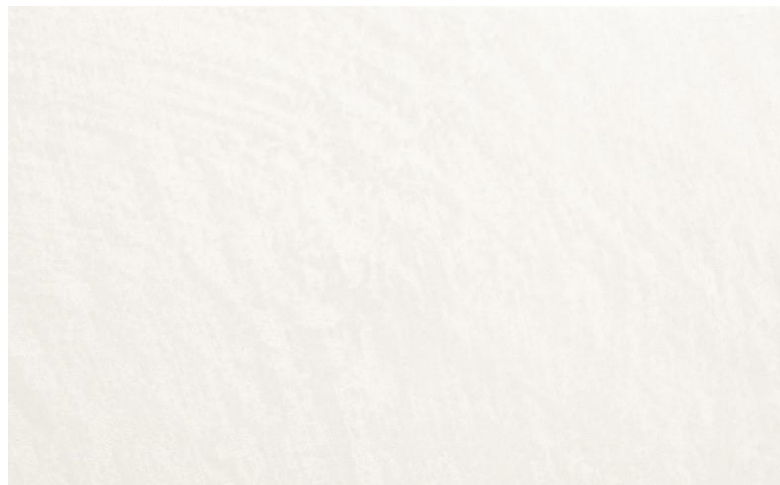




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

P50 Armuralia
Armourcoat Limited



EPD HUB, HUB-7331

Published on 25.08.2026, last updated on 25.08.2026, valid until 24.08.2031
Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.



Created with One Click LCA

ARMOURCOAT[®]
SUSTAINABLE LUXURY FINISHES

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Armourcoat Limited
Address	Unit 2 and 3 Morewood Close, London Road, Sevenoaks, Kent, United Kingdom
Contact details	sales@armourcoat.co.uk
Website	www.armourcoat.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with options, A4-B1, and modules C1-C4, D
EPD author	Duncan MacKellar, Armourcoat Ltd
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☒ External verification
EPD verifier	Yazan Badour as an authorized verifier for EPD Hub

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	P50 Armuralia
Additional labels	P350, P500, P700, P900, Armuralia, Istria, K149 RM
Product reference	P50, P350, P500, P700, P900, K149 RM
Place(s) of raw material origin	UK & Europe
Place of production	Armourcoat Ltd, Longend Lane, Marden, TN129SE United Kingdom
Place(s) of installation and use	UK & worldwide
Period for data	Period for data 01/01/2025-31/12/2025, calendar year 2025, FIY 2025.
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	0
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	50.3

ENVIRONMENTAL DATA SUMMARY

Declared unit	The declared unit is specified as 1 kg of ready-mixed polished plaster with reference to the relevant cPCR (EN 16908).
Declared unit mass	1 kg
Mass of packaging	0.055 kg
GWP-fossil, A1-A3 (kgCO₂e)	0.26
GWP-total, A1-A3 (kgCO₂e)	0.22
Secondary material, inputs (%)	0.04
Total energy use, A1-A3 (kWh)	0.65
Net freshwater use, A1-A3 (m³)	0

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Armourcoat Ltd is a UK-based manufacturer and specialist contractor of decorative surface finishes, acoustic plaster systems, three-dimensional sculptural wall systems and racket sports surfaces.

Founded in 1986, the company originally specialized in the manufacture of high-performance plasters and renders for squash and racket courts before expanding its portfolio in 1990 to include decorative plasters and specialist coatings.

Armourcoat manufactures all products in the UK and operates an integrated design, manufacturing and installation model for the UK market, with an international network of approved distributors and applicators serving projects in more than 40 countries.

Manufacturing is certified to ISO 9001, ISO 14001 and ISO 45001.
Armourcoat is a certified B Corporation.

PRODUCT DESCRIPTION

Armourcoat Ready-mixed Polished Plaster products P50, P350, P500, P700, P900 and K149 RM are ready-to-use marble stucco pastes that are hand applied by trowel to create smooth or textured decorative finishes with the appearance, hardness and tactile qualities of natural stone.

The products are formulated from slaked lime, crushed and finely milled marble, together with carefully selected additives to optimise workability and achieve a high-quality surface finish. Composed almost entirely of natural mineral materials, the finished surfaces provide excellent hardness and durability through the use of high-quality slaked lime and carefully graded marble aggregates.

Armourcoat Ready-mixed Polished Plasters can be tinted to produce a wide range of bespoke colours.

For the purposes of this Environmental Product Declaration, the product with the highest environmental impact has been selected as the representative product for the life cycle assessment. The constituent raw materials are consistent across the product range, with variations arising primarily from the size, grading and granulometry of the marble aggregates. This approach provides a conservative assessment of the product family.

Product Application:

The product is intended for application by trained professional applicators. Armourcoat Ready-mixed Polished Plasters are supplied ready for use and are hand applied using stainless steel trowels, typically in two coats, to create a range of smooth or textured decorative finishes.

The finished decorative coating is typically applied to a total thickness of 1.0–2.0 mm. The application technique and final surface treatment vary according to the product and finish specified, allowing a range of surface textures and appearances to be achieved.

For full preparation, application and finishing requirements, refer to the relevant Armourcoat product data sheet.

Technical specification:

Ready-to-use non-Newtonian thixotropic mineral paste.

Viscosity: 75,000 cP ±20,000 cP

Specific density: 1.75 kg/L ±0.1 kg/L

Dry solids content 72-74.0% +/- 2.0%

Supplied in 24 kg units.

Non-combustible as supplied and when applied

Finished coating thickness: 1.0–2.0mm.

Coverage in 2 coats around 1.6 – 2.0 kg/m²

The coverage rates will vary depending upon the application procedure and

the material used. Typical coverage per 24kg unit:

P50: approximately 12 – 15m² (130 – 160ft²).

P350: approximately 12 – 15m² (130 – 160ft²)

P500: approximately 12 – 15m² (130 – 160ft²)

P700: approximately 10 – 13m² (110 – 140ft²)

P900: approximately 10 – 12m² (110 – 130ft²)

K149 RM: approximately 30 – 40m² (320 -430 ft²)

Product Standards:

European fire certification to EN13501: A2-s1,d0

EN ISO 11890-2 Paints and varnishes: <1 g/L VOC

VOC content: <0.01 lb/gal

Indoor Air Comfort Gold: Pass

Emicode 1+: Pass

CDPH: Pass

Manufactured in accordance with ISO 9001

Material Properties:

Natural mineral material

Provides a hard and durable surface

Low embodied carbon

Low embodied energy

Resistant to mould and mildew

Up to 40% recycled content

Nontoxic

Wide colour range

Good workability in a wide range of site conditions

Good water vapour permeability

Developed and manufactured by Armourcoat in the UK

Further information can be found at armourcoat.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	
Minerals	97.2	UK & Europe
Fossil materials	2.3	UK & Europe
Bio-based materials	0.5	UK & Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.00087
Biogenic carbon content in packaging, kg C	0.01

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	The declared unit is specified as 1 kg of ready-mixed polished plaster with reference to the relevant cPCR (EN 16908).
Mass per declared unit	1 kg
Functional unit	1 kg
Reference service life	20 years

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage	End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	C1	C2	C3	C4	D		
x	x	x	x	x	x	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material

losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

Armourcoat Ready-mixed Polished Plasters are natural mineral lime stucco plasters (Marmorino), formulated primarily from slaked lime putty and finely milled marble powder.

The raw materials are carefully weighed and blended with clean water using a high-shear mixer to produce a smooth, homogeneous paste. At the end of the mixing process, the viscosity is checked and adjusted where necessary to ensure consistency.

Every batch undergoes a comprehensive quality control check, with retained samples stored for a minimum of two years from the date of manufacture.

The finished material is dispensed by weight into 24 kg plastic pails, with a filling tolerance of ± 100 g, using a gravimetric filling system. The pails are then packed onto Euro pallets and stretch wrapped for warehouse storage.

The materials are subsequently pigmented in the warehouse to the specified colour and supplied ready for use on site. All pigments used to colour Armourcoat Ready-mixed Polished Plasters are APEO-free and VOC-free.

The 24 kg plastic pails can be cleaned after use and recycled through appropriate plastic waste streams.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Armourcoat Ready-mixed Polished Plasters are manufactured at the Armourcoat factory in the UK. For UK projects, the finished product is transported to site by road, with approximately 60% of UK deliveries made to London and the South East. For international projects, the product is typically transported by road to a UK port and then by sea to Armourcoat's international distributors. The principal UK port used for export is Felixstowe.

For the purposes of the life cycle assessment, transportation to the construction site (A4) is modelled in accordance with the applicable RTS PCR. An average transportation distance of 100 km from the production facility to the construction site is assumed, using a Euro 6 lorry.

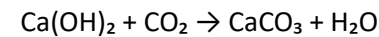
The environmental impacts associated with transportation include direct fuel combustion emissions, the upstream impacts of fuel production and associated transport infrastructure.

The installation stage (A5) accounts for environmental impacts associated with the installation of the product into the building, including product losses during application, energy consumed during installation and waste generated at the construction site.

PRODUCT USE AND MAINTENANCE (B1-B7)

B1 - During the use stage, the hydrated lime within Armourcoat Armuralia gradually absorbs carbon dioxide (CO₂) from the atmosphere through the natural process of carbonation, forming calcium carbonate. This process forms part of the natural lime cycle and is expected to be substantially complete within the assessment period.

The carbonation reaction can be represented as follows:



The potential carbon dioxide uptake is dependent on the quantity and purity of lime within the product and the extent of carbonation during the assessment period.

1kg of lime will absorb 595g of carbon dioxide based on 100% purity

The lime we use has a purity of about 96-97% so based on this 1kg of lime will reabsorb 570g of carbon dioxide.

Lime content for Armuralia is 0.13kg per declared unit

$0.13 \times 570/1000 = 0.0741 \text{ kg}$ of Carbon dioxide absorbed into the product declared as a negative emission.

Where accounted for within the life cycle assessment, the resulting CO₂ uptake is reported within the appropriate use-stage module as a negative emission.

OTHER POTENTIAL IMPACTS TO AIR, SOIL AND WATER DURING THE USE STAGE HAVE NOT BEEN ASSESSED

PRODUCT END OF LIFE (C1-C4, D)

Armourcoat Ready-mixed Polished Plasters are thin decorative mineral finishes that remain permanently bonded to the building substrate

throughout their service life. At the end of the building's life, the products are assumed to remain attached to the substrate during demolition and are therefore managed together with the associated mineral construction waste.

Module C2 – Transport

At end of life, the product is assumed to be transported to the nearest appropriate waste treatment facility for recycling or disposal. A transportation distance of 50 km by Euro 6 diesel lorry is assumed.

Transport Assumptions – Modules A2, A4 and C2

For transport modules A2, A4 and C2, the vehicle capacity utilisation factor is assumed to be 1, representing a full load. Actual vehicle utilisation may vary; however, as transportation represents a relatively small proportion of the overall environmental impact, variations in load factor are considered negligible within the assessment. Empty return journeys are not included, on the assumption that return journeys are used by the transport operator to serve other customers.

Module C3 – Waste Processing

At end of life, Armourcoat Ready-mixed Polished Plasters are assumed to be collected as part of the mineral construction waste stream. Under the modelled end-of-life scenario, 96% of the material is assumed to be collected for recycling, with the associated waste processing accounted for within Module C3.

Module C4 – Disposal

The remaining 4% of the material is assumed to be disposed of to landfill. Armourcoat Ready-mixed Polished Plasters consist predominantly of mineral constituents, including aged lime putty and marble aggregates. For the purposes of the life cycle assessment, the material sent to landfill is modelled as inert construction waste in accordance with the applicable end-of-life scenario.

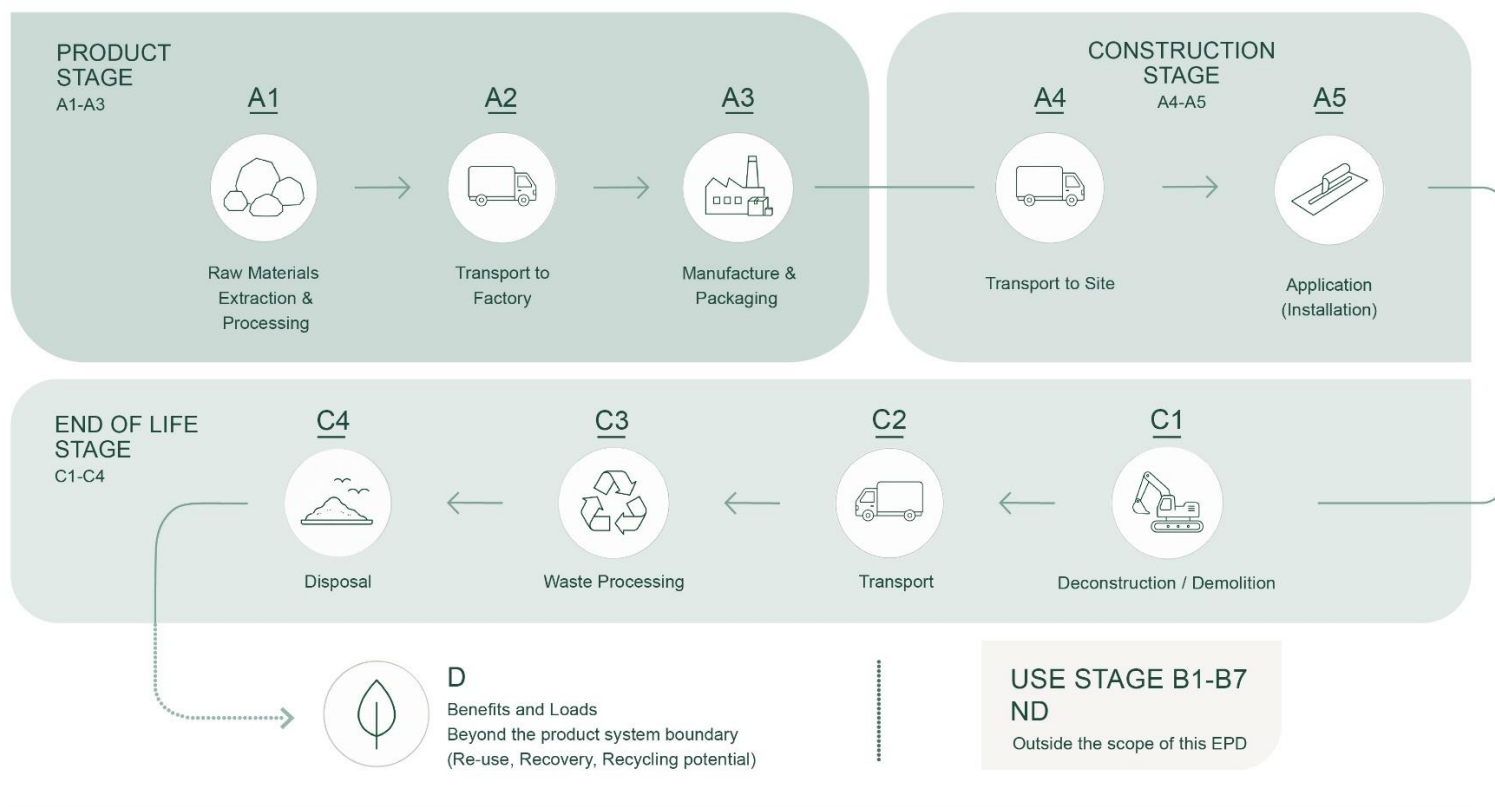
Module D – Benefits and Loads Beyond the System Boundary

Module D reports the potential benefits and loads associated with materials leaving the product system for reuse, recovery or recycling. These impacts are reported separately and occur beyond the product system boundary.

LIFE CYCLE FLOW DIAGRAM

LIFE CYCLE ASSESSMENT

Polished Plaster P50_P500_P700_P900_K149 RM



This life cycle assessment diagram illustrates the declared life cycle modules of this EPD (A1–A5, C1–C4 and D) in accordance with EN 15804+A2. Module D reports potential benefits and loads beyond the product system boundary.

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

The factory and warehouse are unheated and use LED lighting throughout. The associated energy consumption is considered negligible within the scope of the assessment and has therefore been excluded from the LCA.

Armourcoat Ready-mixed Polished Plasters are supplied ready for use and require no mixing on site. General construction-site heating and lighting have not been allocated to the installation stage, as these activities are not considered directly attributable to the installation of the product.

No additional product waste has been allocated at the installation stage. Unused, unopened pails are returned to stock where possible, while partially used pails may be retained by the client for subsequent repairs or touch-ups.

At end of life, no separate disassembly of the polished plaster finish is required. As the product remains bonded to the supporting substrate, the consumption of energy and natural resources specifically attributable to its

removal is considered negligible and has therefore been excluded from the assessment.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	0

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2.

ENVIRONMENTAL IMPACT DATA

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

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	1.84E-01	2.63E-02	1.31E-02	2.23E-01	1.52E-02	8.25E-02	-9.69E-02	0.00E+00	6.98E-03	1.29E-02	5.43E-04	-8.71E-02
GWP – fossil	kg CO ₂ e	1.87E-01	2.63E-02	4.97E-02	2.63E-01	1.52E-02	4.58E-02	-9.69E-02	0.00E+00	6.97E-03	9.12E-03	2.87E-04	-8.70E-02
GWP – biogenic	kg CO ₂ e	-3.19E-03	6.11E-06	-3.68E-02	-4.00E-02	3.32E-06	3.66E-02	0.00E+00	0.00E+00	1.38E-06	3.73E-03	2.55E-04	0.00E+00
GWP – LULUC	kg CO ₂ e	6.09E-04	1.02E-05	1.52E-04	7.72E-04	5.93E-06	1.83E-05	0.00E+00	0.00E+00	2.46E-06	1.62E-05	1.64E-07	-3.85E-05
Ozone depletion pot.	kg CFC-11e	6.56E-09	5.50E-10	1.60E-09	8.72E-09	3.18E-10	2.21E-10	0.00E+00	0.00E+00	1.39E-10	1.38E-10	8.32E-12	-2.57E-09
Acidification potential	mol H ⁺ e	3.69E-04	6.21E-05	2.21E-04	6.52E-04	3.59E-05	3.01E-05	0.00E+00	0.00E+00	2.18E-05	6.28E-05	2.04E-06	-2.94E-04
EP-freshwater ²⁾	kg Pe	2.28E-05	1.84E-06	2.65E-05	5.12E-05	1.06E-06	1.91E-06	0.00E+00	0.00E+00	4.62E-07	2.68E-06	2.36E-08	-1.59E-05
EP-marine	kg Ne	8.70E-05	1.63E-05	5.33E-05	1.57E-04	9.43E-06	1.52E-05	0.00E+00	0.00E+00	7.35E-06	2.31E-05	7.76E-07	-5.69E-05
EP-terrestrial	mol Ne	9.18E-04	1.76E-04	5.04E-04	1.60E-03	1.02E-04	9.87E-05	0.00E+00	0.00E+00	8.00E-05	2.50E-04	8.48E-06	-6.29E-04
POCP (“smog”) ³⁾	kg NMVOCe	4.46E-04	1.08E-04	2.08E-04	7.62E-04	6.25E-05	3.66E-05	0.00E+00	0.00E+00	3.42E-05	7.88E-05	3.04E-06	-4.07E-04
ADP-minerals & metals ⁴⁾	kg Sbe	6.65E-07	7.53E-08	4.39E-05	4.46E-05	4.36E-08	9.06E-07	0.00E+00	0.00E+00	2.28E-08	2.43E-08	4.56E-10	-6.26E-07
ADP-fossil resources	MJ	2.56E+00	3.95E-01	1.05E+00	4.00E+00	2.29E-01	1.18E-01	0.00E+00	0.00E+00	9.79E-02	1.31E-01	7.05E-03	-2.34E+00
Water use ⁵⁾	m ³ e depr.	5.29E-02	2.03E-03	3.09E-02	8.58E-02	1.17E-03	1.53E-02	0.00E+00	0.00E+00	4.81E-04	9.04E-04	2.03E-05	-3.19E-02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and 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 experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Particulate matter	Incidence	3.33E-09	2.56E-09	2.04E-09	7.93E-09	1.49E-09	4.23E-10	0.00E+00	0.00E+00	5.48E-10	6.38E-09	4.63E-11	-2.68E-09
Ionizing radiation ⁶⁾	kBq 11235e	8.48E-03	4.74E-04	1.62E-02	2.51E-02	2.76E-04	6.11E-04	0.00E+00	0.00E+00	1.25E-04	3.24E-04	4.43E-06	-2.99E-03
Ecotoxicity (freshwater)	CTUe	3.49E+00	5.84E-02	1.18E+00	4.73E+00	2.70E-02	1.29E-01	0.00E+00	0.00E+00	1.29E-02	4.53E-02	5.91E-04	-5.86E-01
Human toxicity, cancer	CTUh	3.33E-11	4.38E-12	5.20E-11	8.96E-11	2.54E-12	4.45E-12	0.00E+00	0.00E+00	1.19E-12	1.97E-12	5.29E-14	-1.11E-11
Human tox. non-cancer	CTUh	2.11E-09	2.55E-10	4.25E-10	2.79E-09	1.48E-10	1.65E-10	0.00E+00	0.00E+00	6.15E-11	8.27E-11	1.22E-12	-5.85E-10
SQP ⁷⁾	-	6.25E-01	3.97E-01	4.25E+00	5.27E+00	2.30E-01	1.54E-01	0.00E+00	0.00E+00	5.83E-02	1.02E-01	1.39E-02	-2.68E-01

6) 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; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Renew. PER as energy ⁸⁾	MJ	1.01E-01	6.41E-03	4.62E-01	5.70E-01	3.72E-03	-3.42E-01	0.00E+00	0.00E+00	1.69E-03	4.82E-03	6.80E-05	-4.13E-02
Renew. PER as material	MJ	6.01E-02	0.00E+00	3.65E-01	4.25E-01	0.00E+00	-3.65E-01	0.00E+00	0.00E+00	0.00E+00	-5.61E-02	-3.84E-03	0.00E+00
Total use of renew. PER	MJ	1.61E-01	6.41E-03	8.27E-01	9.94E-01	3.72E-03	-7.06E-01	0.00E+00	0.00E+00	1.69E-03	-5.13E-02	-3.77E-03	-4.13E-02
Non-re. PER as energy	MJ	1.67E+00	3.95E-01	-3.03E-01	1.76E+00	2.29E-01	-1.19E+00	0.00E+00	0.00E+00	9.79E-02	1.31E-01	7.05E-03	-2.34E+00
Non-re. PER as material	MJ	1.77E-02	0.00E+00	1.35E+00	1.37E+00	0.00E+00	-1.35E+00	0.00E+00	0.00E+00	0.00E+00	-1.65E-02	-1.13E-03	1.27E+00
Total use of non-re. PER	MJ	1.69E+00	3.95E-01	1.05E+00	3.14E+00	2.29E-01	-2.55E+00	0.00E+00	0.00E+00	9.79E-02	1.15E-01	5.92E-03	-1.07E+00
Secondary materials	kg	4.01E-04	1.71E-04	3.34E-02	3.40E-02	9.89E-05	7.41E-04	0.00E+00	0.00E+00	4.48E-05	5.10E-05	1.77E-06	3.14E-02
Renew. secondary fuels	MJ	3.16E-06	2.15E-06	1.29E-02	1.29E-02	1.25E-06	2.58E-04	0.00E+00	0.00E+00	5.66E-07	4.68E-07	3.67E-08	-3.25E-06
Non-ren. secondary fuels	MJ	1.52E-08	0.00E+00	0.00E+00	1.52E-08	0.00E+00	3.04E-10	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m³	1.17E-03	5.81E-05	7.37E-04	1.96E-03	3.38E-05	-6.21E-05	0.00E+00	0.00E+00	1.32E-05	-2.94E-04	7.33E-06	-7.86E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Hazardous waste	kg	3.63E-03	5.71E-04	2.74E-03	6.94E-03	3.31E-04	6.66E-04	0.00E+00	0.00E+00	1.40E-04	3.35E-04	7.78E-06	-4.92E-03
Non-hazardous waste	kg	1.18E-01	1.14E-02	1.93E-01	3.23E-01	6.62E-03	1.63E-01	0.00E+00	0.00E+00	2.96E-03	4.32E-01	1.78E-04	-3.21E-01
Radioactive waste	kg	2.58E-06	1.17E-07	4.05E-06	6.74E-06	6.82E-08	1.62E-07	0.00E+00	0.00E+00	3.10E-08	7.93E-08	1.08E-09	-7.17E-07

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Components for re-use	kg	1.61E-09	0.00E+00	0.00E+00	1.61E-09	0.00E+00	3.23E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.03E-07	0.00E+00	3.32E-03	3.32E-03	0.00E+00	2.03E-02	0.00E+00	0.00E+00	0.00E+00	6.75E-01	0.00E+00	0.00E+00
Materials for energy rec	kg	2.37E-21	0.00E+00	0.00E+00	2.37E-21	0.00E+00	4.74E-23	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	1.72E-03	1.72E-03	0.00E+00	2.25E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Electricity	MJ	0.00E+00	0.00E+00	7.20E-04	7.20E-04	0.00E+00	9.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy – Heat	MJ	0.00E+00	0.00E+00	1.00E-03	1.00E-03	0.00E+00	1.30E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	1.85E-01	2.61E-02	5.07E-02	2.62E-01	1.51E-02	4.63E-02	-9.69E-02	0.00E+00	6.93E-03	9.09E-03	2.85E-04	-8.45E-02
Ozone depletion Pot.	kg CFC ₁₁ e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Acidification	kg SO ₂ e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Eutrophication	kg PO ₄ ³ e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
POCP (“smog”)	kg C ₂ H ₄ e	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
ADP-elements	kg Sbe	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
ADP-fossil	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	ND	ND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	1.87E-01	2.63E-02	4.99E-02	2.63E-01	1.52E-02	4.58E-02	-9.69E-02	0.00E+00	6.97E-03	9.13E-03	2.87E-04	-8.71E-02

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO₂ is set to zero

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Solar photovoltaic electricity, multi-crystalline modules with rack (2020), Germany, ProBas, 0.0072 kgCO₂e/MJ
2. Medium-scale hydropower electricity (2000), United Kingdom, ProBas, 0.0247 kgCO₂e/MJ
3. Electricity production, wind, 1-3MW turbine, offshore, United Kingdom, Ecoinvent, 0.0168 kgCO₂e/kWh
4. Electricity voltage transformation from high to medium voltage, United Kingdom, Ecoinvent, 0.30 kgCO₂e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Transport, freight, lorry >32 metric ton, EURO6, 139.6 km

Transport to the building site (A4) - Scenario documentation

Scenario parameter	Value
Capacity utilization (including empty return) %	100
Bulk density of transported products	1740
Volume capacity utilization factor	≥1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	Armourcoat Ready-mixed Polished Plasters are pre-mixed pastes supplied ready for use. They are hand applied to the substrate using stainless steel trowels and requires no product-specific heating or lighting during installation. No energy consumption has therefore been allocated to the installation process.
Water use (m ³)	No water is required for preparation or application of the product. A minimal quantity of water is used for cleaning application tools; this has not been included in the assessment.
Ancillary materials: type and mass (kg)	No allocation has been made for application tools, which typically comprise reusable stainless-steel trowels with an expected service life of approximately 5–10 years. Personal protective equipment (PPE), including site footwear, gloves, masks and protective eyewear, has also been excluded from the assessment.
Waste materials: type and mass (kg)	Installation losses are assumed to be 2% of the product, comprising residual material remaining in the pail and material lost during application. Wooden pallets are assumed to weigh 20.77 kg. Based on 1,000 kg of product per pallet, pallet waste is calculated as 0.02077 kg per kg of product. Pallet wrap is calculated at 0.0013 kg per declared unit of 1 kg.
Waste materials: output routes	Product losses during installation are treated as inert waste to landfill as part of the general construction-site waste stream. Wooden pallet waste is modelled as 32% recycled, 30% incinerated with energy recovery and 38% landfilled. Plastic pails, lids and pallet wrap are modelled as 40% recycled, 37% incinerated with energy recovery and 23% landfilled.
Direct emissions (kg)	Direct emissions during installation are associated primarily with the evaporation of water from the applied product. Armourcoat Ready-mixed Polished Plasters have achieved Indoor Air Comfort Gold and EMICODE EC1 Plus certification and has very low emissions.

Use Stage (B1) - Scenario documentation

Scenario information	Value
Carbonation of lime	Armourcoat Polished Plaster contains hydrated lime (calcium hydroxide, $\text{Ca}(\text{OH})_2$). During the service life of the installed plaster, the lime undergoes a natural carbonation reaction in which carbon dioxide (CO_2) from the surrounding air is absorbed into the plaster and reacts with calcium hydroxide to form calcium carbonate (CaCO_3). The carbonation reaction can be represented as: $\text{Ca}(\text{OH})_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 + \text{H}_2\text{O}$ This process represents the final stage of the traditional lime cycle and results in the permanent mineralisation of atmospheric carbon dioxide within the plaster. Carbonation commences following application and continues while uncarbonated calcium hydroxide remains available and the plaster is exposed to atmospheric CO_2. The rate and extent of carbonation are influenced by factors including the quantity of available hydrated lime, plaster thickness, porosity, moisture content, surface permeability and exposure conditions. For the purposes of this EPD, the calculated uptake of atmospheric CO_2 by carbonation during the reference service life is reported in Module B1 as a negative contribution to Global Warming Potential (GWP). The quantity of CO_2 uptake has been calculated stoichiometrically from the amount of available calcium hydroxide in the installed product, adjusted by the assumed degree of carbonation over the reference service life. No carbonation credit has been attributed to calcium carbonate or marble already present within the product, as these materials are already in their carbonated state. The carbonation benefit reported in B1 relates solely to atmospheric CO_2 chemically bound through conversion of calcium hydroxide to calcium carbonate and does not represent biogenic carbon storage or an avoided-emissions credit.

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	Armourcoat Ready-mixed Polished Plasters are assumed to remain bonded to the plasterboard substrate at end of life and is therefore collected and treated together with the associated plasterboard waste rather than being separately recovered. The Ecoinvent datasets used in the life cycle assessment apply the “allocation, cut-off by classification” methodology, in accordance with the requirements of EN 15804.
Collection process: Mixed waste (kg)	1
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0.68
Recovery: energy recovery (kg)	0
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	All of the end-of-life product is assumed to be sent to the closest facilities such as recycling and landfill. Transportation distance to the closest disposal area is assumed to be 50 km and the transportation method is assumed as lorry which is the most common.

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez

Tool verification validity: 27 March 2025 - 26 March 2028

Yazan Badour as an authorized verifier for EPD Hub Limited 25.08.2026

