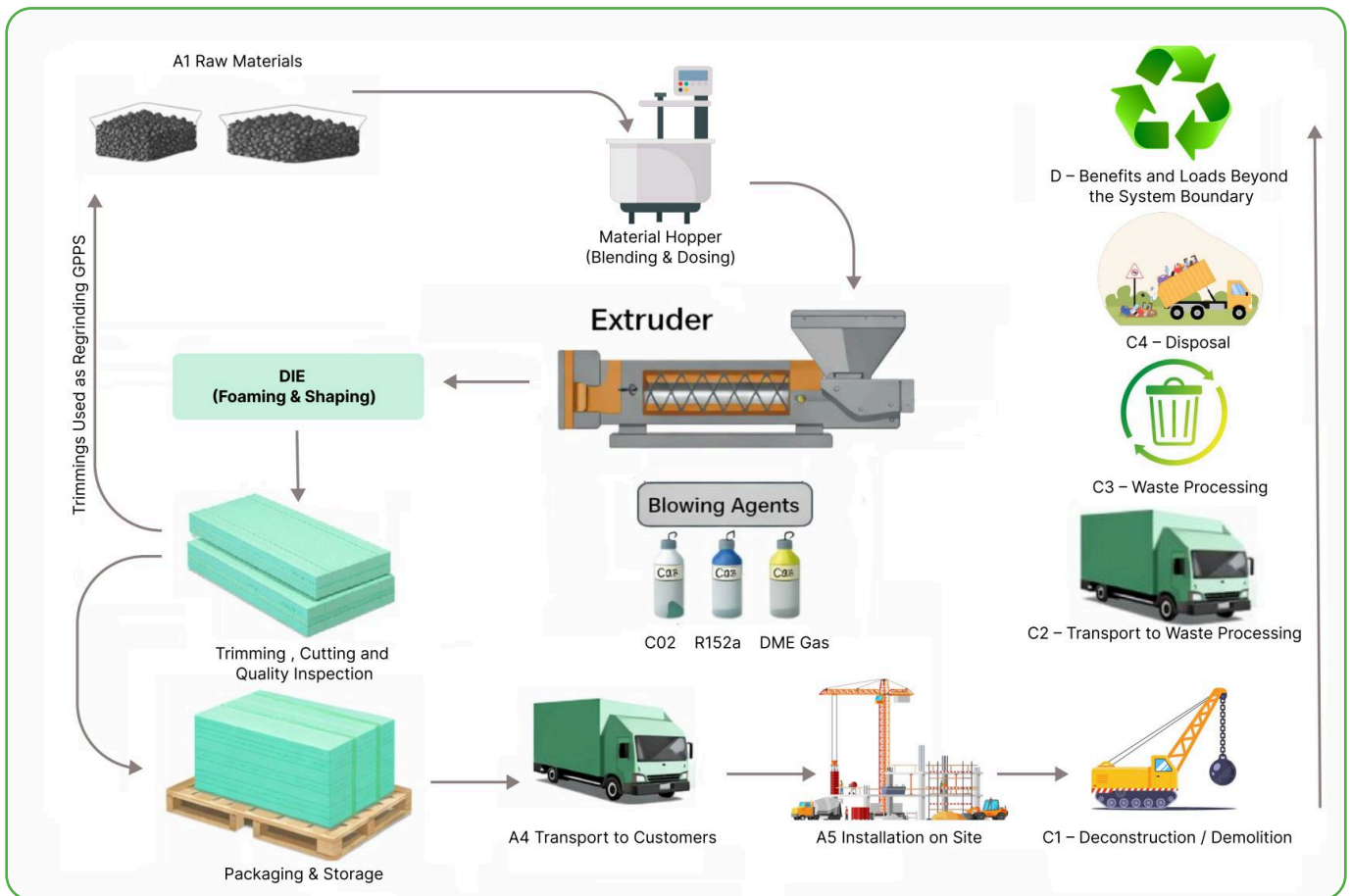
Allocation method:

No allocation was required, as the production of E-Foam Extruded Polystyrene sheet boards 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 E-Foam Extruded Polystyrene sheet.

Use-stage Modules B1–B7 are excluded, as E-Foam Extruded Polystyrene sheet insulation boards are construction products whose environmental performance during the use phase depends on building-specific design, installation, and operating conditions, which are outside the declared scope of this EPD.



A1-Raw Material Supply: Module A1 includes the extraction, processing, and supply of raw materials used in the production of E-Foam Extruded Polystyrene sheet. This covers the production of virgin GPPS (General Purpose Polystyrene), regrind GPPS (recycled in-house scrap), GPPS-B (specialty grade polystyrene), masterbatch (additives including colorants, flame retardants, and stabilizers), and blowing agents (CO₂ gas, R152a gas, and DME gas). Upstream energy use and emissions associated with raw material production are included.

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 board production, including regrinding of in-house scrap for reuse.

A2-Transport: Module A2 includes the transportation of all raw materials and ancillary materials from suppliers to the manufacturing site. Transport impacts are modeled based on average transport distances, transport modes, and load factors representative of the supply chain.. Transport of raw materials to production site is taken as the weight average values for transport from supplier for the year of 2025.

- 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 L/km
- Bulk transportation - Mass of the transported product.

A3-Manufacturing: Module A3 includes the manufacturing process of E-Foam extruded polystyrene (XPS) insulation boards at the production facility. The process begins with the feeding of virgin GPPS, regrind GPPS, GPPS-B, and masterbatch into the extruder, where the polymers are melted under controlled temperature conditions. Blowing agents (CO₂, R152a, and DME) are injected into the polymer melt under high pressure to create a foamable mixture.

The mixture is then forced through a die, where expansion occurs, forming a rigid foam board. Boards are trimmed to final dimensions (1250 mm × 600 mm × thickness), and off-cuts are reground and reintroduced as regrind GPPS, achieving zero production waste. Finished boards are stacked and packed on wooden pallets for storage and transport.

This module includes energy consumption (electricity and fuel) for extrusion, foaming, cutting, and packaging operations, as well as direct emissions from the manufacturing process. Water consumption, waste treatment, and on-site material handling are also accounted for. All manufacturing activities take place at the production facility.

A4-Transportation of Goods:

Stage A4 represents the transport of finished Boards from the manufacturing facility to customers or points of sale. This includes fuel combustion emissions from road transport, considering distances, vehicle types, and modes.

- 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
- Bulk transportation - Mass of the transported product.

A5-Construction Installation Process:

Module A5 covers the installation of E-Foam Extruded Polystyrene sheet, including on-site activities and packaging waste treatment. Installation energy consumption is assumed to be zero based on minimum impact from manual handling and low-energy mechanical fixing. All packaging materials stretch film generated during installation are allocated 100% to this module and are modelled according to local waste treatment practices. Module A5 impacts are therefore driven solely by the disposal of packaging waste.

End-of-Life Modules (C1-C4)

C1 – Deconstruction / Demolition :

For Module C1 (Deconstruction/Demolition), the energy required to dismantle E-Foam boards is estimated at 0.89 MJ per m² (0.247 kWh/m²) of board, based on published EPD industry models for similar products. This energy reflects the electricity consumption of dismantling activities and is included in the life cycle inventory modelling in accordance with EN 15804 requirements.

C2-Transport :

Module C2 accounts for the transportation of demolished boards disposal sites. For E-Foam Boards, the assumed transport distance to disposal or recycling facilities is 50 km by road. the dataset used in transport C2, as described in modules A2 and A4

C3-Waste Processing

Module C3 includes the processing of E-Foam insulation boards after deconstruction and collection for waste treatment. In the UAE context, while the government has established ambitious circular economy targets under the UAE Circular Economy Policy 2021–2031 and the National Plastic Waste Management Strategy, dedicated recycling infrastructure for XPS foam insulation is not yet widely available .

Therefore, this EPD assumes no recycling takes place. Module C3 includes only the collection, sorting, and handling activities required to prepare the waste for final disposal.

C4-Disposal :

Module C4 includes the final disposal of E-Foam insulation boards in a landfill facility. It is assumed that 100% of the material is sent to landfill, with no incineration or recycling.

Module D—Benefits and Loads Beyond the System Boundary :

Module D accounts for potential benefits and loads beyond the system boundary. In this scenario, no recycling or energy recovery occurs; therefore, no net benefits are claimed from end-of-life treatment.

More Information

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

Module	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
	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	>90%			--	--	--	--	--	--	--	--

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

LCA Assumptions :

This Environmental Product Declaration (EPD) is based on primary data for the 2025 production period at Emirates Extruded Polystyrene L.L.C., located in Dubai. The declared unit is 1 ton of E-Foam extruded polystyrene (XPS) board with a reference thickness of 50 mm. Environmental impacts for other thicknesses (25–100 mm) are linearly scaled based on thickness.

Production waste, estimated at approximately 5% of input mass, is fully reprocessed through regrinding and reused as secondary raw material (regrind GPPS), resulting in zero waste to landfill. Associated impacts are included in Module A3.

Blowing agents (CO₂, R152a, and DME) are used during production, with a total consumption of 261 kg for 3,740,000 kg of XPS (~0.007% by mass). A conservative approach is applied whereby 100% of the blowing agents are assumed to be emitted to air during the manufacturing stage (Module A3).

At end-of-life (Modules C1–C4), 100% of the XPS foam is assumed to be disposed of in landfill due to limited recycling infrastructure in the United Arab Emirates. No recycling or energy recovery is considered.

Content Information

Product Content:

Product Components	Weight (kg)	Post-Consumer material weight -%	Biogenic material, kg C/kg
General Purpose Polystyrene (GPPS)	150	-	-
Regrind GPPS	300	-	-
GPPS-B (Specialty GPPS)	548	-	-
Master Batch	2	-	-
Total	1000	-	-

Packaging Material Content:

Packaging Material	Weight (kg)/DU	Weight % (Versus the Product)	Weight biogenic carbon, kg C/kg
Shrink wrap	3.58E-02	3.58E+00	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 E-Foam Extruded Polystyrene sheet begins with the feeding of virgin GPPS, regrind GPPS (recycled in-house scrap), GPPS-B (specialty grade polystyrene), and masterbatch additives into an extruder, where the polymers are melted under controlled temperature conditions. Blowing agents comprising CO₂ gas, R152a gas, and DME gas are injected into the polymer melt under high pressure to create a foamable mixture. This mixture is then forced through a die, where the sudden pressure drop causes the blowing agents to expand, forming a rigid closed-cell foam board. The continuous foam board is then cooled, trimmed to final dimensions (standard 1250 mm length × 600 mm width × varying thicknesses from 25 mm to 100 mm), and stacked for packaging. All off-cuts and trimmings from the trimming process are collected, reground, and reintroduced as regrind GPPS into the extrusion feed, achieving zero production waste. Finished boards are packed on wooden pallets for storage and transport to construction sites.

Technical information:

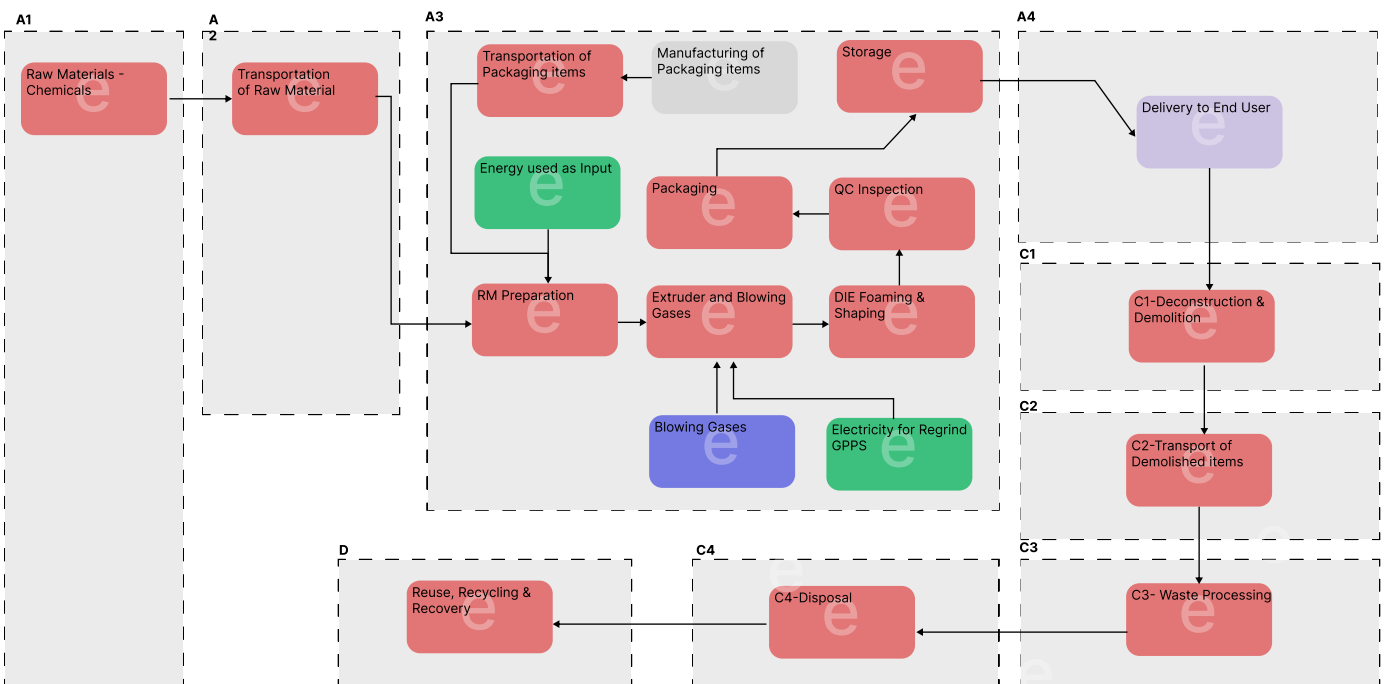
For more technical information about the E-Foam Extruded Polystyrene sheet, please refer to the product TDS

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 2015:03 v2.0 for construction products (UN CPC 369). Primary, site-specific data for the 2025 reference period were collected for raw material supply, transport, and manufacturing (Modules A1-A3) at the EEP facility. Background system data were sourced from the Ecoinvent 3.11.0 database.

The LCA was modelled using Air.e LCA software v3.21.0.5, 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 1 m² of E-Foam Extruded Polystyrene sheet at reference thickness 50 mm. Due to the integrated nature of the production process, it was not feasible to isolate the consumption of electricity, auxiliary materials, and other inputs specifically for individual board variants. Consequently, the Life Cycle Inventory (LCI) was calculated by allocating the plant's total annual consumption of materials, electricity, and other inputs based on the mass share of E-Foam boards within the total production output. Environmental impacts for other board thicknesses (25 mm to 100 mm) can be calculated proportionally using the linear thickness-scaling approach.

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.

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.	4.28E+03	1.68E+01	9.85E+00	ND	ND	ND	ND	ND	ND	ND	4.48E+01	9.90E+00	4.95E+01	6.26E+00	0.00E+00
GWP-fossil	kg CO ₂ eq.	4.26E+03	1.68E+01	9.96E-01	ND	ND	ND	ND	ND	ND	ND	4.47E+01	9.89E+00	2.01E+01	6.26E+00	0.00E+00
GWP-biogenic	kg CO ₂ eq.	2.20E+01	3.77E-03	8.85E+00	ND	ND	ND	ND	ND	ND	ND	4.46E-03	2.27E-03	2.94E+01	1.94E-03	0.00E+00
GWP-luluc	kg CO ₂ eq.	1.25E-01	7.53E-03	2.77E-04	ND	ND	ND	ND	ND	ND	ND	4.58E-03	4.54E-03	2.38E-02	3.58E-03	0.00E+00
ODP	kg CFC 11 eq.	1.41E-05	2.13E-07	7.37E-09	ND	ND	ND	ND	ND	ND	ND	6.64E-07	1.34E-07	1.15E-07	1.74E-07	0.00E+00
AP	mol H ⁺ eq.	1.65E+01	5.73E-02	3.04E-03	ND	ND	ND	ND	ND	ND	ND	4.00E-01	2.37E-02	1.31E-01	4.38E-02	0.00E+00
EP-freshwater	kg P eq.	8.13E-02	1.84E-03	1.31E-03	ND	ND	ND	ND	ND	ND	ND	1.44E-03	1.08E-03	9.40E-03	5.48E-04	0.00E+00
EP-marine	kg N eq.	2.79E+00	1.83E-02	3.20E-02	ND	ND	ND	ND	ND	ND	ND	1.86E-01	5.52E-03	6.29E-02	1.69E-02	0.00E+00
EP-terrestrial	mol N eq.	3.01E+01	1.97E-01	9.38E-03	ND	ND	ND	ND	ND	ND	ND	2.04E+00	5.88E-02	3.86E-01	1.84E-01	0.00E+00
POCP	kg NMVOC eq.	1.25E+01	7.76E-02	6.53E-03	ND	ND	ND	ND	ND	ND	ND	6.10E-01	3.21E-02	1.27E-01	6.63E-02	0.00E+00
ADP-minerals & metals*	kg Sb eq.	4.35E-03	5.49E-05	1.03E-06	ND	ND	ND	ND	ND	ND	ND	1.56E-05	3.30E-05	3.92E-04	9.11E-06	0.00E+00
ADP-fossil*	MJ	5.34E+04	2.12E+02	6.55E+00	ND	ND	ND	ND	ND	ND	ND	5.37E+02	1.25E+02	1.32E+02	1.40E+02	0.00E+00
WDP*	m ³	2.31E+03	1.31E+00	-2.88E+00	ND	ND	ND	ND	ND	ND	ND	1.69E+00	7.99E-01	3.36E+00	6.80E+00	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															

Note on Declared Modules:

*CO₂ 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	6.08E+02	3.22E+00	-1.64E+02	ND	ND	ND	ND	ND	ND	ND	3.66E+00	1.93E+00	2.40E+01	1.43E+00	0.00E+00
PERM	MJ	0.00E+00	0.00E+00	1.64E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	6.08E+02	3.22E+00	1.39E-01	ND	ND	ND	ND	ND	ND	ND	3.66E+00	1.93E+00	2.40E+01	1.43E+00	0.00E+00
PENRE	MJ	5.35E+04	2.32E+02	-1.00E+02	ND	ND	ND	ND	ND	ND	ND	5.83E+02	1.37E+02	1.69E+02	1.53E+02	0.00E+00
PENRM	MJ	3.94E+04	0.00E+00	1.08E+02	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	9.29E+04	2.32E+02	7.38E+00	ND	ND	ND	ND	ND	ND	ND	5.83E+02	1.37E+02	1.69E+02	1.53E+02	0.00E+00
SM	kg	2.02E+01	1.02E-01	2.72E-03	ND	ND	ND	ND	ND	ND	ND	2.41E-01	6.12E-02	3.05E-01	3.81E-02	0.00E+00
RSF	MJ	1.36E-02	1.32E-03	4.54E-05	ND	ND	ND	ND	ND	ND	ND	6.32E-04	7.94E-04	2.42E-02	7.96E-04	0.00E+00
NRSF	MJ	3.00E+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
FW	m ³	9.55E+02	3.21E-02	-6.70E-02	ND	ND	ND	ND	ND	ND	ND	4.11E-02	1.95E-02	8.68E-02	1.59E-01	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 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.	4.33E+03	1.69E+01	1.04E+01	ND	ND	ND	ND	ND	ND	ND	4.54E+01	9.97E+00	5.21E+01	6.41E+00	0.00E+00

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	1.49E+00	2.62E-03	1.28E-04	ND	ND	ND	ND	ND	ND	ND	2.59E-03	1.57E-03	9.60E+02	1.66E-03	0.00E+00
Materials for energy recovery	kg	2.19E-04	1.55E-05	5.16E-07	ND	ND	ND	ND	ND	ND	ND	8.28E-06	9.30E-06	3.75E-05	2.95E-06	0.00E+00
Exported energy, electricity	MJ	3.50E-01	1.94E-02	8.64E-04	ND	ND	ND	ND	ND	ND	ND	2.76E-02	1.16E-02	8.21E-02	9.95E-03	0.00E+00
Exported energy, thermal	MJ	4.36E-01	3.45E-02	8.07E-04	ND	ND	ND	ND	ND	ND	ND	1.29E-02	2.07E-02	2.32E-02	5.28E-03	0.00E+00

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	4.73E+01	5.31E-01	1.65E-02	ND	ND	ND	ND	ND	ND	ND	6.53E-01	3.13E-01	1.78E+00	1.74E-01	0.00E+00
Non-hazardous waste disposed	kg	3.61E+02	1.02E+01	4.85E+01	ND	ND	ND	ND	ND	ND	ND	9.52E+00	6.03E+00	7.16E+01	4.03E+00	0.00E+00
Radioactive waste disposed	kg	1.10E-02	4.58E-05	2.14E-06	ND	ND	ND	ND	ND	ND	ND	6.09E-05	2.73E-05	2.17E-04	2.24E-05	0.00E+00

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 Emirates Extruded polystyrene L.L.C, Dubai (UAE).*
- *Software: Air.e LCA Version 3.21.0.5 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.*
- *Construction and Demolition Waste Management in Dubai*
- *UAE Ministry of Climate Change and Environment (MOCCA)*



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