

EN 15804+A2 EPD



## ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2.  
Owner of the Declaration – EJ

Declaration number: EPDIE-23-123  
Issue date 14th June 2024  
Valid to 13th June 2029

EPD Programme - EPD Ireland  
Programme Operator - Irish Green Building Council  
[www.epdireland.org](http://www.epdireland.org)



Composite Access Cover (IE)

# 1. General information

PROGRAMME OPERATOR	OWNER OF DECLARATION
Irish Green Building Council 19 Mountjoy Square, Dublin D01 E8P5 info@igbc.ie	EJ Birr, Co. Offaly, R42 X009, Ireland www.ejco.com
DECLARATION NUMBER	PRODUCTION SITE
EPDIE-23-123	EJ Birr Roscrea Rd, Seefin, Birr, Co. Offaly R42 X009
ECO PLATFORM EPD	DECLARED UNIT
Yes	1 kg of Composite Access Cover
APPLICABLE PRODUCT CATEGORY RULES	DECLARED PRODUCT
1. EN 15804:2012+A2:2019 2. EPD Ireland PCR Part A	1 kg of Composite Access Cover
DATE OF ISSUE	SCOPE OF EPD
14th June 2024	Cradle to gate with options, modules C1–C4, and module D
DATE OF EXPIRY	LCA CONSULTANT OR PERSON RESPONSIBLE FOR LCA
13th June 2029	Clearstream Solutions, Dublin, Ireland +353 (1) 297 3390 www.clearstreamolutions.ie
TYPE OF EPD: SINGLE OR MULTI PRODUCT	LCA SOFTWARE AND DEVELOPER IF APPLICABLE
Single product EPD	OpenLCA version 2.0.3
PRODUCT CLASSIFICATION OR NACE CODE	NAME AND VERSION OF INVENTORY USED
CPC 3712 Glass fibres and articles thereof, except woven fabrics; CPC 4219 Other structures (except prefabricated buildings) and parts of structures, of iron, steel or aluminium.	Ecoinvent version 3.9.1
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	
The CEN Norm /EN 15804 serves as the core PCR	
Independent verification of the declaration according to ISO 14025	

Internally  Externally

SIGNATURE OF PROGRAMME OPERATOR	SIGNATURE VERIFIER
Pat Barry - CEO - Irish Green Building Council   	Stephen Forson - ViridisPride Ltd   

## 2. Scope and Type of EPD

### Scope

This is a Cradle to Gate with options C1-C4 and D EPD. The Modules that are declared are shown in the table below.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse – Recovery – Recycling potential
<b>A1</b>	<b>A2</b>	<b>A3</b>	<b>A4</b>	<b>A5</b>	<b>B1</b>	<b>B2</b>	<b>B3</b>	<b>B4</b>	<b>B5</b>	<b>B6</b>	<b>B7</b>	<b>C1</b>	<b>C2</b>	<b>C3</b>	<b>C4</b>	<b>D</b>
X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
MDT	MDT	MDT	OP	OP	OP	OP	OP	OP	OP	OP	OP	MDT	MDT	MDT	MDT	MDT

X = Module declared; ND = Module not declared; MDT = Mandatory; OP = Optional.

### Declared Functional Unit

1 kg of composite access cover; weight of declared unit = 1.0 kg.

### System Boundaries

This LCA covers the Product (A1-A3), End of Life (C1-C4), and benefits and loads beyond the system boundary (D).

### 3. Detailed product description

EJ composites access covers are fibre-reinforced polymer material, providing high strength, light weight solution for pedestrian and vehicular traffic areas. Size of the representative product for LCA is 300x300 mm. The product complies fully with the standard EN124:2015.

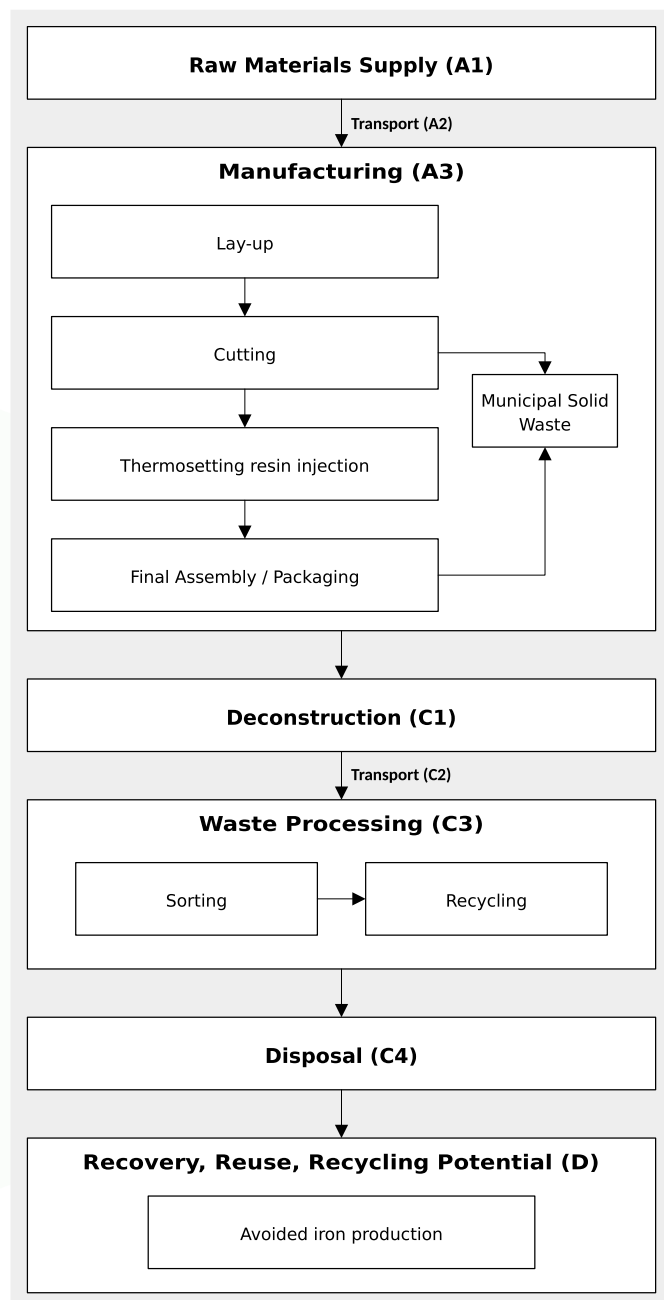
Product Components	Weight	Unit	% of Total Weight
Cover - Composite	0.35	kg	34.95%
Frame - Cast Iron	0.65	kg	65.05%
<b>Total</b>	<b>1.00</b>	<b>kg</b>	
Packaging Materials	Weight	Unit	Weight - % (versus the product)
Pallet - Wood	0.13	kg	13.20%
Banding - Polyester	0.00	kg	0.29%

Cover & Frame Clear Opening Size		EN124 Loading				
Length (mm)	Width (mm)	No. of Covers	Total Cover Weight (kg)	Frame Weight (kg)	Total Cover & Frame Weight (kg)	Load Class
200	200	1	1.59	3.09	4.68	B125
300	300	1	3.2	4.3	7.5	B125
400	400	1	5.15	5.78	10.93	B125
500	500	1	7.76	6.78	14.54	B125
600	600	1	10.55	7.96	18.51	B125
600 diameter	(round cover)	1	23	26	49	D400

*\*The table above provides clear opening dimensions and weights for common sizes of composite covers with cast iron frames. The weight of the cover and frame can be used to calculate the environmental indicators on pages 5-7.*

### 3.1 Manufacturing Process Description

The manufacturing process begins with the design of the composite access cover according to client specifications. Then, the moulding of the access cover begins with the lay-up process. Fiberglass mats are cut to the required size and layered into the mould. The arrangement of fibres and the number of layers impact the strength and stiffness of the final composite. Thermosetting resin is injected into the layers of reinforcing fibres. The resin saturates the fibres, creating a composite material when cured. The layered fibres and resin are subjected to a high internal mould pressure to remove air bubbles and ensure proper impregnation of the fibres with the resin. This step helps achieve a consistent and void-free composite. The composite material is allowed to cure, a process which involves a chemical reaction and cross linking of the resin that creates a strong and rigid matrix, bonding the reinforcing fibres together. Once the composite has cured, the access cover is demoulded and undergoes a quality control inspection. The completed composite access cover is packaged for transportation in a wooden pallet, covered in shrink wrap and secured with plastic banding.



## 4.A. LCA results - One kilogram of composite access cover

### Core Environmental impact per 1 kilogram of composite access cover

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	[kg CO <sub>2</sub> eq.]	2.18E+00	7.28E-02	2.54E-01	2.51E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.25E-03	6.40E-04	2.62E-01	-6.37E-01
GWP-fossil	[kg CO <sub>2</sub> eq.]	2.17E+00	7.27E-02	2.30E-01	2.47E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	9.24E-03	6.30E-04	1.85E-02	-6.35E-01
GWP-biogenic	[kg CO <sub>2</sub> eq.]	1.04E-02	4.69E-05	2.41E-02	3.46E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.18E-06	1.68E-05	2.43E-01	-1.39E-03
GWP-luluc	[kg CO <sub>2</sub> eq.]	1.56E-03	4.03E-05	8.10E-05	1.68E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.56E-06	1.36E-06	8.24E-06	-3.10E-04
ODP	[kg CFC-11 eq.]	8.52E-08	1.48E-09	8.14E-09	9.48E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.01E-10	4.00E-11	1.21E-09	-1.51E-08
AP	[mol H <sup>+</sup> eq.]	1.11E-02	5.90E-04	1.16E-03	1.29E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.02E-05	3.83E-06	6.18E-05	-2.41E-03
EP-freshwater <sup>[1]</sup>	[kg P eq.]	7.90E-04	4.57E-06	5.62E-05	8.51E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.57E-07	5.83E-07	5.56E-06	-2.80E-04
EP-marine	[kg N eq.]	2.32E-03	1.50E-04	2.00E-04	2.67E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.09E-06	7.75E-07	6.20E-04	-5.70E-04
EP-terrestrial	[mol N eq.]	2.43E-02	1.62E-03	1.89E-03	2.78E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	5.18E-05	7.34E-06	1.70E-04	-5.99E-03
POCP	[kg NMVOC eq.]	1.01E-02	5.40E-04	6.50E-04	1.13E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.13E-05	2.06E-06	1.20E-04	-3.12E-03
ADP-minerals&metals <sup>[2]</sup>	[kg Sb eq.]	8.55E-05	2.06E-07	5.79E-07	8.63E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.09E-08	5.71E-09	2.37E-08	1.09E-07
ADP-fossils <sup>[2]</sup>	[MJ] ncv	3.28E+01	1.01E+00	3.29E+00	3.71E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.32E-01	1.31E-02	1.19E-01	-7.86E+00
WDP <sup>[2]</sup>	m <sup>3</sup> world eq. deprived	8.03E-01	4.59E-03	3.63E-02	8.43E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.60E-04	3.20E-04	1.14E-03	-1.34E-01

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels (GWP-fossil); 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-fossils = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential, deprivation-weighted water consumption.

<sup>[2]</sup>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.

ND = Module not declared; INA = Indicator not assessed.

## 4.B. LCA results - One kilogram of composite access cover

### Resource use per 1 kilogram of composite access cover

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	[MJ]	2.06E+00	1.41E-02	2.14E-01	2.29E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.06E-03	2.43E-03	5.33E-03	-4.30E-01
PERM	[MJ]	0.00E+00	0.00E+00	3.15E+00	3.15E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	2.06E+00	1.41E-02	3.36E+00	5.44E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.06E-03	2.43E-03	5.33E-03	-4.30E-01
PENRE	[MJ]	3.14E+01	9.21E-01	3.15E+00	3.55E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.21E-01	1.31E-02	1.19E-01	-7.73E+00
PENRM	[MJ]	1.45E+00	8.83E-02	1.40E-01	1.67E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.15E-02	0.00E+00	0.00E+00	-1.38E-01
PENRT	[MJ]	3.28E+01	1.01E+00	3.29E+00	3.71E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.32E-01	1.31E-02	1.19E-01	-7.86E+00
SM	[kg]	2.27E-01	0.00E+00	0.00E+00	2.27E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-4.22E-01
RSF	[MJ]	5.97E-02	2.50E-04	5.18E-03	6.52E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	3.91E-05	0.00E+00	0.00E+00	-1.44E-02
NRSF	[MJ]	1.04E-01	5.10E-04	3.14E-03	1.08E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	7.68E-05	0.00E+00	0.00E+00	-1.73E-02
FW	[m <sup>3</sup> ]	2.04E-02	1.10E-04	8.60E-04	2.14E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.60E-05	1.12E-05	1.10E-04	-3.50E-03

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water.

ND = Module not declared; INA = Indicator not assessed.

## 4.C. LCA results - One kilogram of composite access cover

### Output flows and waste categories per 1 kilogram of composite access cover

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	[kg]	1.69E-01	9.60E-04	6.92E-03	1.77E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.20E-04	1.21E-08	3.96E-07	0.00E+00
NHWD	[kg]	1.35E-01	3.98E-02	1.93E-02	1.94E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.40E-03	5.11E-05	3.51E-01	0.00E+00
RWD	[kg]	5.97E-05	2.87E-07	1.45E-06	6.14E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.31E-08	9.28E-08	6.10E-07	0.00E+00
CRU	[kg]	-3.32E-21	-3.16E-23	7.26E-23	-3.27E-21	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.92E-22
MFR	[kg]	2.42E-01	9.30E-04	9.08E-03	2.52E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.15E-01
MER	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy.

CRU, MFR, MER, EEE, EET are not calculated by the EcoChain software.

ND = Module not declared; INA = Indicator not assessed.



## 5. Calculation rules

### Cut-off criteria

The cut-off criteria of section 6.3.6 of EN15804+A2 have been followed.

### Data Quality

The dataset is representative for the production processes used in 2023. The data Quality Level, according to Table E.1 of EN15804+A2, Annex E, is as follows:

- Time Representativeness is considered to be Very Good
- Geographical Representativeness is considered to be Good
- Technical Representativeness is considered to be Good

### Allocations

Allocation of energies, electricity types and amounts to the various manufacturing processes is based on mass.

### Assumptions

Summary of carbon footprint emission factors and residual mix breakdown of energy mix.

Fuel Breakdown	Residual mix fuel breakdown			EF	Unit
	RES	NUC	FOS		
GWP-total	15.20%	0.00%	84.80%	6.04E-01	[kg CO <sub>2</sub> eq.]
GWP-fossil	15.20%	0.00%	84.80%	6.03E-01	[kg CO <sub>2</sub> eq.]
GWP-biogenic	15.20%	0.00%	84.80%	5.24E-04	[kg CO <sub>2</sub> eq.]
GWP-luluc	15.20%	0.00%	84.80%	5.71E-05	[kg CO <sub>2</sub> eq.]

## 6. Scenarios and additional technical information

### C1. De-construction demolition

It is assumed for this study that the removal of the product from the installation site does not require any energy consumption to satisfy the deconstruction of the product.

### C2. Transport

The assumed scenario of transport for this module has been defined as an average distance of 50km required of transport to deliver the access covers to the waste treatment facility via road by the means of a EURO6, 16-32 tons of capacity, lorry.

### C3. Waste processing

100% of the cast iron frame is recycled.

### C4. Disposal

100% of the composite access cover is disposed in landfill.

### D. Reuse – Recovery – Recycling potential

As all the cast iron is recycled, these replaces the manufacture and production of cast iron.

### Declaration of biogenic carbon content at the production gate

Biogenic carbon (kg per declared unit)	Quantity	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in packaging	0.065	kg C

### Additional Technical Information

N/A.

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

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.

## 8. Other optional additional environmental information

N/A.

## 9. References

- [1] EPD Ireland Product Category Rules: PART A Implementation and use of IS 15804:2012 and CEN TR 16970 in Ireland for the development of Environmental Product Declarations, 5.03.2022 -[www.epdireland.org](http://www.epdireland.org)
- [2] Environmental Protection Agency, 2023. EPA. [Online]  
Available at: <https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/>  
[Accessed 2024].
- [3] EPD International AB, 2021. General Programme Instruction for the International EPD System, s.l.: s.n.
- [4] EPD International AB, 2023. PCR 2019:14 Construction Products, s.l.: s.n.
- [5] European Commission, 2010. ILCD handbook: General guide for Life Cycle Assessment - Detailed guidance. Luxembourg: Publication Office of the European Union.
- [6] European Commission, 2021. Environmental footprint methods. [Online]  
Available at: [https://environment.ec.europa.eu/news/environmental-footprint-methods-2021-12-16\\_en](https://environment.ec.europa.eu/news/environmental-footprint-methods-2021-12-16_en)  
[Accessed August 2023].
- [7] European Norms, 2019. EN 15804+A2: Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products, s.l.: s.n.
- [8] Eurostat, 2018. Recovery rate of construction and demolition waste, s.l.: Eurostat.
- [9] International Standards Office, 2006. ISO 14040: Environmental management – Life cycle assessment - Principles and framework, Switzerland: s.n.
- [10] Life Cycle Assessment Research Center, 2016. Guidance on Data Quality Assessment for Life Cycle Inventory Data. Cincinnati: s.n.

## 10. Annex

N/A.