



PRODUCT CARBON FOOTPRINT (PCF) MEASURED STATEMENT OF VERIFICATION

Project number: 4791541815

Issue Date: July 11, 2025

UL has assessed the Product Carbon Footprint (PCFs) for **YIEH PHUI (CHINA) TECHNOMATERIAL Co., LTD.** contracted UL to perform an external independent verification of the Product Carbon Footprint Reports for steel products, March 21st, 2025, by CECEP.

November 2023 to October 2024

1 - Hot Dip Zinc-Coated Steel In Coil (GI)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.05E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.05E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

1.21E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

2.18E+00 kg of CO₂e emissions per 1 metric tonne

2- Hot Dip 55% Al-Zn Coated Steel In Coil (GL)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.33E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.33E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-8.64E-01 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

2.18E+00 kg of CO₂e emissions per 1 metric tonne

3 - Hot Dip 5%Al-Mg-Zn Coated Steel In Coil (GM)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.11E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.11E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

1.70E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Direct Land Use Change (dLUC) GHG emissions and removals:

2.18E+00 kg of CO₂e emissions per 1 metric tonne

4 - Hot-Dip Galvanized Green Steel Sheet In Coil (RC-GI)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

1.31E+03 kg of net CO₂e emissions/removals per 1 metric tonne

UL's Product Carbon Footprint Measured approach is a critical review of the product carbon footprint to ISO 14067. Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines For Quantification. The review meets the criteria of ISO 14071.

The carbon measured program focuses on methodology and is done through a desk assessment of the LCA and footprint report. The verification confirms that the footprint meets the criteria and is not only in compliance with ISO 14067 but also ISO 14040 and ISO 14044 as well as any relevant Product Category Rule.

Net Fossil GHG emissions and removals:

1.31E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-1.35E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

1.23E+00 kg of CO₂e emissions per 1 metric tonne

5 - Hot-Dip 55% Al-Zn Coated Green Steel Sheet In Coil (RC-GL)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

1.59E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

1.59E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-3.88E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

1.55E+00 kg of CO₂e emissions per 1 metric tonne

6 - Hot-Dip Zn-Al-Mg Coated Green Steel Sheet In Coil (RC-GM)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

1.34E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

1.34E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-8.98E-01 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

1.34E+00 kg of CO₂e emissions per 1 metric tonne

7 - Prepainted Hot Dip Zinc-Coated Steel In Coil (PPGI)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.37E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.36E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-3.07E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

6.08E+00 kg of CO₂e emissions per 1 metric tonne

8 - Prepainted Hot Dip 55% Al-Zn Coated Steel In Coil (PPGL)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.65E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.65E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-5.28E+00 kg of Biogenic CO₂e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

6.41E+00 kg of CO₂e emissions per 1 metric tonne

9 - Prepainted Hot Dip 5% Al-Mg-Zn Coated Steel In Coil (PPGM)

Partial (Cradle to Gate) PCF Total Net GHG Emissions and Removals:

3.38E+03 kg of net CO₂e emissions/removals per 1 metric tonne

Net Fossil GHG emissions and removals:

3.37E+03 kg of net Fossil CO₂e emissions/removals per 1 metric tonne

Net Biogenic GHG emissions and removals:

-4.83E-01 kg of Biogenic CO2e emissions per 1 metric tonne

Net Direct Land Use Change (dLUC) GHG emissions and removals:

4.22E+00 kg of CO2e emissions per 1 metric tonne

*note aircraft emissions are negligible and not reported.

Validity Period: July 11, 2025 – July 11, 2030

PCF Verifier	Thomas Gloria Industrial Ecology Consultants	
Project Manager	Skye Tang, UL Solutions	

UL Verification Services Inc.
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**YIEH PHUI (CHINA)
TECHNOMATERIAL CO.,
LTD.**

Project number: 4791541815
Report issue date: July 11, 2025

REVIEW SCOPE

The intent of this review was to provide an independent third-party external verification of a completed carbon footprint of product study report to support the Yieh Phui (China) Technomaterial Co., LTD. nine steel products.

The reviews of the Carbon Footprint of Products studies were performed to demonstrate conformance with the following standards, general program instructions, and product category rules:

- International Organization for Standardization. (2000). *Environmental labels and declarations -- General principles* (ISO 14020:2000).
- International Organization for Standardization. (2006). *Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures* (ISO 14025:2006).
- International Organization for Standardization. (2020). *Environmental management -- Life cycle assessment -- Principles and framework* (ISO 14040:2006/Amd 1:2020).
- International Organization for Standardization. (2020). *Environmental management -- Life cycle assessment -- Requirements and guidelines* (ISO 14044:2006/Amd 1:2017/Amd 2:2020).
- International Organization for Standardization. (2020). *Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification* (ISO 14067:2018).
- International Organization for Standardization. (2024). *Environmental management -- Life cycle assessment -- Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006*. (ISO/TS 14071:2024).
- UL Environment. (2022). *General Program Instructions*. Version 2.7, revised March, 2022.
- CEN 15804:2012+A2:2019+AC:2021 *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*;
- The International EPD System (2024) Product Category Rules (PCR): *PCR 2019:14 Construction products (EN 15804:A2)*, Version 1.3.4, revised April 30, 2024.

The independent third-party verification was conducted by an external expert per ISO/TS 14071:2024:

Thomas Gloria, Ph.D.
Industrial Ecology Consultants

REVIEW & VERIFICATION PROCESS

The review involved the verification based on the requirements set forth by the applicable ISO standards, The International EPD System (2024) Product Category Rules (PCR): *PCR 2019:14 Construction products (EN 15804:A2)*, and UL's General Program Instructions (GPIs). The critical review of the Carbon Footprint of Products project reports identified and categorized all requirements specified by the PCR, GPIs, and applicable ISO standards.

This review did not include an assessment of the Life Cycle Inventory (LCI) of the Carbon Footprint of

Products model, however, it did include a detailed analysis of the individual datasets used to complete the study.

VERIFICATION STATEMENT

Based on the independent verification objectives, the **Product Carbon Footprint Reports** representing the period of performance from **November 2023 to October 2024**:

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot Dip Zinc-Coated Steel In Coil (GI), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot Dip 55% Al-Zn Coated Steel In Coil (GL), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot Dip 5%Al-Mg-Zn Coated Steel In Coil (GM), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot-Dip Galvanized Green Steel Sheet In Coil (RC-GI), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot-Dip 55% Al-Zn Coated Green Steel Sheet In Coil (RC-GL), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Hot-Dip Zn-Al-Mg Coated Green Steel Sheet In Coil (RC-GM), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Prepainted Hot Dip Zinc-Coated Steel In Coil (PPGI), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Prepainted Hot Dip 55% Al-Zn Coated Steel In Coil (PPGL), March 21, 2025 by An Kang

Yieh Phui (China) Technomaterial Co., LTD. Product Carbon Footprint Project Report of Prepainted Hot Dip 5% Al-Mg-Zn Coated Steel In Coil (PPGM), March 21, 2025 by An Kang

were verified to be ***in conformance*** with the applicable ISO standards referenced above, the CEN 15804:2012+A2:2019+AC:2021 Core and The International EPD System (2024) Product Category Rules (PCR): *PCR 2019:14 Construction products (EN 15804:A2)*, and the UL Environment General Program Instructions and are stated in the table below:

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Table 1 PCF Result Information

Product	Total GHGs (Cradle to Gate) (kg CO2-e / metric tonne)	Net Fossil GHGs (kg CO2-e / metric tonne)	Net Biogenic (kg CO2-e / metric tonne)	Net Direct Land Use Change (dLUC) (kg CO2-e / metric tonne)
Hot Dip Zinc-Coated Steel In Coil (GI)	3.05E+03	3.05E+03	1.21E+00	2.18E+00
Hot Dip 55% Al-Zn Coated Steel In Coil (GL)	3.33E+03	3.33E+03	-8.64E-01	2.18E+00
Hot Dip 5%Al-Mg-Zn Coated Steel In Coil (GM)	3.11E+03	3.11E+03	1.70E+00	2.18E+00
Hot-Dip Galvanized Green Steel Sheet In Coil (RC-GI)	1.31E+03	1.31E+03	-1.35E+00	1.23E+00
Hot-Dip 55% Al-Zn Coated Green Steel Sheet In Coil (RC-GL)	1.59E+03	1.59E+03	-3.88E+00	1.55E+00
Hot-Dip Zn-Al-Mg Coated Green Steel Sheet In Coil (RC-GM)	1.34E+03	1.34E+03	-8.98E-01	1.34E+00
Prepainted Hot Dip Zinc-Coated Steel In Coil (PPGI)	3.37E+03	3.36E+03	-3.07E+00	6.08E+00
Prepainted Hot Dip 55% Al-Zn Coated Steel In Coil (PPGL)	3.65E+03	3.65E+03	-5.28E+00	6.41E+00
Prepainted Hot Dip 5% Al-Mg-Zn Coated Steel In Coil (PPGM)	3.38E+03	3.37E+03	-4.83E-01	4.22E+00

Table 2 PCF Results in different life cycle stage of Hot Dip Zinc-Coated Steel In Coil (GI)

The Life Cycle Stage	Unit: kgCO2e/t	Proportion
Raw material acquisition	2.53E+03	82.86%
Transportation	1.67E+02	5.47%
Manufacturing	3.56E+02	11.67%
Total	3.05E+03	100%

Table 3 PCF Results in different life cycle stage of Hot Dip 55% Al-Zn Coated Steel In Coil (GL)

The Life Cycle Stage	Unit: kgCO2e/t	Proportion
Raw material acquisition	2.81E+03	84.35%
Transportation	1.67E+02	5.02%
Manufacturing	3.54E+02	10.64%
Total	3.33E+03	100%

Table 4 PCF Results in different life cycle stage of Hot Dip 5%Al-Mg-Zn Coated Steel In Coil (GM)

The Life Cycle Stage	Unit: kgCO2e/t	Proportion
Raw material acquisition	2.59E+03	83.13%
Transportation	1.67E+02	5.36%
Manufacturing	3.58E+02	11.51%
Total	3.11E+03	100%

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Table 5 PCF Results in different life cycle stage of Hot-Dip Galvanized Green Steel Sheet In Coil (RC-GI)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	7.92E+02	60.38%
Transportation	1.66E+02	12.62%
Manufacturing	3.54E+02	27.00%
Total	1.31E+03	100%

Table 6 PCF Results in different life cycle stage of Hot-Dip 55% Al-Zn Coated Green Steel Sheet In Coil (RC-GL)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	1.05E+03	66.35%
Transportation	1.80E+02	11.33%
Manufacturing	3.55E+02	22.32%
Total	1.59E+03	100%

Table 7 PCF Results in different life cycle stage of Hot-Dip Zn-Al-Mg Coated Green Steel Sheet In Coil (RC-GM)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	8.19E+02	61.19%
Transportation	1.65E+02	12.30%
Manufacturing	3.55E+02	26.51%
Total	1.34E+03	100%

Table 8 PCF Results in different life cycle stage of PrePainted Hot Dip Zinc-Coated Steel In Coil (PPGI)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	2.67E+03	79.22%
Transportation	1.67E+02	4.96%
Manufacturing	5.33E+02	15.83%
Total	3.37E+03	100%

Table 9 PCF Results in different life cycle stage of PrePainted Hot Dip 55% Al-Zn Coated Steel In Coil (PPGL)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	2.97E+03	81.23%
Transportation	1.67E+02	4.56%
Manufacturing	5.19E+02	14.21%
Total	3.65E+03	100%

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Table 10 PCF Results in different life cycle stage of Prepainted Hot Dip 5% Al-Mg-Zn Coated Steel In Coil (PPGM)

The Life Cycle Stage	Unit: kgCO ₂ e/t	Proportion
Raw material acquisition	2.70E+03	79.85%
Transportation	1.67E+02	4.95%
Manufacturing	5.13E+02	15.20%
Total	3.38E+03	100%

*note aircraft emissions are negligible and not reported.

The plausibility, quality, and accuracy of the LCA-based data and supporting information are confirmed.

As the External Independent Third-Party Reviewer, I confirm that I have sufficient knowledge and experience of steel production systems, the relevant PCR, ISO standards and the geographical areas intended to generate Carbon Footprint of Products to carry out this verification.

Sincerely,



Thomas Gloria
Managing Director
Industrial Ecology Consultants

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