

Sunset Sleepers - Plain - Officer site

Independently Verified Product Carbon Footprint (PCF) Full Report

14 August 2026

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Document overview

This Product Carbon Footprint (PCF) report provides a transparent and verified account of the greenhouse gas (GHG) emissions associated with Sunset Sleepers - Plain - Officer site.

This report has been prepared by the declaration owner using primary and secondary data. The report conforms to international standard ISO 14067 and it is compiled using a range of high quality data sources. The results of this report has been reviewed by a suitably qualified Rebuilt LCA professional and verified in accordance to ISO 14064-3. This report demonstrates the declaration owner's commitment to transparency, sustainability excellence and continuous improvement.

Users of this PCF are responsible for evaluating the applicability of the data for their intended purposes.

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.

PCFs and EPDs: making comparisons

Product Carbon Footprints (PCFs) and Environmental Product Declarations (EPDs) are both based on ISO 14044 Life Cycle Assessment methodology.

The key distinction is scope:

- An EPD reports multiple environmental impact categories.
- A PCF reports greenhouse gas emissions only.

Because both apply the same methodological backbone, carbon results are technically interoperable when:

- The same lifecycle modules are included
- The same Product Category Rules are applied
- Functional performance are similar

Users should refer to the declared system boundary in this report before undertaking comparisons.

Results at a glance

Sunset Sleepers - Plain - Officer site

Sunset Sleepers

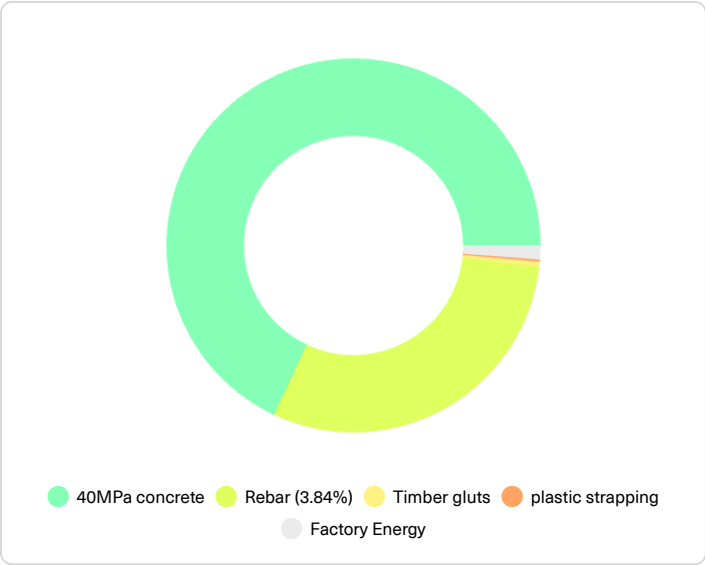
Total upfront carbon
(A1-A3)

259.70

Carbon Footprint
kg CO2e /tonne

Carbon impact (Fossil)

Relative carbon impact of the components of the product



Carbon intensity by life cycle stage

Carbon impact from raw materials (A1), transport to factory (A2), and production activities (A3)

Type	A1 (kgCO2e)	A2 (kgCO2e)	A3 (kgCO2e)
Fossil	246.10	8.56	5.03
Biogenic	0.02	0.00	-7.20
Luluc	< 0.01	0.00	< 0.01
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	246.13	8.56	-2.16

Component name	Weight (kg)	kg CO2e	% of total kg CO2e
40MPa concrete	961.60	176.61	68.01
Rebar (3.84%)	38.40	78.39	30.19
plastic strapping	0.12	0.47	0.18
Timber gluts	4.50	1.10	0.42
Factory Energy	0.00	3.12	1.20
	Total (kg)	Total (kg CO2e)	
	1,004.62	259.69	

Report information

Current version	Version 1
Publication date	August 14, 2026
Valid until	August 14, 2031
Independently verified	Declaration owner generated report Reviewed and verified by Rebuilt
Verifier contact	www.rebuilt.eco verified@rebuilt.eco
Geographic scope	This claim covers production in Australia
Goal of study	Product Development
Intended users	Consumers
Data collection period	1 January 2025 - 31 December 2025
Standards compliance	ISO 14040, ISO 14044, ISO 14064-3, ISO 14067, ISO 14071
Product Category Rules (PCR)	EN 15804+A2:2019

Verification and Assurance

This Product Carbon Footprint has undergone:

- Automated validation checks for completeness and reasonableness
- Data Quality Healthcheck assessment
- Independent review by a qualified Life Cycle Assessment practitioner
- Risk-based assessment where material risks or outlier results were identified
- Verification aligned with ISO 14064-3

Verification constitutes limited assurance appropriate to carbon-only disclosure.

All documentary evidence provided by the declaration owner has been assessed and evaluated against EN 15804+A2 and PACT Framework v3 data quality requirements. Supporting documentation is retained and available upon request for audit or regulatory review.

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



Declaration owner

Declaration owner	Sunset Sleepers
Company description	-
Company location	Officer, Australia
Manufacturing facility	Sunset Sleepers (Officer)
Manufacturing location	Officer, Australia

This document confirms that the Product Carbon Footprint presented in this report has been prepared and verified in accordance with recognised international standards for Life Cycle Assessment and carbon footprinting methodologies.

The assessment:

- Applies the principles and framework of ISO 14040 and ISO 14044
- Quantifies greenhouse gas emissions in accordance with ISO 14067
- Follows Product Category Rules EN 15804+A2:2019 where applicable
- Has been reviewed and verified in accordance with ISO 14064-3

The results represent the global warming potential (GWP) of the product for the lifecycle stages specified within this report. It does not constitute a multi-impact Environmental Product Declaration under ISO 14025.

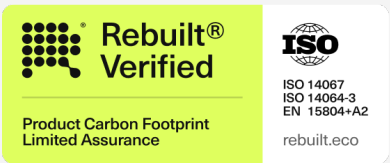
Where lifecycle modules, Product Category Rules and system boundaries are equivalent, the GWP results disclosed in this report are methodologically aligned with those presented in Environmental Product Declarations.

Verification has been conducted by a qualified Life Cycle Assessment practitioner. The verification process includes review of documentary evidence, assessment of data quality and consistency, and evaluation of methodological conformance.

The level of assurance provided is limited assurance appropriate to carbon-only disclosure.

Supporting documentation and evidence are retained and may be made available for audit or regulatory review upon request.

Based on the provided evidence and data input by the declaration owner, the PCF has been reviewed to meet the requirements of ISO 14067:2018 and we conclude that no evidence of non-conformance was observed during the review process, hence the PCF meets a limited level of assurance.



Product information



Product name	Sunset Sleepers - Plain - Officer site
SKU	1.2P80, 1.5P80, 1.8P80, 2P80, 2.4P80, 3P80
Description	Sunset Sleepers manufactures engineered precast concrete sleepers designed for earth-retaining walls across domestic, commercial, and government projects. This PCF covers 40MPa wet concrete mix product manufactured in Victoria. Pre-batched direct sourced concrete from Boral, is reinforced with two N12 ACRS (Australasian Certification Authority for Reinforcing and Structural Steels) certified steel reinforcing bars. Manufactured in Melbourne, Victoria, under strict quality control procedures, Sunset Sleepers holds full Master Precaster accreditation from the National Precast Association, recognising our adherence to the highest standards in the precast concrete industry. Furthermore, our concrete sleepers are fully compliant with AS 3600 (Concrete Structures) Australian Standards, ensuring long-term structural durability and a maximised product lifespan (which significantly minimises end-of-life replacement emissions). The manufacturing process involves placing the steel reinforcement into customised molds, followed by pouring and mechanically vibrating the wet concrete for structural consolidation. The sleepers then undergo a natural, ambient air-curing process. Absolutely no accelerated steam curing is used, resulting in a highly energy-efficient operational footprint. Finally, the concrete sleepers are demolded, packed, and stored in the open air. To accommodate various landscaping and engineering requirements, the sleepers are manufactured in a variety of patterns and lengths, including 1200mm, 1500mm, 1800mm, 2000mm, 2400mm, and 3000mm. With over 12 years of industry experience, Sunset Sleepers remains committed to continuous improvement and proactive carbon reduction. As part of this commitment, we have recently partnered with the University of Melbourne on an engineering initiative titled "LightEarth: Carbon-reduced and Lightweight

Retaining Wall Sleeper." This project aims to achieve a potential reduction of 25-30% in the concrete sleeper's weight.

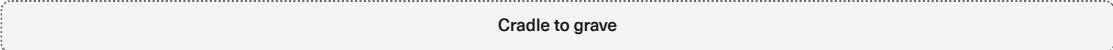
Net weight (kg) per declared unit	1,000.00
Declared unit	1 tonne
	For the purposes of this report, declared unit is taken to be an individual unit as sold.
Recycled content	0%
ANZSIC	2034
UNICLASS code	Pr_20_85_72_21

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.

Lifecycle stage [EN15978]	Product A1-3			Construction A4-5		Use B1-5							End-of-life C1-4				Beyond D													
Lifecycle Boxes [EN15978]	Upfront carbon																													
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D													
	Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy	Operational Water	Deconstruction/ Demolition	Transport	Waste Processing	Disposal	Future reuse, recycling or energy recovery potentials													
Climate change (GHG)																														
Climate change (GHG)																														
	 Cradle to gate																													
	 Cradle to practical completion																													
																														
																														

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 CO₂ 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

Not reported as part of this scope

A5 - Construction & Installation

Not reported as part of this scope

B - Use Phase

Not reported as part of this scope

C - End of Life

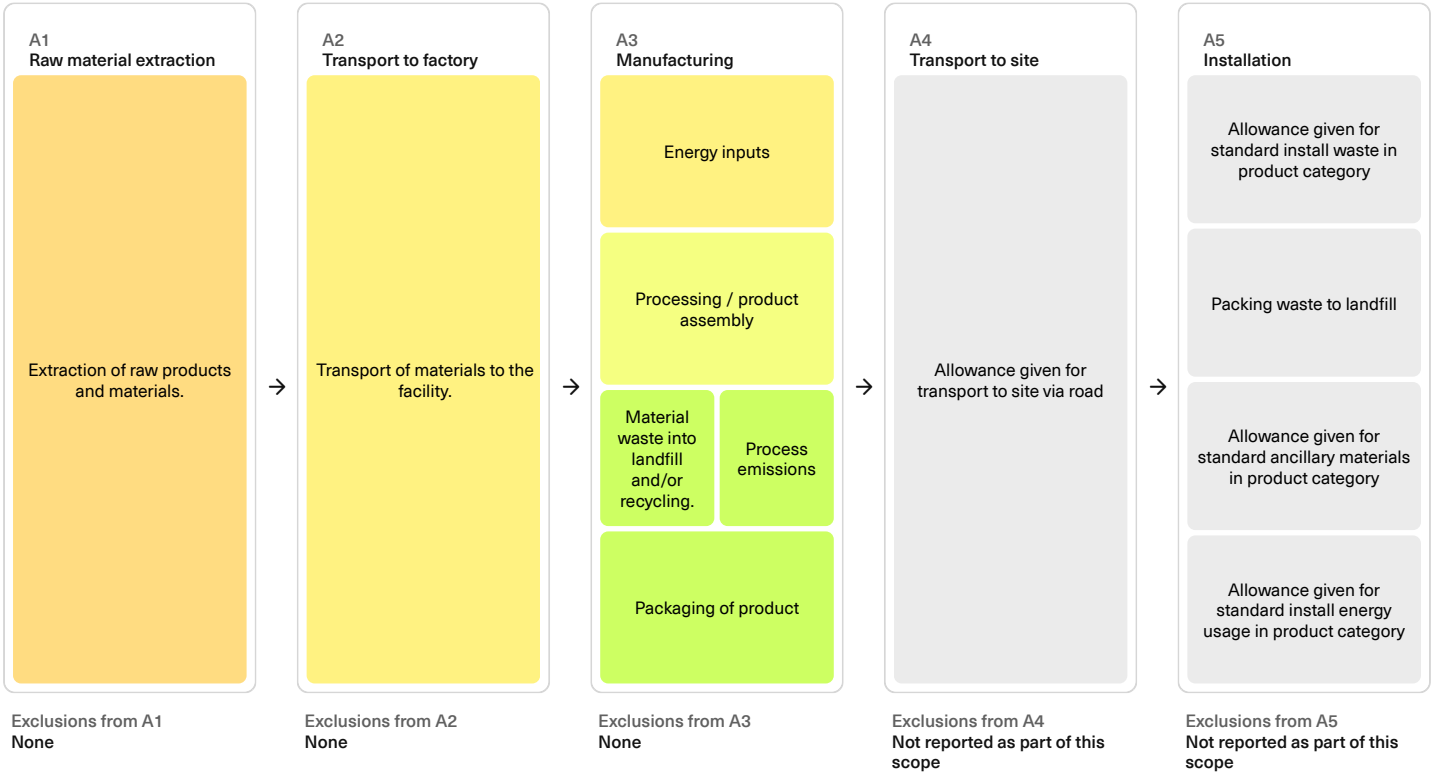
Not reported as part of this scope

D - Beyond

Not reported as part of this scope

Technical information (continued)

Process flow diagram



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.

Intended use of this PCF

This declaration is suitable for use in:

- NABERS Embodied Carbon Rating
- Green Star Responsible Products and Upfront Carbon credits
- Scope 3 reporting
- Australian Sustainability Reporting Standards (ASRS) contexts
- Government procurement sustainability requirements

Where a contract explicitly requires a Type III Environmental Product Declaration under ISO 14025, a full EPD may be required.

Results

Total upfront carbon
(A1-A3)

259.70

Carbon Footprint
kg CO₂e /tonne

Carbon intensity by life cycle stage

Type	A1 (kgCO ₂ e)	A2 (kgCO ₂ e)	A3 (kgCO ₂ e)
Fossil	246.10	8.56	5.03
Biogenic	0.02	0.00	-7.20
Luluc	< 0.01	0.00	< 0.01
	Total (kgCO ₂ e) 246.13	Total (kgCO ₂ e) 8.56	Total (kgCO ₂ e) -2.16

Carbon intensity by raw material

Material	GWP Fossil (kgCO ₂ e)	GWP Biogenic (kgCO ₂ e)	GWP Luluc (kgCO ₂ e)	GWP Total (kgCO ₂ e)
40MPa concrete	173.14	0.00	0.00	173.14
Rebar (3.84%)	72.96	0.02	< 0.01	72.99
	Total (kgCO ₂ e) 246.10	Total (kgCO ₂ e) 0.02	Total (kgCO ₂ e) < 0.01	Total (kgCO ₂ e) 246.13

Carbon intensity by transport type

Material	Transport mode	GWP Fossil (kgCO ₂ e)	GWP Biogenic (kgCO ₂ e)	GWP Luluc (kgCO ₂ e)	GWP Total (kgCO ₂ e)
40MPa concrete	By road, diesel truck, 16 to 28t, fleet average	3.13	0.00	0.00	3.13
plastic strapping	Multi-leg transport	0.02	0.00	0.00	0.02
Timber gluts	By road, diesel truck, 16 to 28t, fleet average	0.14	0.00	0.00	0.14
Rebar (3.84%)	Multi-leg transport	5.43	0.00	0.00	5.43
		Total (kgCO ₂ e) 8.73	Total (kgCO ₂ e) 0.00	Total (kgCO ₂ e) 0.00	Total (kgCO ₂ e) 8.73

Carbon intensity by energy source

Results (Continue)

Energy type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
Purchased from grid (low voltage)	3.12	0.00	0.00	3.12
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	3.12	0.00	0.00	3.12

Carbon intensity by packaging material

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
plastic strapping	0.47	< 0.01	< 0.01	0.48
Timber gluts	1.10	-7.20	0.00	-6.10
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	1.57	-7.20	< 0.01	-5.62

Carbon intensity by process emissions

Material	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
	0.00	0.00	0.00	0.00

Carbon intensity by waste treatment

Material	Waste treatment type	GWP Fossil (kgCO2e)	GWP Biogenic (kgCO2e)	GWP Luluc (kgCO2e)	GWP Total (kgCO2e)
40MPa concrete	recycling, concrete (not reinforced)	0.34	< 0.01	< 0.01	0.34
Rebar (3.84%)	N/A	0.00	0.00	0.00	0.00
		Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)	Total (kgCO2e)
		0.34	< 0.01	< 0.01	0.34

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