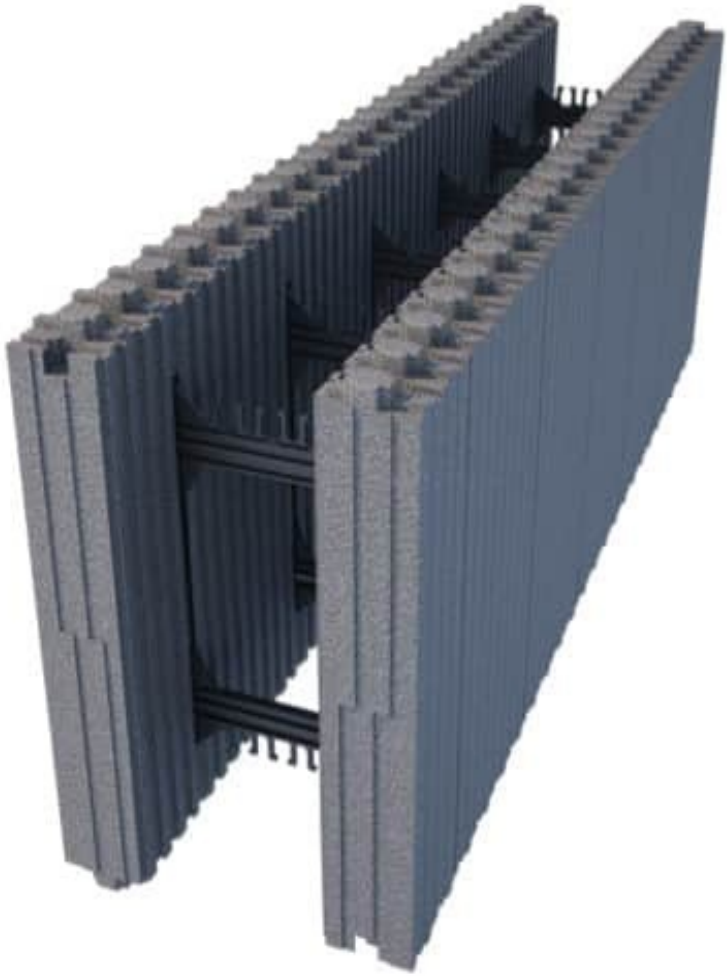
ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN15804+A2

Altherm ICF 300mm block



Owner of the declaration:
Altherm ICF Ltd

Product:
Altherm ICF 300mm block

Declared unit:
1 m2

This declaration is based on Product Category Rules:
EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022
I.S. EN 16783:2017 Thermal insulation products

Program operator:
EPD Ireland

Declaration number:
EPDIE-25-264

Issue date:
05.01.2026

Valid to:
04.01.2031

General information

Product

Altherm ICF 300mm block

Owner of the declaration:

Altherm ICF Ltd
Contact person: Neville Champ
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Program operator:

EPD Ireland
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Phone: +353 (01) 6815862
web: https://www.igbc.ie/epd-home/

Manufacturer:

Altherm ICF Ltd

Declaration number:

EPDIE-25-264

Place of production:

Altherm ICF Ltd
Airport Business Campus, Swords Rd, Santry, Dublin 9
D09 V8NT Dublin, Ireland

This declaration is based on Product Category Rules:

EN 15804:2012+A2:2019, EPD Ireland PCR Part A, Version 2.1, 2022
I.S. EN 16783:2017 Thermal insulation products

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. The EPD Program operator shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Type of EPD

Specific product EPD

Issue date:

05.01.2026

Declared unit:

1 m2 Altherm ICF 300mm block

Valid to:

04.01.2031

Scope of the EPD:

A1-A3, A4, A5, C1, C2, C3, C4, D

Year of study:

Functional unit:

1 m2 of 300mm EPS board system (two walls of 75mm thick, 150mm internal gap); thermal resistance including concrete core 5.109 m2.K/W.

Comparability:

Environmental Product Declarations from different programmes may not be directly comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See clause 5.3 of EN 15804:2012+A2:2019

LCA consultant or person responsible for LCA: .
EcoReview, Peter Seymour

Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Approved:

SIGNATURE OF PROGRAMME OPERATOR

Third party verifier:
Kim Allbury - Intertek

Pat Barry, CEO - Irish Green Building Council

Product

Product description:

This EPD is for the Altherm ICF block system for house building. The installed system comprises two insulating EPS panels (75mm thick) connected by high strength polypropylene webs. These webs maintain a core thickness between the EPS panels of 150mm, where the concrete is poured. They are pre-assembled at the Altherm production site in Swords, Co. Dublin. The internal hollow core of 150mm is filled on-site with readymixed concrete.

The Altherm 300mm ICF EPS products are used in the construction of ground floor level and basements in housing construction.

Product specification:

Altherm Insulating Concrete Formwork Systems are manufactured in compliance with the Irish Building Regulations 1997–2024 for structure, fire, sound, moisture, durability, and conservation of fuel and energy when used as specified, and is certified under NSAI Agrément Certificate 20/0415.

Technical data:

Thermal Conductivity (50mm): 0.030 W/mK. [IS EN 12667]
Compressive Strength (10% def.): 129 kPa. [IS EN 826:2013]
Bending Strength: 329.65 kPa. [IS EN 12089:2013]
EPS Density: ≥24 kg/m^3. [IS EN 1602:2013]
Reaction to Fire: Euroclass E. [IS EN 13501-1]

Market/Geographical Area:

Republic of Ireland and United Kingdom

Reference service life, product

60 years

Reference service life, building or construction works

LCA: Calculation rules

Declared unit:

1 m2 Altherm ICF 300mm block

kg per Declared unit 6.1

Cut-off criteria:

All relevant inputs and outputs - like emissions, energy and materials - have been taken into account in this LCA, and in accordance with EN15804+A2:2019. The study covers at least 95% of the materials and energy per module and at least 99% of the total use of materials and energy of each unit process. Long term emissions have been excluded from the study.

Allocation:

The measurement of environmental impacts in this EPD uses the LCIA methodologies recommended for PEF 3.1. In this EPD, the waste processes are allocated in the relevant module. In the case of the use of secondary materials or energy recovered from secondary fuels, the system boundary between the system under study and the previous system (providing the secondary materials) is set where outputs of the previous system, e.g. materials, products, building elements or energy, reach the end-of-waste state. The modularity and the polluter payer principles have been followed.

Data quality:

Time Representativeness: In this LCA the data relating to the usages, emissions and materials, and the data relating to the bespoke background processes for environmental impacts vary between up to 6 years and less than 2 years apart. The Ecoinvent database version 3.11 has been used. Time representativeness is considered to be Good.

Geographical Representativeness: Data is from the area under study (Europe), where all the raw materials come from western Europe. The Geographical Representativeness is thus assumed to be Very Good.

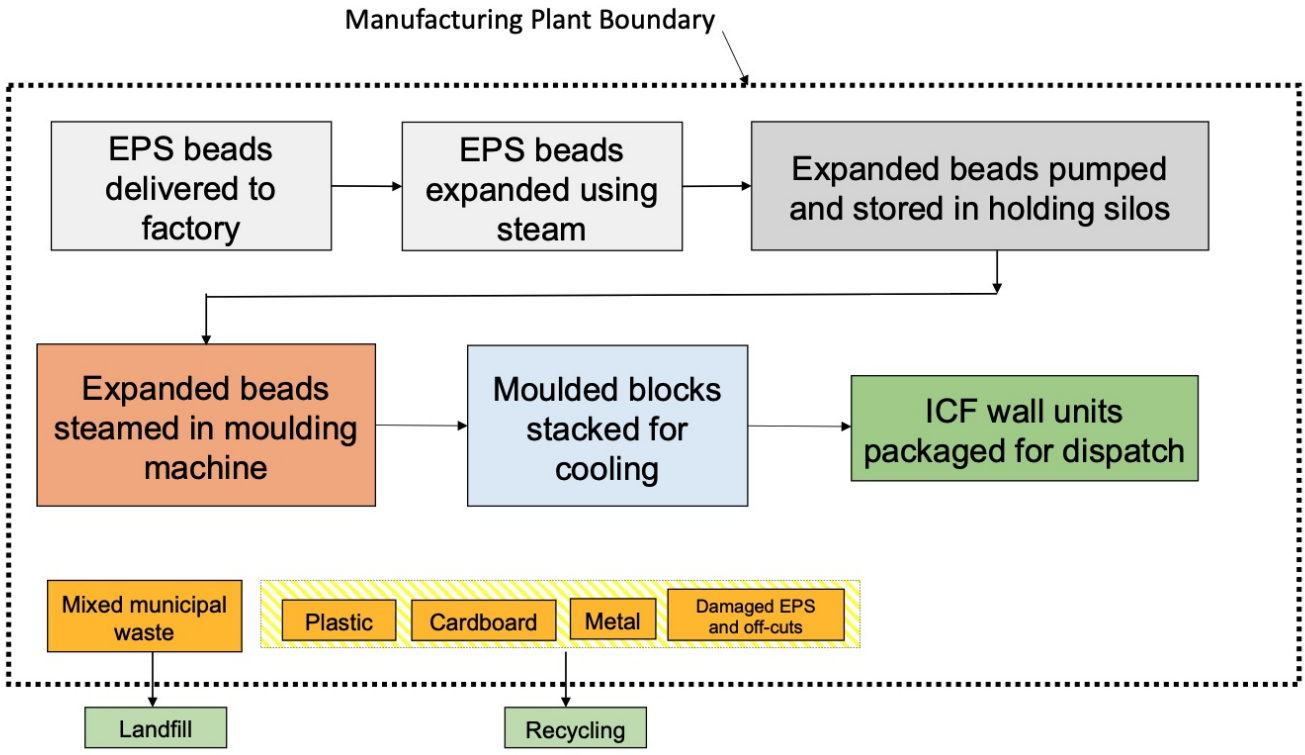
Technical Representativeness: Data is obtained directly from the processes and products under study in this LCA. The processes use electricity and diesel. The electricity record is for electricity generated by a mix of renewables and fossil fuel resources. The main raw material is EPS beads, and as noted in Time Representativeness for some of the raw materials there is more than 3 years differential between reference production year and time period for which the data are representative. Technical Representativeness is considered to be Good.

Scope and type of EPD (X = Module declared; ND = Module not declared)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

System boundary:

This LCA covers the Product (A1, A2 and A3), Construction (A4, A5) End of Life (C1 to C4) and Benefits/loads beyond the system boundary (D) Stages, as indicated above. This is termed: "Cradle to gate with options, modules C1 to C4, and module D". A schematic of Product stage (A1 - A3) is presented in the flow diagram below.



Additional technical information:

Electricity modelling
The CO_2 intensity of the grid-supplied electricity is 0.23 kg CO_2/kWh

LCA: Scenarios and additional technical information

The following information describes the scenarios in the different modules of the EPD.

A4. Transport
Transport is by road truck to site. Mean distance is taken to be 77 km. The weight per fully-loaded truck (16 - 32 tonne capacity) is 1.4 tonnes, due to the lightness of the product.

A5. Installation
In the installation phase it is assumed that there are no additional materials or energies required to insert EPS boards into the building, thus the impacts in this phase are assumed to be zero. Installation is carried out manually – thus no energy is required.

Installation losses are 2 %. It is assumed that the EPS installation losses are incinerated and the polypropylene webbing connectors are recycled. The readymix concrete that is placed in the core on the ICF in the installation stage of construction is not included in this LCA calculation, as it is the responsibility of the concrete manufacturer, who are an independent entity to Altherm.

C. End of Life Stage
In the end of life stage it is assumed that 100% of the EPS boards are incinerated.

C1. De-construction demolition
In the deconstruction/demolition stage C1 it is assumed that the ICF EPS blocks are removed manually from the building – thus no energy or materials are used, and the impacts in C1 are assumed to be zero.

C2. Transport
In the transport phase C2 it is assumed that these materials travel 150 km to incineration.

C3. Waste processing
100% of the ICF boards are incinerated. However, as the thermal efficiency of the Waste-to-Energy facility is less than 60%, the incineration process is considered a disposal process, and the impacts are assigned to C4 (disposal).

C4. Disposal
See C3 above.

D. Reuse, Recovery, Recycling potential
The benefits beyond the system arise from avoided electricity production, from incineration of EPS and polypropylene.

Biogenic Carbon
These is no Biogenic Carbon in the product.

Database used: Ecoinvent v 3.11
LCA tool used: Ecochain Helix v 4.3.1

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact										
	Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO_2 -eq	2.49E+01	3.48E+00	7.46E-01	0.00E+00	3.48E+00	0.00E+00	2.40E+01	-8.69E+00
	GWP-fossil	kg CO_2 -eq	2.46E+01	3.48E+00	7.41E-01	0.00E+00	3.48E+00	0.00E+00	2.40E+01	-8.54E+00
	GWP-biogenic	kg CO_2 -eq	2.37E-01	3.19E-03	4.93E-03	0.00E+00	3.19E-03	0.00E+00	5.89E-04	-1.40E-01
	GWP-luluc	kg CO_2 -eq	2.34E-02	1.72E-03	4.85E-04	0.00E+00	1.72E-03	0.00E+00	6.88E-05	-9.39E-03
	ODP	kg CFC11 -eq	3.82E-06	7.57E-08	7.66E-08	0.00E+00	7.57E-08	0.00E+00	6.29E-09	-4.19E-07
	AP	mol H+ -eq	8.96E-02	7.60E-03	1.88E-03	0.00E+00	7.60E-03	0.00E+00	3.06E-03	-4.90E-02
	EP-FreshWater	kg P -eq	4.24E-04	2.83E-05	9.11E-06	0.00E+00	2.83E-05	0.00E+00	3.09E-06	-2.00E-04
	EP-Marine	kg N -eq	2.67E-02	1.87E-03	5.57E-04	0.00E+00	1.87E-03	0.00E+00	1.46E-03	-5.85E-03
	EP-Terrestial	mol N -eq	2.91E-01	1.95E-02	6.06E-03	0.00E+00	1.95E-02	0.00E+00	1.57E-02	-6.66E-02
	POCP	kg NMVOC -eq	2.34E-01	1.18E-02	4.76E-03	0.00E+00	1.18E-02	0.00E+00	3.92E-03	-2.25E-02
	ADP-minerals&metals[1]	kg Sb-eq	3.91E-05	1.14E-05	9.01E-07	0.00E+00	1.14E-05	0.00E+00	4.87E-07	-7.94E-05
	ADP-fossil[1]	MJ	4.73E+02	4.94E+01	9.65E+00	0.00E+00	4.94E+01	0.00E+00	2.23E+00	-1.19E+02
	WDP[1]	m^3	3.10E+00	2.05E-01	6.90E-02	0.00E+00	2.05E-01	0.00E+00	7.98E-02	-1.16E+00

GWP-total = Global Warming Potential total; 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

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

1. 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

Remarks on environmental impacts

Additional environmental impact indicators

Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	PM	Disease incidence	1.34E-06	2.58E-07	2.74E-08	0.00E+00	2.58E-07	0.00E+00	1.55E-08	-2.20E-07
	IRP[2]	kgBq U235 -eq	1.91E+00	2.50E-02	3.93E-02	0.00E+00	2.50E-02	0.00E+00	1.04E-03	-8.50E-02
	ETP-fw[1]	CTUe	1.89E+02	2.44E+01	5.04E+00	0.00E+00	2.44E+01	0.00E+00	6.03E+01	-1.41E+01
	HTP-c[1]	CTUh	6.03E-09	1.59E-09	1.50E-10	0.00E+00	1.59E-09	0.00E+00	1.19E-09	-1.85E-09
	HTP-nc[1]	CTUh	1.51E-07	3.51E-08	6.49E-09	0.00E+00	3.51E-08	0.00E+00	4.50E-08	-8.39E-08
	SQP[1]	dimensionless	3.45E+01	2.99E+01	7.58E-01	0.00E+00	2.99E+01	0.00E+00	6.37E-01	-2.14E+01

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

1. 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
2. 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.

Resource use										
Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	PERE	MJ	2.20E+01	7.77E-01	4.72E-01	0.00E+00	7.77E-01	0.00E+00	5.49E-02	-3.49E+01
	PERM	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
	PERT	MJ	2.20E+01	7.77E-01	4.72E-01	0.00E+00	7.77E-01	0.00E+00	5.49E-02	-3.49E+01
	PENRE	MJ	4.41E+02	5.25E+01	9.02E+00	0.00E+00	5.25E+01	0.00E+00	2.43E+00	-1.29E+02
	PENRM	MJ	4.72E+01	0.00E+00	9.45E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	PENRT	MJ	4.88E+02	5.25E+01	9.97E+00	0.00E+00	5.25E+01	0.00E+00	2.43E+00	-1.29E+02
	SM	kg	6.10E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	RSF	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
	NRSF	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
	FW	m^3	3.28E+00	6.63E-03	6.59E-02	0.00E+00	6.63E-03	0.00E+00	3.44E-03	-2.11E-02

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 materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Waste

Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	HWD	kg	1.03E-03	3.14E-04	1.39E-04	0.00E+00	3.14E-04	0.00E+00	2.34E-05	-5.13E-04
	NHWD	kg	1.50E+00	2.45E+00	3.51E-02	0.00E+00	2.45E+00	0.00E+00	2.40E-01	-5.09E-01
	RWD	kg	6.13E-04	1.62E-05	1.31E-05	0.00E+00	1.62E-05	0.00E+00	6.80E-07	-4.13E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

End of life - Output flow

Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	CRU	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
	MFR	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
	MER	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
	EEE	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
	EET	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

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9.0 E-03 = 9.0*10-3 = 0.009"

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

Additional requirements

Dangerous substances

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the limit for registration with the European Chemicals Agency.

Mandatory additional information on release of dangerous substances to indoor air, soil and water.

Bibliography

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[8] https://zerowasteeurope.eu/wp-content/uploads/2023/01/Debunking-Efficient-Recovery-Full-Report-EN.docx.pdf.

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