Rebuilt® Verified
Product Carbon Footprint
Limited Assurance

ISO 14067
ISO 14064-3
EN 15804+A2
rebuilt.eco/pcf

Krause Emperor Brick
Independently Verified Product Carbon Footprint (PCF) Full Report

14 August 2025

Rebuilt

Table of Contents

Document overview

This Product Carbon Footprint (PCF) report provides a transparent and verified account of the greenhouse gas (GHG) emissions associated with the production (cradle to gate) of Krause Emperor Brick.

Prepared in alignment with internationally recognised standards, compiled using a range of high quality data sources, and reviewed by our expert in-house staff, this report demonstrates Rebuilt's customers' commitment to transparency, sustainability excellence and continuous improvement.

Whilst every effort is made to ensure that this Product Carbon Footprint is accurate and complete at the time of publication, Rebuilt recommends that users of this document consider undertaking any additional assurance as may be required to ensure data input claims by the declarer prior to using this document to make public claims.

Benefits of using this Product Carbon Footprint

This document can be used to:

- Inform your customers about the embodied emissions in your products
- Meet procurement and tender requirements
- Identify hot spots and opportunities for making improvements in carbon intensity over time
- Input into mandatory corporate carbon disclosure reporting.

Notes for readers

PCFs for products within a category will yield different results. When comparing PCFs it is important to consider:

- Not all reference datasets are identical. PCFs within the same product category but leveraging different data sources or assumptions may not give identical results.
- PCFs of construction products may not be comparable if they do not comply with EN 15804 or if they are produced using different Product Category Rules, or if their dates of production are different.
- PCFs of construction products calculated using generic industry values may not yield the same result as a PCF of a similar construction product that has been generated by a single manufacturer using product-specific or manufacturer-specific information to inform their PCF.
- Understanding the detail is important in comparisons. Expert analysis is often required to understand the detail and ensure data is truly comparable, to avoid unintended distortions.
- The best way to compare products and understand how important the apparent differences in carbon performance might be, is to place them into the context of a project or structure across the whole life cycle.

Results at a glance

Krause Emperor Brick

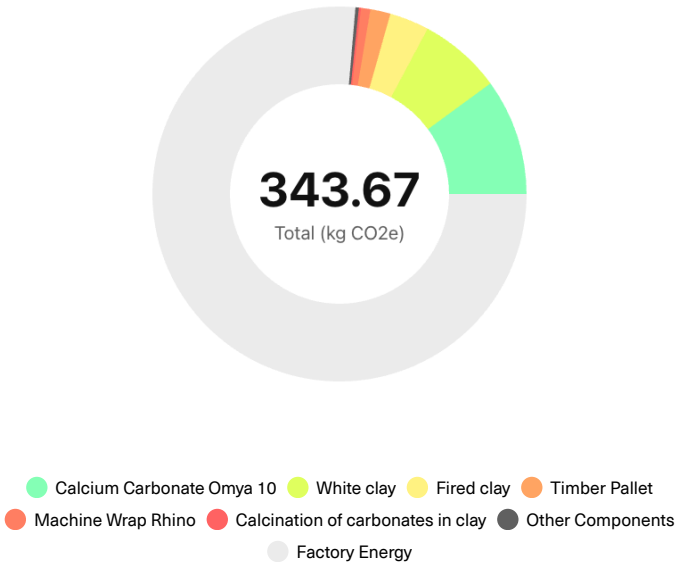
THE KRAUSE BRICKS UNIT TRUST

Total upfront carbon
(A1-A3)

343.67 Carbon Footprint
kg CO2e /tonne

Carbon impact (Fossil)

Relative carbon impact of the components of the product



Component name	Material name	Weight (kg)	kg CO2e	% of total kg CO2e
White clay	clay	727.00	24.55	7.14
Calcination of carbonates in clay	Clay in Victoria	0.00	0.65	0.19
Custom Tape	polyvinylchlor-ide, at regional storage (PVC)	0.04	0.08	0.02
Machine Wrap Rhino	stretch film (made of LLDPE) for goods transport (sector average) (in kg)	0.12	0.39	0.11
Pallet bag	polyvinylchlor-ide, at regional storage (PVC)	0.26	0.53	0.15
Timber Pallet	EUR-flat pallet - in kg	16.30	5.99	1.74
Fired clay	brick, at plant	50.00	11.75	3.42
Calcium Carbonate Omya 10	limestone, milled, packed, at plant	223.00	34.52	10.05
Machine Wrap Rhino	Biaxially Oriented Polypropylene Film (BOPP) transparent packaging film (in kg)	0.70	2.77	0.81
Factory Energy	Factory Energy	0.00	262.43	76.36
		Total (kg) 1,017.42	Total (kg CO2e) 343.67	

Carbon intensity by life cycle stage

Carbon impact from raw materials (A1), transport to factory (A2), production activities (A3), transport to site (A4), and installation (A5).

Type	A1 (kgCO2e)	A2 (kgCO2e)	A3 (kgCO2e)	A4 (kgCO2e)	A5 (kgCO2e)
Fossil	24.74	46.09	272.84	0.00	0.00
Biogenic	0.19	0.00	-25.80	0.00	0.00
Luluc	< 0.01	0.00	0.02	0.00	0.00
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	24.94	46.09	247.05	0.00	0.00

Report information

Publication date	August 13, 2025
Valid until	August 13, 2030
Verified by third-party	Declaration owner generated report Reviewed and verified by Rebuilt
Verifier contact	www.rebuilt.eco iso@rebuilt.eco
Geographic scope	This claim covers production in Australia
Data collection period	1 July 2024 - 30 June 2025
Standards compliance	ISO 14040, ISO 14044, ISO 14064-3, ISO 14067, ISO 14071
Product Category Rules (PCR)	EN 15804+A2:2019

This PCF report has been created and verified in accordance with:

ISO 14067 · GREENHOUSE GAS PROTOCOL · International Standard on Sustainability Assurance™ ISSA 5000

Company information

Declaration owner	THE KRAUSE BRICKS UNIT TRUST
Company description	-
Company address	2-6 Griffiths Street, Stawell VIC, Australia
Manufacturing facility	Griffiths St Site
Manufacturing address	2-6 Griffiths St, Stawell VIC 3380, Australia

Product information

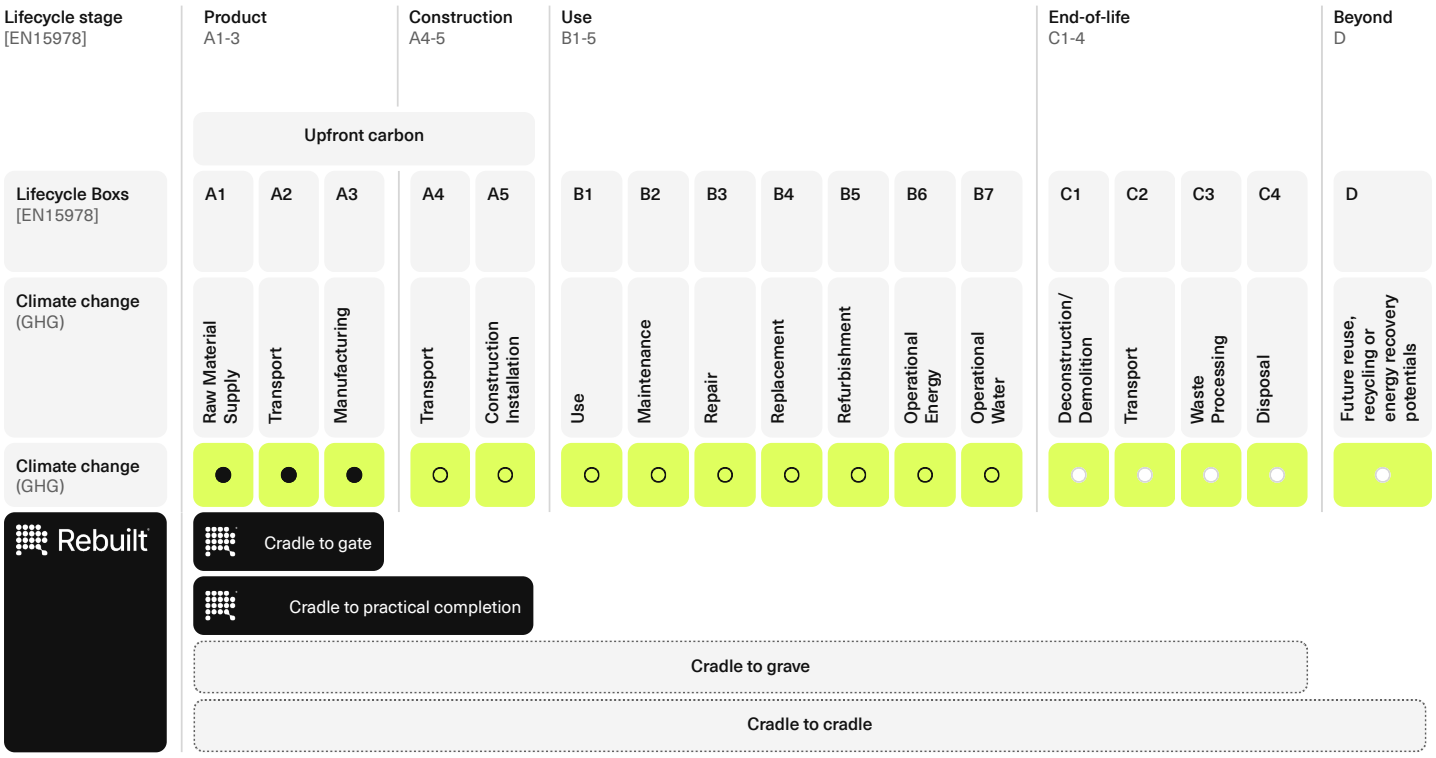
Product name	Krause Emperor Brick
SKU	EMPEXGHO
Description	A Krause Bricks specialty, the Emperor brick recalls the elongated lines of celebrated architect Frank Lloyd Wright. With dimensions of 390 x 105 x 45 mm, these unique bricks epitomise and accentuate the beauty of architectural design.
Net weight (kg) per declared unit	1,000.00
Declared unit	1 tonne For the purposes of this report, declared unit is taken to be an individual unit as sold.
ANZSIC	30
UNICLASS code	Pr_20_93_52_27
Valid from	August 13, 2025
Valid until	August 13, 2030

Technical information

Report boundary

This declaration shows the global warming potential (GWP) of the greenhouse gases embodied in this product, expressed in kilograms of carbon dioxide and equivalent gasses with global warming potential (kgCO2-e) and is based on the results of a pre-verified LCA performed in accordance with ISO14067 process and procedure as well as ISO14025 and nominated PCR EN15804.

NOTE: This declaration is limited to the life cycle stages shown in the table below.



A1 - Raw Material Extraction

The raw materials stage also called background or upstream covers the extraction and production of the raw materials needed to manufacture the product. It includes the processing of the extracted raw material to the point where it can be made into a recognisable part.

A2 - Transport Raw Material to Factory

This stage outlines the calculation of CO_2 emissions (Stage A2) for transporting raw materials to the factory. It considers transport modes, distances travelled, and material weights to calculate emissions.

A3 - Manufacturing

Converting raw materials into parts and made into the final product. It considers energy usage, packaging, process emissions and production waste.

A4 - Transport to Site

Transport of the product to the final customer, including retail and warehousing. This PCF assumes products ship directly from the manufacturing plant to the final customer and are not sent to retail or warehousing. Scenario used is distance estimated at 200km by truck

A5 - Construction & Installation

Energy to install, ancillary materials required and waste created during the construction & installation of the product on site.

B - Use Phase

Not reported as part of this scope

C - End of Life

Not reported as part of this scope

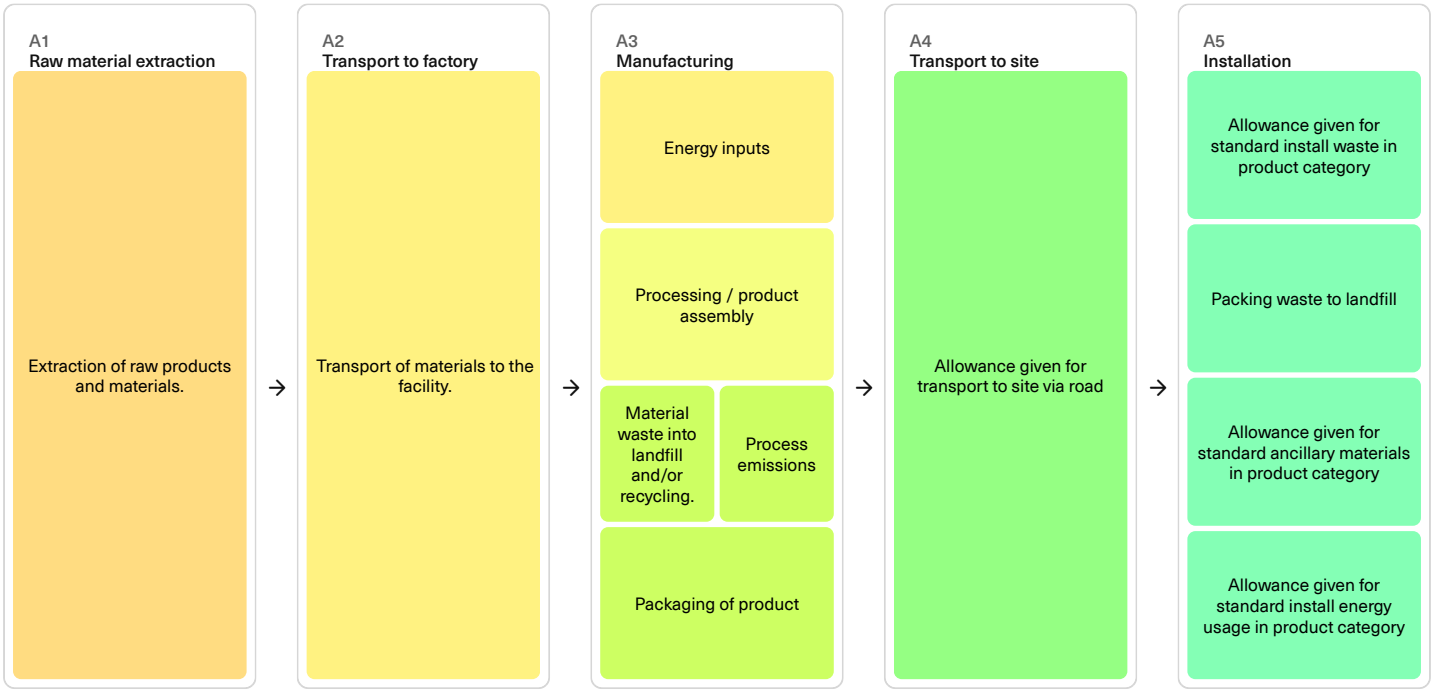
D - Beyond

Not reported as part of this scope

All effort is made to align measurement procedures for PRODUCT PCR to support comparability within the normal limits of accuracy. Users should take note of the scope, limits and product rules where they attempt to compare the A1-A5 result declared here and other product declarations.

Technical information (continued)

Process flow diagram



Exclusions from A1
None

Exclusions from A2
None

Exclusions from A3
None

Exclusions from A4
Exact transport distances and methods of transport to vary by customer

Exclusions from A5
Exact installation figures to vary by customer

Cut-off criteria

Individual processes may be excluded if their contributions to the total system's environmental impact are less than 1%. The aggregate cut-off criteria of this PCF follows PCR 2019:14 guideline where a minimum of 95% of total input (mass and energy) for each life cycle stage are included. Exclusions from the PCF is outlined in "Data Assumptions, Choices and Limitations".

The use stage is excluded from the study due to the uncertainty related to the multiple possible applications of the products assessed.

The following processes were left out of the system boundaries, in conformity to usual practices in carbon footprinting: labor, commuting of workers and administrative work.

Allocation procedures

The allocation method for this PCF is based on a physical (mass) basis. The energy used by the product is allocated by normalising the total energy used in the factory to the total mass of the product to the total production mass output from the same factory.

Results

Total upfront carbon
(A1-A3)

343.67 Carbon Footprint
kg CO2e /tonne

Carbon intensity by life cycle stage

Type	A1 (kgCO2e)	A2 (kgCO2e)	A3 (kgCO2e)	A4 (kgCO2e)	A5 (kgCO2e)
Fossil	24.74	46.09	272.84	0.00	0.00
Biogenic	0.19	0.00	-25.80	0.00	0.00
Luluc	< 0.01	0.00	0.02	0.00	0.00
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	24.94	46.09	247.05	0.00	0.00

Carbon intensity by raw material

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
White clay	5.96	-0.01	< 0.01	5.96
Fired clay	11.75	-0.91	< 0.01	10.84
Calcium Carbonate Omya 10	7.02	1.11	< 0.01	8.13
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	24.74	0.19	< 0.01	24.94

Carbon intensity by transport type

Material	Transport mode	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
White clay	Transport, truck, 16 to 28t, fleet average	18.58	0.00	0.00	18.58
Custom Tape	Transport, truck, 16 to 28t, fleet average	< 0.01	0.00	0.00	< 0.01
Machine Wrap Rhino	Transport, truck, 16 to 28t, fleet average	< 0.01	0.00	0.00	< 0.01
Pallet bag	Transport, truck, 16 to 28t, fleet average	< 0.01	0.00	0.00	< 0.01
Timber Pallet	Transport, truck, 16 to 28t, fleet average	0.42	0.00	0.00	0.42
Fired clay	N/A	0.00	0.00	0.00	0.00

Results (Continue)

Calcium Carbonate Omya 10	Transport, truck, 16 to 28t, fleet average	27.50	0.00	0.00	27.50
Machine Wrap Rhino	Transport, truck, 16 to 28t, fleet average	0.02	0.00	0.00	0.02
		Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
		46.53	0.00	0.00	46.53

Carbon intensity by energy source

Energy type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
Diesel oil, cars & light commercial vehicles	10.19	0.00	0.00	10.19
Natural gas from grid	95.03	0.00	0.00	95.03
Purchased from grid (high voltage)	52.59	0.00	0.00	52.59
Natural gas from grid	103.04	0.00	0.00	103.04
Gasoline, cars & light commercial vehicles	1.58	0.00	0.00	1.58
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	262.43	0.00	0.00	262.43

Carbon intensity by packaging material

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
Custom Tape	0.08	< 0.01	< 0.01	0.08
Machine Wrap Rhino	0.39	-0.02	< 0.01	0.37
Pallet bag	0.53	< 0.01	< 0.01	0.53
Timber Pallet	5.99	-25.86	0.02	-19.85
Machine Wrap Rhino	2.77	0.07	< 0.01	2.84
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	9.75	-25.80	0.02	-16.03

Carbon intensity by process emissions

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
Calcination of carbonates in clay	0.65	0.00	0.00	0.65
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	0.65	0.00	0.00	0.65

Carbon intensity by waste treatment

Material	Waste treatment type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
White clay	N/A	0.00	0.00	0.00	0.00

Results (Continue)

Fired clay	N/A	0.00	0.00	0.00	0.00
Calcium Carbonate Omya 10	N/A	0.00	0.00	0.00	0.00
		Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
		0.00	0.00	0.00	0.00

Data quality indicator

Data category	Data source	Evidence provided	Evidence type	Data quality	Recency	Overall confidence
Materials	ecoinvent	Yes	EPD	1	This FY	High

Overall data quality rating

High

References

- ISO 14040:2006+A1:2020 - Environmental management - Life cycle assessment - Principles and framework
- ISO 14044:2006+A2:2020 - Environmental management - Life cycle assessment - Requirements and guidelines
- ISO 14067:2018 (First Edition) - Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- EN 15804:2012+A2:2019 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- Australian National Life Cycle Inventory Database (AusLCI) version 1.42 (May 2023)
- ecoinvent database v3.11 (November 2024)
- Australian National Greenhouse Accounts Factors 2024