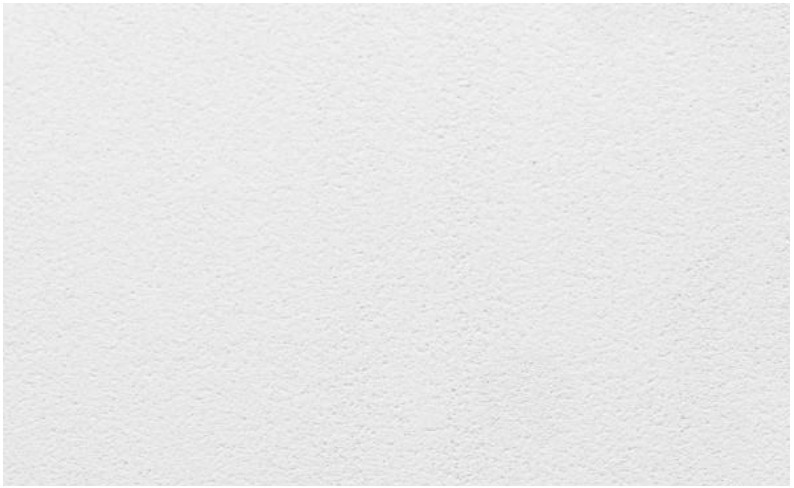


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Armourcoat Acoustic System
Armourcoat Limited



EPD HUB, HUB-7647
Published on 25.09.2026, last updated on 25.09.2026, valid until 24.09.2031
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

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Armourcoat Limited
Address	Unit 2&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-A5, 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 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	Armourcoat Acoustic Plaster System
Additional labels	Bondplast, Acoustic Boards, Acoustic Undercoat, Acoustic Topcoat, Acoustic Stone, Acoustic Fine, Acoustic Grain
Product reference	AP335, AP347
Place(s) of raw material origin	United Kingdom & 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
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	0
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	53.6

ENVIRONMENTAL DATA SUMMARY FOR 28MM SYSTEM

Declared unit	The declared unit is specified as 1m2 of Armourcoat Acoustic system with reference to the relevant cPCR (EN 16908).
Declared unit mass 28mm	7.81 kg
Mass of packaging	0.6188 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4.73
GWP-total, A1-A3 ($kgCO_2e$)	3.86
Secondary material, inputs (%)	38.7
Total energy use, A1-A3 (kWh)	38.7
Net freshwater use, A1-A3 (m^3)	0.05

ENVIRONMENTAL DATA SUMMARY FOR 48MM SYSTEM

Declared unit	The declared unit is specified as 1m2 of Armourcoat Acoustic system with reference to the relevant cPCR (EN 16908).
Declared unit mass	9.37 kg
Mass of packaging	0.7828 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5.88
GWP-total, A1-A3 ($kgCO_2e$)	4.75
Secondary material, inputs (%)	41.2
Total energy use, A1-A3 (kWh)	54.8
Net freshwater use, A1-A3 (m^3)	0.07

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 Acoustic Plaster is a seamless mineral acoustic system designed to reduce reverberation and improve sound absorption within interior spaces. Suitable for ceilings and high-level walls, including flat and curved surfaces, the system combines high acoustic performance with a seamless, monolithic decorative finish.

The system comprises an acoustic glass wool panel manufactured predominantly from recycled content, which is bonded to the building substrate using a gypsum-based adhesive. The system comprises a glass wool acoustic panel manufactured using recycled glass. At the Armourcoat factory, the panel is coated with a 5 mm plaster layer composed predominantly of expanded recycled glass granules, creating a rigid yet flexible surface for the subsequent plaster layers.

An acoustic undercoat is applied over the panels to create a consistent base, followed by the Armourcoat Acoustic Topcoat. The topcoat is formulated using finely graded recycled marble to create a microporous surface that allows sound energy to pass through the decorative finish and into the acoustic layer beneath, where it is absorbed and attenuated.

The final topcoat is applied as a continuous surface to create a seamless mineral finish while maintaining the acoustic performance of the system.

Armourcoat Acoustic Plaster is available in 28 mm and 48 mm system thicknesses and can be pigmented to create a wide range of colours. A range of surface textures and stone-like finishes can also be achieved, subject to the specified system and finish.

The system is suitable for a wide range of interior environments where control of reverberation and sound absorption is required, including museums, galleries, entrance halls, offices, meeting rooms, restaurants and hospitality spaces.

Product Application:
The product is intended for installation by trained professional applicators.

Armourcoat Acoustic Plaster panels are bonded to the prepared wall or ceiling substrate using Bondplast adhesive. The installed panels are checked for alignment and surface flatness, with minor discrepancies corrected prior to application of the plaster layers.

Acoustic undercoat plaster is mixed and applied over the panels to create a consistent base for the subsequent application of the Acoustic Topcoat. The acoustic topcoat plaster is applied to a controlled thickness and trowelled to create the specified seamless decorative finish. The completed system forms a continuous microporous surface that allows sound energy to pass through to the acoustic layer beneath.

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

Technical Specification:
Bondplast Adhesive

- Form: Powder
- Pack size: 20 kg
- Setting time: 90–150 minutes
- Recycled content: 0%
- Shelf life: 12 months

Acoustic Panels
28 mm system

- Panel dimensions: 1000 × 600 mm ±3 mm
- Panel thickness: 26 mm ±0.5 mm
- Recycled content: 74%
- Shelf life: Not applicable

48 mm system

- Panel dimensions: 1000 × 600 mm ±3 mm
- Panel thickness: 46 mm ±0.5 mm
- Recycled content: 72%
- Shelf life: Not applicable

Acoustic Topcoat Plaster – AP335 / AP347

- Solids content: 74.5% ±1%
- pH: 8.5–9.5
- Mixed density: 1.15–1.35 g/cm³
- Viscosity: 30,000 cP ±10%
- Shelf life: 12 months
- Recycled content (dry): 94%

Product Standards:
European fire certification to EN13501:2009: A2-s1, d0
Indoor Air Comfort: Pass
BREEAM - Compliance with Exemplary criteria on VOC emissions: Pass
ABG / AgBB: Pass
Manufactured in accordance with ISO 9001

Acoustic Performance:

System Thickness	System Weight	NRC	αw	Sound Absorption Class
28 mm	7.0 kg/m²	0.85	0.8	B
48 mm	8.75 kg/m²	0.95	0.95	A

System weight is approximate dry installed weight.

This EPD is product and factory specific.
Further information can be found at armourcoat.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	
Minerals	96.2	UK & Europe
Fossil materials	3.54	UK & Europe
Bio-based materials	0.26	UK & Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0.05
Biogenic carbon content in packaging, kg C	0.189

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	The declared unit is specified as 1m2 of Armourcoat Acoustic system with reference to the relevant cPCR (EN 16908).
Mass per declared unit 28mm Mass per declared unit 48mm	7.81 kg 9.37 kg
Functional unit	1 m2
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	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		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Not declared = ND

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 Acoustic Plaster is a mineral acoustic system comprising acoustic panels, adhesive, undercoat and a decorative acoustic topcoat. The system incorporates recycled glass and recycled marble aggregates within its principal components.

The glass wool panels are supplied to the Armourcoat factory as a manufactured component. At the factory, each panel is coated with a 5 mm plaster layer composed predominantly of expanded recycled glass granules, creating the acoustic panel used within the system. The marble aggregate used in the Armourcoat Acoustic Topcoat is derived from waste and offcuts generated by the marble slab industry. This material is crushed and graded for use within the acoustic topcoat.

Module A1 – Raw Material Supply
Module A1 includes the extraction, processing and production of the raw materials and components used within the Armourcoat Acoustic Plaster system, together with upstream processes associated with their manufacture.

The glass wool and lightweight expanded glass aggregate used within the acoustic panels contain a high proportion of recycled glass. The marble aggregate incorporated within the acoustic topcoat is a secondary material derived from waste and offcuts generated by the marble slab industry.
The environmental impacts associated with the production and processing of the constituent raw materials and system components are included within the assessment.

Module A2 – Transport
Raw materials and components are transported to the manufacturing facilities by road, or by a combination of sea and road transport. The transportation distances and methods used for the individual materials and components are based on information provided by the manufacturer.
The assessment includes direct emissions associated with transportation n, together with the upstream environmental impacts associated with fuel production.

Module A3 – Manufacturing and Packaging
Module A3 includes the environmental impacts associated with the manufacture of the materials and components forming the Armourcoat Acoustic Plaster system, together with the associated packaging.

Energy consumed by manufacturing equipment is included within the assessment, together with waste generated during production and the processing or disposal of this waste. Typical material losses arising during the manufacturing processes are also accounted for.

Electricity used at the Armourcoat factory is supplied through a certified 100% renewable electricity tariff. The life cycle assessment also accounts for electricity transmission losses.

TRANSPORT AND INSTALLATION (A4-A5)

Module A4 – Transport
Armourcoat Acoustic Plaster system components are manufactured and prepared at the Armourcoat factory in the UK. The glass wool panels are supplied to Armourcoat and subsequently coated at the factory with a plaster layer to form the acoustic panels.

Finished system components are transported by road for projects within the UK. For international projects, products are generally transported by road to a UK port before onward transportation by sea. The principal export port is Felixstowe.

For the purposes of the life cycle assessment, transportation from the production facility to the construction site or seaport is modelled as 170 km by lorry.

Transportation impacts include direct emissions arising from fuel combustion, together with the upstream environmental impacts associated with fuel production and transport infrastructure.

Module A5 – Installation
Module A5 includes the environmental impacts associated with installation of the Armourcoat Acoustic Plaster system at the construction site.

The assessment includes product losses arising during installation, energy consumed during the installation process and the generation and treatment of construction site waste.

PRODUCT END OF LIFE (C1-C4, D)

Module C1 – Deconstruction and Demolition
The Armourcoat Acoustic Plaster system requires no separate removal prior to demolition. The environmental impacts associated specifically with removal of the system are considered negligible, as demolition activities are attributed primarily to the supporting building elements.

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.

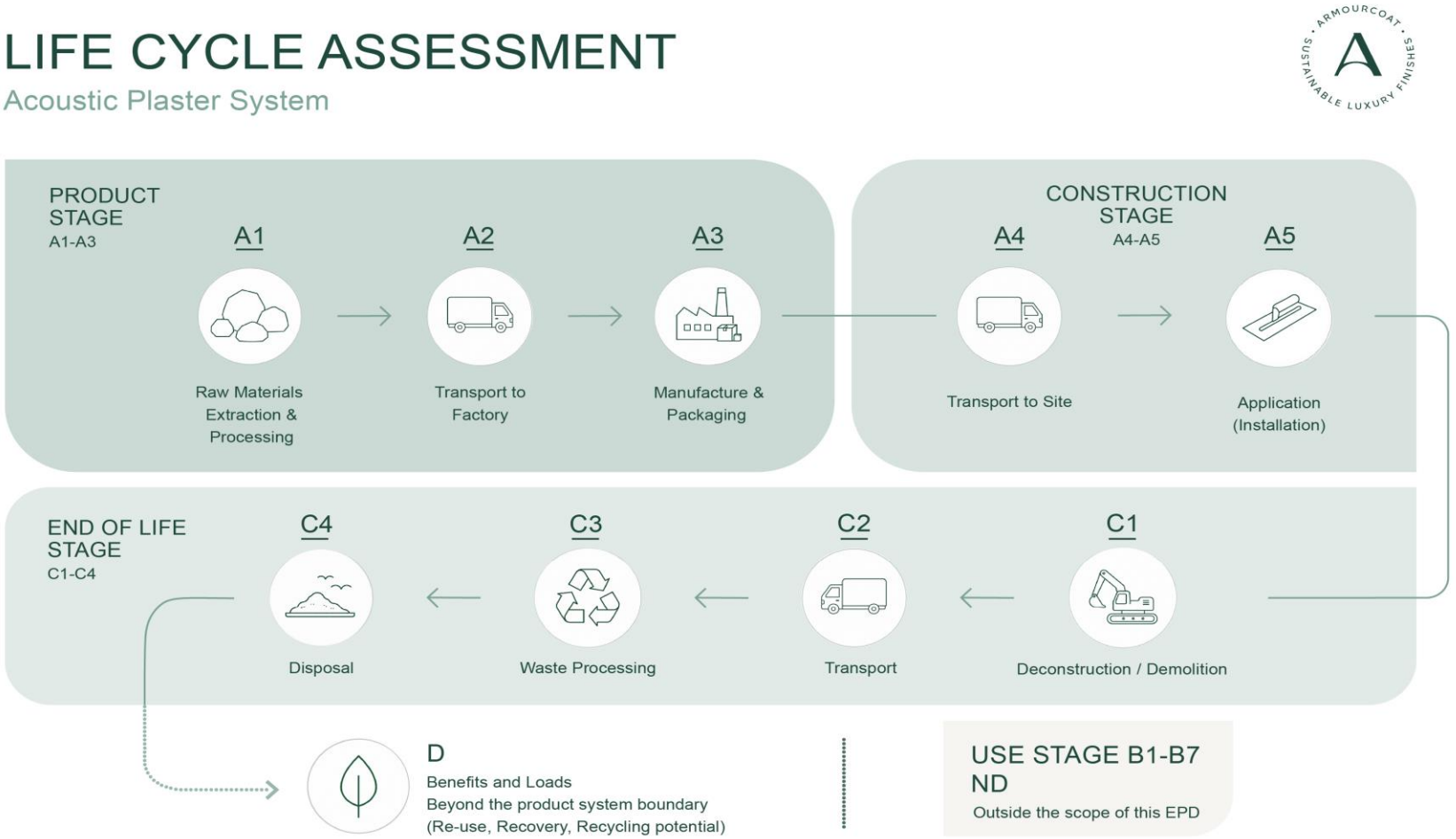
Empty return journeys are not included, on the assumption that return journeys are used by the transport operator to serve other customers.

Module C3 – Waste Processing
At end of life, Armourcoat Acoustic Plaster is assumed to be collected as part of the 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 Acoustic Plaster consists predominantly of mineral-based components, including glass wool, lightweight expanded glass aggregate, marble aggregates and mineral fillers. 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



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 that is 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 production of capital equipment, construction activities and infrastructure, together with the maintenance and operation of capital equipment, are excluded from the assessment. Personnel-related activities and energy and water consumption associated with company management and sales activities are also excluded.

The Armourcoat 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.

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 Armourcoat Clay Lime Plaster.

Unused, unopened sacks of material are returned to stock so no waste allocation has been made for site.

At end of life, no separate disassembly of the Clay Lime Plaster finish is required. 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.

Note on indicator consistency: A technical inconsistency between PENRT (total use of non-renewable primary energy) and ADP-fossil (abiotic depletion potential for fossil resources) has been identified in modules A1–A3. Following an update of the sand dataset, a contribution analysis shows that the remaining discrepancy originates from the specific characterization factors in the background environmental profiles of certain primary raw materials . These inconsistencies are inherent to the third-party verified EPDs and background databases used and cannot be adjusted by the practitioner.

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	Multiple products
Grouping method	Based on average results of product group - by total mass
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‘.

General Programme Instructions of The International EPD® System. Version 4.0, 2021-03-28
PCR 2019:14 version 1.3.4. Construction Products.
EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental Product Declarations – Core rules for the product category of construction products
PCR 2019:14-c-PCR-14 - Acoustical ceiling and wall solutions (construction product). Date 2024-04-30

ENVIRONMENTAL IMPACT DATA 28MM SYSTEM

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	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	3.58E+00	1.91E-01	8.69E-02	3.86E+00	0.00E+00	4.81E-01	0.00E+00	3.79E-02	1.79E-02	1.22E-03	-5.13E-01
GWP – fossil	kg CO_2e	3.76E+00	1.91E-01	7.74E-01	4.73E+00	0.00E+00	3.68E-01	0.00E+00	3.79E-02	0.00E+00	0.00E+00	-5.13E-01
GWP – biogenic	kg CO_2e	-1.84E-01	4.44E-05	-6.93E-01	-8.77E-01	0.00E+00	1.07E-01	0.00E+00	8.71E-06	1.79E-02	1.22E-03	0.00E+00
GWP – LULUC	kg CO_2e	5.86E-03	7.99E-05	5.43E-03	1.14E-02	0.00E+00	5.34E-03	0.00E+00	1.69E-05	0.00E+00	0.00E+00	-2.07E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}e$	2.81E-06	3.33E-09	3.09E-08	2.84E-06	0.00E+00	5.91E-08	0.00E+00	5.51E-10	0.00E+00	0.00E+00	-1.61E-08
Acidification potential	mol H^+e	1.90E-02	5.65E-04	2.94E-03	2.25E-02	0.00E+00	7.20E-04	0.00E+00	1.32E-04	0.00E+00	0.00E+00	-1.62E-03
EP-freshwater[2)]	kg Pe	2.89E-04	1.73E-05	2.50E-04	5.56E-04	0.00E+00	2.00E-05	0.00E+00	4.11E-06	0.00E+00	0.00E+00	-8.84E-05
EP-marine	kg Ne	4.25E-03	1.73E-04	7.65E-04	5.19E-03	0.00E+00	2.51E-04	0.00E+00	4.36E-05	0.00E+00	0.00E+00	-3.01E-04
EP-terrestrial	mol Ne	6.43E-02	1.87E-03	7.78E-03	7.39E-02	0.00E+00	2.25E-03	0.00E+00	4.71E-04	0.00E+00	0.00E+00	-3.27E-03
POCP ("smog")[3)]	kg NMVOCe	1.08E-02	8.84E-04	3.33E-03	1.50E-02	0.00E+00	5.42E-04	0.00E+00	1.93E-04	0.00E+00	0.00E+00	-2.39E-03
ADP-minerals & metals[4)]	kg Sbe	6.25E+00	5.46E-07	6.74E-03	6.26E+00	0.00E+00	1.25E-01	0.00E+00	1.08E-07	0.00E+00	0.00E+00	-3.77E-06
ADP-fossil resources	MJ	8.77E+01	2.78E+00	1.78E+01	1.08E+02	0.00E+00	2.71E+00	0.00E+00	5.41E-01	0.00E+00	0.00E+00	-1.45E+01
Water use[5)]	m^3e depr.	1.51E+00	1.54E-02	6.41E-01	2.16E+00	0.00E+00	5.78E-01	0.00E+00	3.16E-03	0.00E+00	0.00E+00	-1.39E-01

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 (28MM SYSTEM)

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Incidence	3.89E-08	1.86E-08	3.00E-08	8.75E-08	0.00E+00	5.25E-09	0.00E+00	3.71E-09	0.00E+00	0.00E+00	-1.31E-08
Ionizing radiation[6)]	kBq U235e	6.21E-02	2.81E-03	3.35E-01	4.00E-01	0.00E+00	3.17E-02	0.00E+00	4.53E-04	0.00E+00	0.00E+00	-1.55E-02
Ecotoxicity (freshwater)	CTUe	1.58E+01	5.16E-01	1.72E+01	3.35E+01	0.00E+00	1.38E+00	0.00E+00	1.12E-01	0.00E+00	0.00E+00	-3.62E+00
Human toxicity, cancer	CTUh	2.69E-10	3.07E-11	8.46E-10	1.15E-09	0.00E+00	4.61E-11	0.00E+00	5.95E-12	0.00E+00	0.00E+00	-5.94E-11
Human tox. non-cancer	CTUh	5.98E-09	1.76E-09	5.58E-09	1.33E-08	0.00E+00	1.26E-09	0.00E+00	3.36E-10	0.00E+00	0.00E+00	-3.40E-09
SQP[7)]	-	4.94E+00	2.79E+00	7.50E+01	8.28E+01	0.00E+00	1.14E+01	0.00E+00	5.39E-01	0.00E+00	0.00E+00	-1.22E+00

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 (28MM SYSTEM)

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	2.53E+01	4.18E-02	1.58E+01	4.11E+01	0.00E+00	-6.54E+00	0.00E+00	7.52E-03	0.00E+00	0.00E+00	-2.17E-01
Renew. PER as material	MJ	3.33E-01	0.00E+00	7.01E+00	7.34E+00	0.00E+00	-2.13E+00	0.00E+00	0.00E+00	-3.09E-01	-2.11E-02	0.00E+00
Total use of renew. PER	MJ	2.56E+01	4.18E-02	2.28E+01	4.84E+01	0.00E+00	-8.68E+00	0.00E+00	7.52E-03	-3.09E-01	-2.11E-02	-2.17E-01
Non-re. PER as energy	MJ	8.61E+01	2.78E+00	9.27E+00	9.82E+01	0.00E+00	-5.26E+00	0.00E+00	5.41E-01	0.00E+00	0.00E+00	-1.45E+01
Non-re. PER as material	MJ	4.25E+00	0.00E+00	8.53E+00	1.28E+01	0.00E+00	-8.58E+00	0.00E+00	0.00E+00	-3.94E+00	-2.69E-01	8.15E+00
Total use of non-re. PER	MJ	9.04E+01	2.78E+00	1.78E+01	1.11E+02	0.00E+00	-1.38E+01	0.00E+00	5.41E-01	-3.94E+00	-2.69E-01	-6.32E+00
Secondary materials	kg	3.06E+00	1.18E-03	1.68E-01	3.23E+00	0.00E+00	6.51E-02	0.00E+00	2.26E-04	0.00E+00	0.00E+00	2.01E-01
Renew. secondary fuels	MJ	9.75E-03	1.52E-05	2.24E-01	2.34E-01	0.00E+00	4.68E-03	0.00E+00	2.95E-06	0.00E+00	0.00E+00	-1.68E-05
Non-ren. secondary fuels	MJ	3.70E-09	0.00E+00	0.00E+00	3.70E-09	0.00E+00	7.41E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	3.96E-02	4.04E-04	8.56E-03	4.85E-02	0.00E+00	3.27E-04	0.00E+00	7.75E-05	0.00E+00	0.00E+00	-3.49E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE (28MM SYSTEM)

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	1.99E-02	1.13E-02	4.32E-02	7.44E-02	0.00E+00	5.79E-03	0.00E+00	3.46E-03	0.00E+00	0.00E+00	-2.74E-02
Non-hazardous waste	kg	1.38E+00	2.24E-01	3.24E+00	4.84E+00	0.00E+00	1.58E+00	0.00E+00	6.83E-02	0.00E+00	0.00E+00	-1.98E+00
Radioactive waste	kg	1.40E-02	6.84E-07	7.08E-05	1.41E-02	0.00E+00	3.13E-04	0.00E+00	1.08E-07	0.00E+00	0.00E+00	-3.71E-06

END OF LIFE – OUTPUT FLOWS (28MM SYSTEM)

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	3.93E-10	0.00E+00	0.00E+00	3.93E-10	0.00E+00	7.86E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	2.57E-02	0.00E+00	7.47E-03	3.32E-02	0.00E+00	2.46E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	7.35E-21	0.00E+00	0.00E+00	7.35E-21	0.00E+00	1.47E-22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	3.89E-04	0.00E+00	3.87E-03	4.26E-03	0.00E+00	1.84E+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	1.62E-03	1.62E-03	0.00E+00	7.75E-01	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	2.25E-03	2.25E-03	0.00E+00	1.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL INDICATOR – GWP-GHG (28MM SYSTEM)

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	3.77E+00	1.91E-01	7.80E-01	4.74E+00	0.00E+00	3.74E-01	0.00E+00	3.79E-02	0.00E+00	0.00E+00	-5.13E-01

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

ENVIRONMENTAL IMPACT DATA 48MM

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	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	4.65E+00	1.91E-01	-9.38E-02	4.75E+00	0.00E+00	7.64E-01	0.00E+00	4.64E-02	1.79E-02	1.22E-03	-5.35E-01
GWP – fossil	kg CO_2e	4.85E+00	1.91E-01	8.43E-01	5.88E+00	0.00E+00	4.02E-01	0.00E+00	4.64E-02	0.00E+00	0.00E+00	-5.34E-01
GWP – biogenic	kg CO_2e	-2.07E-01	4.44E-05	-9.43E-01	-1.15E+00	0.00E+00	3.57E-01	0.00E+00	1.07E-05	1.79E-02	1.22E-03	0.00E+00
GWP – LULUC	kg CO_2e	7.10E-03	8.01E-05	5.68E-03	1.29E-02	0.00E+00	5.37E-03	0.00E+00	2.07E-05	0.00E+00	0.00E+00	-2.16E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	4.70E-06	3.34E-09	3.27E-08	4.74E-06	0.00E+00	9.71E-08	0.00E+00	6.74E-10	0.00E+00	0.00E+00	-1.68E-08
Acidification potential	mol H^+e	2.74E-02	5.66E-04	3.27E-03	3.12E-02	0.00E+00	8.99E-04	0.00E+00	1.61E-04	0.00E+00	0.00E+00	-1.68E-03
EP-freshwater[2)]	kg Pe	4.14E-04	1.73E-05	2.70E-04	7.01E-04	0.00E+00	2.35E-05	0.00E+00	5.03E-06	0.00E+00	0.00E+00	-9.21E-05
EP-marine	kg Ne	5.78E-03	1.73E-04	8.59E-04	6.82E-03	0.00E+00	2.86E-04	0.00E+00	5.33E-05	0.00E+00	0.00E+00	-3.13E-04
EP-terrestrial	mol Ne	9.40E-02	1.87E-03	8.80E-03	1.05E-01	0.00E+00	2.89E-03	0.00E+00	5.76E-04	0.00E+00	0.00E+00	-3.40E-03
POCP ("smog")[3)]	kg NMVOCe	1.44E-02	8.86E-04	3.82E-03	1.91E-02	0.00E+00	6.32E-04	0.00E+00	2.36E-04	0.00E+00	0.00E+00	-2.49E-03
ADP-minerals & metals[4)]	kg Sbe	6.25E+00	5.47E-07	6.74E-03	6.26E+00	0.00E+00	1.25E-01	0.00E+00	1.33E-07	0.00E+00	0.00E+00	-3.92E-06
ADP-fossil resources	MJ	1.32E+02	2.79E+00	1.93E+01	1.54E+02	0.00E+00	3.64E+00	0.00E+00	6.62E-01	0.00E+00	0.00E+00	-1.51E+01
Water use[5)]	m^3e depr.	2.09E+00	1.54E-02	6.84E-01	2.79E+00	0.00E+00	5.91E-01	0.00E+00	3.86E-03	0.00E+00	0.00E+00	-1.45E-01

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 ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1 48MM SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Particulate matter	Incidence	3.89E-08	1.87E-08	3.52E-08	9.28E-08	0.00E+00	5.46E-09	0.00E+00	4.54E-09	0.00E+00	0.00E+00	-1.37E-08
Ionizing radiation[6)]	kBq U235e	6.21E-02	2.82E-03	3.42E-01	4.07E-01	0.00E+00	3.18E-02	0.00E+00	5.55E-04	0.00E+00	0.00E+00	-1.61E-02
Ecotoxicity (freshwater)	CTUe	1.58E+01	5.17E-01	1.92E+01	3.55E+01	0.00E+00	1.43E+00	0.00E+00	1.37E-01	0.00E+00	0.00E+00	-3.77E+00
Human toxicity, cancer	CTUh	2.69E-10	3.08E-11	1.12E-09	1.42E-09	0.00E+00	5.23E-11	0.00E+00	7.28E-12	0.00E+00	0.00E+00	-6.19E-11
Human tox. non-cancer	CTUh	5.98E-09	1.77E-09	6.20E-09	1.40E-08	0.00E+00	1.30E-09	0.00E+00	4.11E-10	0.00E+00	0.00E+00	-3.54E-09
SQP[7)]	-	4.94E+00	2.80E+00	9.66E+01	1.04E+02	0.00E+00	1.19E+01	0.00E+00	6.60E-01	0.00E+00	0.00E+00	-1.28E+00

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 48MM SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	3.86E+01	4.19E-02	1.74E+01	5.61E+01	0.00E+00	-6.24E+00	0.00E+00	9.20E-03	0.00E+00	0.00E+00	-2.26E-01
Renew. PER as material	MJ	3.33E-01	0.00E+00	9.49E+00	9.82E+00	0.00E+00	-4.62E+00	0.00E+00	0.00E+00	-3.09E-01	-2.11E-02	0.00E+00
Total use of renew. PER	MJ	3.90E+01	4.19E-02	2.69E+01	6.59E+01	0.00E+00	-1.09E+01	0.00E+00	9.20E-03	-3.09E-01	-2.11E-02	-2.26E-01
Non-re. PER as energy	MJ	1.28E+02	2.79E+00	1.02E+01	1.41E+02	0.00E+00	-4.71E+00	0.00E+00	6.62E-01	0.00E+00	0.00E+00	-1.51E+01
Non-re. PER as material	MJ	4.25E+00	0.00E+00	9.03E+00	1.33E+01	0.00E+00	-9.08E+00	0.00E+00	0.00E+00	-3.94E+00	-2.69E-01	8.48E+00
Total use of non-re. PER	MJ	1.32E+02	2.79E+00	1.93E+01	1.54E+02	0.00E+00	-1.38E+01	0.00E+00	6.62E-01	-3.94E+00	-2.69E-01	-6.58E+00
Secondary materials	kg	3.86E+00	1.19E-03	1.78E-01	4.04E+00	0.00E+00	8.13E-02	0.00E+00	2.77E-04	0.00E+00	0.00E+00	2.10E-01

Renew. secondary fuels	MJ	9.75E-03	1.52E-05	3.08E-01	3.18E-01	0.00E+00	6.36E-03	0.00E+00	3.61E-06	0.00E+00	0.00E+00	-1.75E-05
Non-ren. secondary fuels	MJ	3.70E-09	0.00E+00	0.00E+00	3.70E-09	0.00E+00	7.41E-11	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of net fresh water	m^3	5.65E-02	4.05E-04	9.50E-03	6.64E-02	0.00E+00	5.95E-04	0.00E+00	9.49E-05	0.00E+00	0.00E+00	-3.63E-03

8) PER = Primary energy resources.

END OF LIFE – WASTE 48MM SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste	kg	1.99E-02	1.13E-02	4.79E-02	7.92E-02	0.00E+00	6.01E-03	0.00E+00	4.23E-03	0.00E+00	0.00E+00	-2.86E-02
Non-hazardous waste	kg	1.86E+00	2.25E-01	3.50E+00	5.58E+00	0.00E+00	1.72E+00	0.00E+00	8.36E-02	0.00E+00	0.00E+00	-2.06E+00
Radioactive waste	kg	2.35E-02	6.86E-07	7.26E-05	2.35E-02	0.00E+00	5.01E-04	0.00E+00	1.33E-07	0.00E+00	0.00E+00	-3.86E-06

END OF LIFE – OUTPUT FLOWS 48MM SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	3.93E-10	0.00E+00	0.00E+00	3.93E-10	0.00E+00	7.86E-12	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	3.42E-02	0.00E+00	7.47E-03	4.16E-02	0.00E+00	2.50E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy rec	kg	7.35E-21	0.00E+00	0.00E+00	7.35E-21	0.00E+00	1.47E-22	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	3.89E-04	0.00E+00	3.87E-03	4.26E-03	0.00E+00	1.89E+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	1.62E-03	1.62E-03	0.00E+00	7.94E-01	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	2.25E-03	2.25E-03	0.00E+00	1.09E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL INDICATOR – GWP-GHG 48MM SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	4.86E+00	1.91E-01	8.49E-01	5.90E+00	0.00E+00	4.07E-01	0.00E+00	4.64E-02	0.00E+00	0.00E+00	-5.35E-01

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	285
Volume capacity utilization factor	≥1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	Acoustic Undercoat and Topcoat are both mixed using a mechanical plaster mixing drill. The mixing energy (240V) although minimal has been included in the scope of this EPD .
Water use (m^3)	Mixing water is used in the application process. this has been allowed for in the scope of the EPD . Water used to wash the tools during use is considered minimal and excluded from the scope.
Ancillary materials: type and mass (kg)	No allowance has been made for the application tools which are typically stainless steel trowels. these tools have a long lifespan and will be used for 5- 10 years before they are worn out. No allowance has been made for applicators PPE (site boots , gloves , masks and protective glasses)
Waste materials: type and mass (kg)	Due to the nature of the product and the application process, installation losses

	are minimal. Installation losses are 2% of the product. Pallet assumed to weigh 20.77 kg.
Waste materials: output routes	Material losses during the installation are treated as inert waste to landfill as they will become part of the general site waste. Treatment of wooden pallets (32 % recycled , 30% incinerated for energy recovery , 38 % landfill) Treatment of plastic buckets, lids and plastic wrap (40 % recycled, 37% incinerated for energy recovery, 23 % landfill)
Direct emissions (kg)	The only direct emissions during the installation in the evaporation of water content of the product into the air.

Scenario information	Value
Collection process: collected separately (kg)	All of the plaster waste is gathered as a part of the plasterboard and is generally not separated from it at the end of life. It is assumed that

	the Armourcoat Acoustic plaster waste is treated along with the plasterboard . Allocation used in Ecoinvent environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.
Collection process: Mixed waste (kg)	
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0
Recovery: energy recovery (kg)	0
Disposal (kg)	6.82
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.

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	All of the plaster waste is gathered as a part of the plasterboard and is generally not separated from it at the end of life. It is assumed that the Armourcoat Acoustic plaster waste is treated along with the plasterboard . Allocation used in Ecoinvent environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 -standard.
Collection process: Mixed waste (kg)	
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0
Recovery: energy recovery (kg)	0
Disposal (kg)	6.82
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 25.09.2026



EPD Hub
VERIFIED ISO 14025