



Carbon Footprint Verification Report for Nedal Aluminium B.V.

Evaluation dates: 29/08/2025

Audit team: Joris Bens

Report finalised: 28/01/2026

Audit type: Assessment

Type of verification: Product footprint

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Introduction

Preferred by Nature (PbN) is an international, non-profit organisation that delivers sustainability services and engages in innovation projects to facilitate the transformation of business practices and consumer behaviour to promote the responsible use of natural resources. Approximately 3,500 certified clients and operations across various sectors have benefited from our experience and services over the last 25 years.

The purpose of this report is to verify the carbon footprint calculations and related quality system according to Preferred by Nature Carbon Footprint Certification Standard v1.0. The audit team verifies that the footprint is calculated correctly, using high-quality input data and appropriate emission factors to calculate the final carbon footprint. For land manager, the audit team, or designated local auditors also verify on-the-ground that the activity data is correct.

PbN auditors evaluate the Organisation's systems and performance against applicable requirements of the PBN standard and document the findings in this report. The report presents the conclusions of the audit and any gaps identified, either major or minor.

The assessment report and its content are kept confidential unless otherwise agreed between PbN and the Organisation.

Carbon Footprint verification is a mechanism for assuring correct calculation, accounting and reporting of the verified product footprint, considering greenhouse gas (GHG) emissions and sequestration (in case of land management activities such as farming or forestry). During the audit it is checked that all significant emissions are included, and appropriate data collection and calculation methods are used.

Audit conclusions

Verification decision

Based on the auditor's recommendation and Preferred by Nature quality review, the following verification decision is taken:	
Preferred by Nature verification decision:	Verification approved
Verification decision by:	Joris Bens and László Szoboszlai
Date of decision:	28 January 2026

Gaps Identification

Gaps describe any areas of non-alignment with standards identified during the audits.

Major gaps issued during assessments/reassessments shall be closed prior to the issuance of the verification statement.

Major Gaps	Status
1. The correct values for natural gas and electricity consumption were not used in the footprint calculation.	Open <input type="checkbox"/> Closed <input checked="" type="checkbox"/>

Minor gaps are recommended to be closed but verification statement may still be issued:

N/A

Observations are findings which the auditor felt noteworthy to identify, but not necessarily a deviation or gap from the standards:

N/A

Scope and Carbon Footprint Summary Report

Description of scope

Nedal Aluminium BV is dedicated to the production of Aluminium extrusion products, for which they purchase aluminium from several suppliers, both primary and recycled aluminium. The organization is composed of the following divisions: extrusion division and light pole division, for the first product both divisions are included in the scope. For the second product, the division for the production of light columns is excluded.

List of products covered by this assessment

Product name	Assessment Period	Total footprint per kg of product	Total footprint per kg of piece
Total production (extrusion & light columns)	2024	Absolute: 60,364,190 kgCO ₂ e	4,5 kgCO ₂ e/kg Al output
Extrusion production (excl. light columns production)	2024	Absolute: 60,147,350 kgCO ₂ e	4,4 kgCO ₂ e/ kg Al output

Carbon Footprint Summary Report

NOTE: If there are multiple products in the scope, a separate Summary Report is provided for each product.

Product name:	Total production (extrusion & light columns)		
Activity:	Secondary producer	Other, specify:	
Carbon Footprint verification year	Specify year under analysis: 2024		
Define Product 1:	Studied product name and description: The total production of extruded aluminium and finish light columns in kgCO ₂ e/kg Al output		
Define scope:	<input type="checkbox"/> Cradle-to-grave <input checked="" type="checkbox"/> Cradle-to-gate	Justification	
Unit of analysis:	Define unit of analysis: kgCO ₂ e/kg Al output		
Applicable GHGs:	<input checked="" type="checkbox"/> CO ₂ <input checked="" type="checkbox"/> PFC <input checked="" type="checkbox"/> CH ₄ <input checked="" type="checkbox"/> HFCs <input checked="" type="checkbox"/> N ₂ O <input checked="" type="checkbox"/> SF ₂	Additional GHGs:	
Excluded emissions	Specify exclusion:	Justify exclusion (short)	Estimated % of footprint (buffer)
	1. Fuel use in company vehicles, commuting and packaging	1. Insignificant size (<1%)	<1%
Allocation	Define any allocation methods applied: N/A <input type="checkbox"/> Physical relationship <input type="checkbox"/> Economic relationship		
Use profiles included (N/A for cradle-to-gate)	Define use profiles: N/A Profile 1: Estimated percentage: 100% Profile 2: Estimated percentage: 100% Profile 3: Estimated percentage: 5%		

Guidance:	Additional product rules or sector specific guidance used List: N/A	
Carbon Footprint Calculation	Specify method used to calculate carbon footprint Other (Please Specify) Other, specify: Tool developed by the Climate Neutral Group, with support by Nedal BV	
	Specify sources of Carbon Global Warming Potential (GWP) factors IPPC's Fifth Assessment Report - 2014 (AR5)	
	Specify sources of emission factors (Provide links, if applicable) co2emissiefactoren.nl, Ecoinvent and EPD's from suppliers	
	Specify any major assumptions made in quantifying emissions and in the selection or development of emission factors N/A	
	Describe method used to calculate land-use change impacts, where applicable N/A	
Data Quality	Assessment based on accuracy; completeness; time, technological and geographical representativeness; and reliability Qualitative Assessment: In many cases primary data is used, even for different types of aluminium bought from different suppliers. Only in a few cases secondary data is used from ecoinvent. For specific Dutch emission factors co2emissiefactoren.nl is used as a source, which are geographically representative. A visit to the factory confirmed that the footprint calculation is complete and the document review that it is accurate. Quantitative Assessment (1-5) 4	
Additional Comments:	None	
Carbon footprint results (product)		
Assessment Period	Total footprint per kg of product	Total footprint per kg of piece
2023	Absolute: 60,364,190kgCO2e	4,5 kgCO2e/kg Al output

Product name:	Extrusion production (excl. light columns production)	
Activity:	Secondary producer	Other, specify:
Carbon Footprint verification year	Specify year under analysis: 2024	
Define Product 2:	Studied product name and description: The total production of extruded aluminium, excluding the light columns division in kgCO ₂ e/kg Al output	

Define scope:	<input type="checkbox"/> Cradle-to-grave <input checked="" type="checkbox"/> Cradle-to-gate	Justification	
Unit of analysis:	Define unit of analysis: kgCO ₂ e/kg AI output		
Applicable GHGs:	<input checked="" type="checkbox"/> CO ₂ <input checked="" type="checkbox"/> PFC <input checked="" type="checkbox"/> CH ₄ <input checked="" type="checkbox"/> HFCs <input checked="" type="checkbox"/> N ₂ O <input checked="" type="checkbox"/> SF ₂	Additional GHGs:	
Excluded emissions	Specify exclusion:	Justify exclusion (short)	Estimated % of footprint (buffer)
	1. Fuel use in company vehicles, commuting and packaging	1. Insignificant size (<1%)	<1%
Allocation	Define any allocation methods applied: N/A <input type="checkbox"/> Physical relationship <input type="checkbox"/> Economic relationship		
Use profiles included (N/A for cradle-to-gate)	Define use profiles: N/A Profile 1: Estimated percentage: 100% Profile 2: Estimated percentage: 100% Profile 3: Estimated percentage: 5%		
Guidance:	Additional product rules or sector specific guidance used List: N/A		
Carbon Footprint Calculation	Specify method used to calculate carbon footprint Other (Please Specify) Other, specify: Tool developed by the Climate Neutral Group, with support by Nedal BV		
	Specify sources of Carbon Global Warming Potential (GWP) factors IPCC's Fifth Assessment Report - 2014 (AR5)		
	Specify sources of emission factors (Provide links, if applicable) co2emissiefactoren.nl, Ecoinvent and EPD's from suppliers		
	Specify any major assumptions made in quantifying emissions and in the selection or development of emission factors N/A		
	Describe method used to calculate land-use change impacts, where applicable N/A		

Data Quality	Assessment based on accuracy; completeness; time, technological and geographical representativeness; and reliability Qualitative Assessment: In many cases primary data is used, even for different types of aluminium bought from different suppliers. Only in a few cases secondary data is used from ecoinvent. For specific Dutch emission factors co2emissiefactoren.nl is used as a source, which are geographically representative. A visit to the factory confirmed that the footprint calculation is complete and the document review that it is accurate. Quantitative Assessment (1-5) 4	
Additional Comments:	None	
Carbon footprint results (product)		
Assessment Period	Total footprint per kg of product	Total footprint per kg of piece
2023	Absolute: 60,147,350 kgCO2e	4,4 kgCO2e/ kg Al output

Audit process

Description of scope

Provide a brief description of the audit process, including any special circumstances encountered. The use of the table below is optional, but recommended, if the audit expanded over multiple days or longer period.

Site(s)	Date(s)	Main activities	Auditor(s)
Nedal Aluminium BV	29/08/2025	Production of extruded aluminium and finished light columns	Joris Bens

Audit team

Auditor name(s)	Qualifications
Joris Bens	Joris Bens is a forester with an MSc in Sustainable Tropical Forestry. He has professional experience with tropical forest management, timber trading, and timber processing, mainly from South America. He has worked as an FSC FM and CoC and PEFC CoC auditor with Preferred by Nature since 2020, as a climate auditor working with the Climate Activator scheme since March 2021, and as a Carbon Projects auditor since 2024.

Actions taken by client prior to report finalisation

Evidence to close Major Gap 1 was shared with the auditor.

ANNEX 1: Preferred by Nature Carbon Footprint Verification Checklist

The following requirements are included in the Preferred by Nature Carbon Footprint Certification Standard, version 1.0. In case of positive conformance, findings are not always required but can be used to point out key or noteworthy aspects. In case of non-conformance, findings are required. If a requirement is marked not applicable, a justification should be provided.

1. Quality requirements		
Requirements	Findings	Conformance
1.1. Responsibilities and competence 1.1.1. The Organisation shall appoint an individual or position with overall responsibility for conformance with the applicable requirements of this Standard. Among other responsibilities, this individual or position has the responsibility to update the carbon footprint calculations as specified in Section 3. 1.1.2. The appointed individual or position shall have sufficient authority and access to resources necessary to ensure compliance with this Standard. 1.1.3. All relevant staff shall demonstrate competence in the Organisation's procedures relevant to fulfilling the requirements of this Standard.	Nedal has appointed Ben Klein Woolthuis, Interim Technical Director and Rob van der Meij, Senior Engineer, to be responsible for adequate implementation of the Standard and Rob van der Meij, Senior Engineer, to act as main contact person for carbon footprints and CB. Sr. Management is fully committed to allocate sufficient resources and budget to achieve the required CO ₂ eq emission reductions as per the Annual Reduction Target. To prove management commitment, the company has approved the management declaration on Quality, OHAS & environment. Two persons are responsible for the footprint, supported by other staff. Management has as well budget for support by Anthesis, whenever needed.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
1.2. Products in scope and documentation 1.2.1. The Organisation shall clearly define which products are included within the scope of this Standard and identify those for which it intends to perform carbon calculations and make related claims. 1.2.2. The Organisation shall keep records of all products sold with carbon claims, including the product type, the communicated carbon footprint size and the volume of products associated with these claims. 1.2.3. The Organisation shall maintain records that demonstrate conformance with this Standard. 1.2.4. All relevant records shall be retained for a minimum of five years.	Nedal has clearly defined the two products for which the footprint is calculated; the total production of all divisions and the production of extruded aluminium, excluding the finishing of the light columns. All requested information could quickly be shown during the audit and it was confirmed during the audit that all records are maintained for at least 5 years.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

<p>1.3. Performance monitoring</p> <p>1.3.1. The Organisation shall follow up on any identified nonconformities to ensure compliance with this Standard within the timeframes agreed within the audit process.</p> <p>1.3.2. The Organisation shall assess data quality based on accuracy, completeness, time, technological and geographical representativeness, and reliability. Any material concern over the data quality shall be disclosed and measure shall be planned to improve on data quality.</p>	<p>During the audit, the Client's Quality Management System was checked and found satisfactory.</p> <p>The Client is a 'learning organization' that periodically reviews and documents its shortfalls, issues and hurdles, and periodically reviews and documents the effectiveness and progress of its improvements, corrections and corrective actions to overcome these.</p> <p>In addition, the Document Management System was reviewed in terms of accessibility and version control of all data-sets and evidence related to this certification. The correct versions of documents and evidence requested by the auditor during the audit were retrievable and accessible.</p>	<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>
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2. Defining the boundaries of the carbon footprint		
Requirements	Findings	Conformance
<p>2.1. Defining carbon footprint boundaries</p> <p>2.1.1. The Organisation shall define the product, and an appropriate unit of analysis.</p> <p>2.1.2. The Organisation shall define all attributable processes within the product life cycle that generate emissions. At a minimum, the footprint shall be cradle-to-gate.</p> <p>2.1.3. The Organisation shall report all applicable greenhouse gases (GHGs) in CO₂ equivalents within the scope of the carbon footprint. As a minimum requirement, the Organisation shall account for the seven major GHGs: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃.</p> <p>2.1.4. Emissions projected to amount to less than 1% of the total anticipated carbon footprint may be excluded.</p> <p>2.1.5. Emissions that are considered unfeasible to quantify or associated with unreasonably complicated or costly data collection may be left out in justified cases, provided that the total emissions excluded do not exceed 5% of the total anticipated carbon footprint.</p> <p>2.1.6. To account for any excluded emission sources (as per 2.1.4 and 2.1.5), the Organisation shall add an emission buffer to the total carbon footprint, proportionate to the exclusions and any perceived margin of error.</p> <p>2.1.7. Any excluded emissions, including carbon-intensive activities that have been outsourced, shall be justified, and documented.</p>	<p>The scope classification according to the GHG Protocol has been applied, including all relevant scope 1, 2 and 3 emissions in the calculation of the footprint. This classification was done based on the following considerations, which were validated during the audit:</p> <ul style="list-style-type: none"> • The boundaries are as ample as possible; • If emission sources were excluded, the justification is provided. <p>All required GHGs were taken into account and the correct GWP values are used.</p>	<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>

3. Calculation of carbon footprint

Requirements	Findings	Conformance
3.1. Identifying emission sources 3.1.1. The Organisation shall include in the product carbon footprint calculations all emission sources required by Annex I unless otherwise justified per 2.1. 3.1.2. The Organisation shall include Scope 2 emissions based on both the emissions factors from contractual instruments (market-based method) and the average energy generation emission factors for a defined geographic location (location-based method). The market-based method should then be used in defining the footprint if it meets the quality criteria set out in the GHG Protocol - Scope 2 Guidance. If it does not meet these criteria, the location-based should be used. 3.1.3. Any biogenic emissions or removals and land-use change impacts occurring within the product boundary may be included in the calculations, but shall be indicated separately in the calculation results, when applicable 3.1.4. The Organisation shall ensure that no double counting occurs for removals in relation to the product footprint calculations. 3.1.5. The Organisation may include biogenic carbon stored in final products that is not released to the atmosphere, based on the carbon stored in the product after the 100-year assessment period. Assumptions and calculations of the storage profile shall be documented (see Annex III). 3.1.6. Avoided emissions shall not be included in the inventory but may be reported separately	<p>The scope classification according to the GHG Protocol has been applied, including all relevant scope 1, 2 and 3 emissions in the calculation of the footprint. This classification was done based on the following considerations, which were validated during the audit:</p> <ul style="list-style-type: none"> • The boundaries are as ample as possible; • If emission sources were excluded, the justification is provided. <p>Removals and avoided emissions are not applicable to these footprints.</p>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.2. Choosing calculation methods 3.2.1. The Organisation shall justify the method(s) for calculating the carbon footprint (e.g., sector specific calculation tools, spreadsheets, etc.). 3.2.2. The Organisation shall use the most accurate calculation method available to them. 3.2.3. If updated sector- or product-specific rules exist, these should be applied. 3.2.4. Carbon footprint calculations shall be made exclusive of any purchases of carbon offsets. NOTE: When calculations are performed using the Preferred by Nature-supplied range of tools, the methodology can be considered accurate and justified.	<p>The organisation has a tool developed by the Climate Neutral Group, with support of Nedal BV. During the audit this was confirmed to be the most accurate calculation method that was available for Nedal. Carbon offsets are not applicable to these calculations.</p>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>
3.3. Collecting emission data, choosing emission factors, and calculating results 3.3.1. The carbon footprint shall be based on primary data for all processes owned or operated by the Organisation attributable to the product. For other processes, including those involving indirect emissions, the Organisation shall use primary data if available, and otherwise use secondary data from a relevant and authoritative source. 3.3.2. The Organisation shall identify and justify the method for collecting emission data across the product life cycle, as well as the sources of data, emissions factors, and any techniques used for data collection via sampling or estimation. 3.3.3. GHG emissions shall be calculated using emission factors from reliable and updated sources (e.g., government agencies or industry associations) where quantifications are based on calculations (e.g., activity data multiplied by an emission factor) rather than direct measurement of emissions.	<p>In many cases primary data is used, even for different types of aluminium bought from different suppliers. Only in a few cases secondary data is used from ecoinvent. For specific Dutch emission factors co2emissiefactoren.nl is used as a source, which are geographically representative. A visit to the factory confirmed that the footprint calculation is complete and the document review that it is accurate.</p>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>

<p>3.3.4. The Organisation shall use emission factors that are relevant to the process or activity concerned and current at the time of quantification (e.g., kgCO₂e per kWh for the year under calculation), whenever possible.</p> <p>3.3.5. The Organisation shall convert emissions data into CO₂ equivalent though Global Warming Potential (GWP) factors .</p> <p>3.3.6. The Organisation shall ensure that the use of any energy attribute certificates demonstrate real emissions reductions (as based on green or renewable energy) and that such reductions have not been achieved through carbon offsets.</p> <p>3.3.7. The product carbon footprint shall be expressed in relation to the specified unit of analysis in kgCO₂e or in tCO₂e (e.g., kgCO₂e per single production unit or per m³ of product) and in absolute terms as an amount of tCO₂e.</p> <p>3.3.8. The Organisation shall update the carbon footprint of all products within the scope annually, to account for material changes and updates to calculation methodology .</p>	3.3.8 N/A for this scope of verification – no certificate	
<p>3.4. Allocations</p> <p>3.4.1. The Organisation shall avoid or minimise allocations where possible. This can be done by gathering additional product-specific data from value chain partners, developing models to estimate emissions related to products produced, subdividing a common process to distinguish product inputs and outputs, or expanding the system boundaries.</p> <p>3.4.2. If allocations cannot be avoided, they shall be based on a physical relationship (e.g., mass, volume, number of outputs) or on an economic relationship as a second alternative.</p> <p>3.4.3. The Organisation shall identify and justify allocation methods.</p> <p>3.4.4. For allocations involving recycled input or recyclable output, the Organisation shall use the recycled content or closed loop approximation method , or a method based on relationships expressed in 3.4.2 or sector/product-specific rules.</p>		<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>N/A <input checked="" type="checkbox"/></p>

4. Carbon footprint summary report		
Requirements	Findings	Conformance
<p>4.1. Requirements for the carbon footprint summary report</p> <p>4.1.1. The Organisation shall summarise the core elements of its GHG emissions methodology and scope. NOTE: The Organisation may use the optional template provided in Annex II for this purpose.</p> <p>4.1.2. The information shall be updated whenever the carbon footprint calculation of products is updated as per 3.3.8.</p>		<p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>N/A <input type="checkbox"/></p>

5. Claims

Requirements	Findings	Conformance
<p>5.1. Requirements for carbon footprint claims</p> <p>5.1.1. The Organisation may make claims about the assessed carbon footprint of products within the scope and where all applicable requirements of this Standard have been followed. The Organisation may use the Standard claim outlined in 5.1.4 or formulate its own claim, following the requirements below.</p> <p>5.1.2. Any claims shall be approved by Preferred by Nature, and information about the time of approval shall be retained.</p> <p>5.1.3. Claims shall:</p> <ul style="list-style-type: none"> a) clearly identify the subject and focus of the declaration, b) identify the organisation responsible for making the declaration, or ensure that this is unequivocally clear, c) include the size of the assessed carbon footprint, d) include the qualifying date, e) not overstate or misrepresent any emissions covered or results. <p>5.1.4. The Organisation may use the following standard claim to communicate the carbon footprint of its products to its buyers and for general reporting on the carbon footprint of products within the scope:</p> <p>"[Organisation name] has measured the carbon footprint of this product to be [xx] kgCO₂e per unit during [assessment period]. The carbon footprint is verified by Preferred by Nature, [month, 20XX]."</p>	<p>N/A for this scope of verification – no certificate</p> <p>Claims should follow the requirements as stated however, as there is no certificate, it is the responsibility of the organization to follow best practices.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>N/A <input checked="" type="checkbox"/></p>