

## Life Cycle Assessment Verification Statement

The life cycle inventory and potential environmental impacts of  
**1 kg of Sprayed aluminum alloy profile**

which is made by

### Guangdong Haomei New Materials Co., LTD

Taiji Industrial City, High-tech Industrial Development Zone, Qingyuan City,  
 Guangdong, P.R. China

has been verified meeting the requirements of

### ISO 14044:2006

For the life cycle assessment of product: **cradle to gate**

The results of product life cycle assessment are as follows:

Impact category	Unit	Value
Climate change, short term	kg CO <sub>2</sub> eq	1.41E+01
Climate change, long term	kg CO <sub>2</sub> eq	1.32E+01
Fossil and nuclear energy use	MJ deprived	1.43E+02
Mineral resources use	kg deprived	6.76E-02
Photochemical oxidant formation	kg NMVOC eq	4.32E-02
Ozone layer depletion	kg CFC-11 eq	8.34E-07
Freshwater ecotoxicity	CTUe	1.62E+05
Human toxicity cancer	CTUh	8.56E-08
Human toxicity non-cancer	CTUh	1.92E-07
Freshwater acidification	kg SO <sub>2</sub> eq	2.10E-07
Terrestrial acidification	kg SO <sub>2</sub> eq	1.68E-04
Freshwater eutrophication	kg PO <sub>4</sub> eq	5.92E-05
Marine eutrophication	kg N eq	7.58E-04
Particulate matter formation	kg PM <sub>2.5</sub> eq	9.72E-03
Ionizing radiation	Bq C-14 eq	3.74E+01
Land transformation, biodiversity	m <sup>2</sup> yr arable	1.55E-03
Land occupation, biodiversity	m <sup>2</sup> yr arable	1.84E-01
Water scarcity	m <sup>3</sup> world eq	3.44E+00



Authorized by  
 David Xin  
 Sr. Director –Business Assurance  
 Date: 06 January 2025

SGS-CSTC Standards Technical Services Co., Ltd.  
 16F Century YuHui Mansion, No. 73 Fucheng Road, Beijing, P.R. CHINA 100142  
 t +86 (0)10 58251188 www.sgsgroup.com.cn

SGS has been commissioned by Guangdong Haomei New Materials Co., LTD (hereinafter referred to as “Guangdong Haomei”), Taiji Industrial City, High-tech Industrial Development Zone, Qingyuan City, Guangdong, P.R. China, for the verification of the Life Cycle Assessment (LCA) of product as provided by Guangdong Haomei in accordance with

## **ISO 14044:2006**

### **Roles and responsibilities**

The management of Guangdong Haomei is responsible for the organization’s LCA information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of the LCA of product information and the reported LCA of product.

It is SGS’s responsibility to express an independent LCA verification opinion on the LCA of 1 kg of Sprayed aluminum alloy profile.

SGS conducted a third party verification of the provided LCA assertion against the principles of ISO 14040: 2006 and ISO 14044: 2006 on 2024.12.23 ~ 2024.12.24. The verification was based on the verification scope, objectives and criteria as agreed between Guangdong Haomei and SGS.

### **Level of Assurance**

The level of assurance agreed is that of reasonable assurance.

### **Scope**

Guangdong Haomei has commissioned an independent verification by SGS-CSTC of reported LCA of product of Guangdong Haomei arising from the manufacture of 1 kg of Sprayed aluminum alloy profile product activities, to establish conformance with ISO 14040 principles within the scope of the verification as outlined below.

This engagement covers verification of emission from life cycle of the product of environmental impact included within the organization’s boundary and is based on ISO 14040 and ISO 14044.

- Title or description activities: Life cycle assessment for 1 kg of Sprayed aluminum alloy profile.
- Product Catalog Rule: there was not relevant PCR can be considered.

Statement CN25/00000059, continued

- Functional unit: 1 kg of Sprayed aluminum alloy profile.
- System boundary: Covers a cradle to gate assessment of the life cycle impacts, the system boundary be clearly defined in accordance with ISO 14040:2006 and ISO 14044:2006. All environmental impact's enlisted on IMPACT World+.
- Data resources: The primary data collection from manufacture and own operation phase. The secondary data collection mainly from Ecoinvent database (Version 3.9)
- Life cycle assessment tool and index using:
  - - Software applied Simapro 9.5 version.
  - - IMPACT World+.
- Cut-off rules: For any impact category, if the sum of various impacts from a specific process/activity is less than 1% of the impact equivalent in that category
- Allocation rules:
  - Multi-output: The allocations are based on the changes in the resource consumption and pollutant emissions following the changes in the studied system's output product, or function or economical relationship.
  - Multi-input: The allocation is based on actual relationship. For example, the manufacturing process's emissions may be affected by the change in waste flow input.
- Manufacturing locations: Taiji Industrial City, High-tech Industrial Development Zone, Qingyuan City, Guangdong, P.R. China
- Environmental impacts arising from the life cycle of product included: Sources as presented in the inventory spreadsheet provided by Guangdong Haomei.
- Types of environmental impact is included: IMPACT World+.
- Environmental impacts information for the following production period was verified: 2023.10.01 ~ 2024.9.30, emissions covered the particular period.
- Intended user of the verification statement: Private

## Objective

The purposes of this verification exercise are, by review of objective evidence, to independently review:

- Whether the LCA of product is as declared by the organization's LCA assertion
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

## Criteria

Criteria against which the verification assessment is undertaken are the principles of ISO 14044:2006.

### Materiality

The materiality required of the verification was considered by SGS to 5%, based on the needs of the intended user of the LCA Assertion.

### Conclusion

Guangdong Haomei provided the LCA assertion based on the requirements of ISO 14044:2006. The LCA information of product for the production period from 2023.10.01 to 2024.9.30 are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

The life cycle inventory and potential environmental impacts of 1 kg of Sprayed aluminum alloy profile.

are described as below:

Impact category	Unit	Value
Climate change, short term	kg CO <sub>2</sub> eq	1.41E+01
Climate change, long term	kg CO <sub>2</sub> eq	1.32E+01
Fossil and nuclear energy use	MJ deprived	1.43E+02
Mineral resources use	kg deprived	6.76E-02
Photochemical oxidant formation	kg NMVOC eq	4.32E-02
Ozone layer depletion	kg CFC-11 eq	8.34E-07
Freshwater ecotoxicity	CTUe	1.62E+05
Human toxicity cancer	CTUh	8.56E-08
Human toxicity non-cancer	CTUh	1.92E-07
Freshwater acidification	kg SO <sub>2</sub> eq	2.10E-07
Terrestrial acidification	kg SO <sub>2</sub> eq	1.68E-04
Freshwater eutrophication	kg PO <sub>4</sub> eq	5.92E-05
Marine eutrophication	kg N eq	7.58E-04
Particulate matter formation	kg PM <sub>2.5</sub> eq	9.72E-03
Ionizing radiation	Bq C-14 eq	3.74E+01
Land transformation, biodiversity	m <sup>2</sup> yr arable	1.55E-03
Land occupation, biodiversity	m <sup>2</sup> yr arable	1.84E-01
Water scarcity	m <sup>3</sup> world eq	3.44E+00

SGS's approach is risk-based, drawing on an understanding of the risks associated with reporting the LCA of product information and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the organization's reported LCA of product.

Statement CN25/00000059, continued

We planned and performed our work to obtain the information, explanations and evidence that we considered necessary to provide a reasonable level of assurance that LCA of 1 kg of Sprayed aluminum alloy profile are fairly stated.

We conducted our verification with regard to the LCA assertion of Guangdong Haomei which included assessment of LCA information system, monitoring and reporting plan/protocol. This assessment included the collection of evidence supporting the reported data, and checking whether the provisions of the protocol reference, were consistently and appropriately applied

In SGS's opinion the presented LCA assertion

- is materially correct and is a fair representation of the LCA data and information, and
- is prepared in accordance with ISO14044:2006 on LCA quantification, monitoring and reporting.

This statement shall be interpreted with the LCA assertion of Guangdong Haomei as a whole, this result shall be valid for a maximum period of two years.

Note: This Statement is issued, on behalf of Client, by SGS-CSTC Standards Technical Services Co., Ltd. ("SGS-CSTC") under its General Conditions for Life Cycle Assessment (LCA) Verification Services available at [http://www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm). The findings recorded hereon are based upon an audit performed by SGS. A full copy of this statement, the findings and the supporting LCA Assertion may be consulted at Guangdong Haomei New Materials Co., LTD. (Taiji Industrial City, High-tech Industrial Development Zone, Qingyuan City, Guangdong, P.R. China). This Statement does not relieve Client from compliance with any by laws, federal, national or regional acts and regulations or with any guidelines issued pursuant to such regulations. Stipulations to the contrary are not binding on SGS and SGS shall have no responsibility vis-à-vis parties other than its Client.