

# Product Carbon Footprint Verification Statement

**The Product Carbon Footprint study of  
Carbon steel flange  
which is conducted by**

**SHANXI HONGKAI FORGING CO.,LTD.**

Cuijiazhuang Industrial Park, Shenshan Township, Dingxiang County, Xinzhou City, Shanxi Province, P.R. China

has been verified meeting the requirements of

**ISO 14067:2018**

The carbon footprint of 1 ton of carbon steel flange is  
2961.42 Kilogram of CO<sub>2</sub> e

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



Authorized by  
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SGS-CSTC Standards Technical Services Co., Ltd. (hereinafter referred to as "SGS") has been commissioned by SHANXI HONGKAI FORGING CO.,LTD. (hereinafter referred to as "SHANXI HONGKAI"), Cuijiazhuang Industrial Park, Shenshan Township, Dingxiang County, Xinzhou City, Shanxi Province, P.R. China, for the verification the life cycle Greenhouse Gas emissions of product as provided by SHANXI HONGKAI in accordance with

ISO 14067:2018

#### Roles and responsibilities

SHANXI HONGKAI is responsible for the management of its GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of the life cycle GHG emissions of product information and the reported life cycle GHG emissions of product.

It is SGS's responsibility to express an independent GHG verification opinion on the life cycle GHG emissions of Carbon steel flange.

SGS conducted a third-party verification of the provided GHG assertion against the principles of ISO 14067:2018, ISO 14040:2006 and ISO 14044:2006 in the period from 18 Nov, 2024 to 19 Nov, 2024. The verification was based on the verification scope, objectives and criteria as agreed between SHANXI HONGKAI and SGS.

#### Level of Assurance

The level of assurance agreed is that of reasonable assurance.

#### Scope

SHANXI HONGKAI has commissioned an independent verification by SGS of reported the life cycle GHG emissions of product of Carbon steel flange arising from the manufacture of Carbon steel flange product activities, to establish conformance with ISO 14067:2018 principles within the scope of the verification as outlined below.

This engagement covers verification of emission from partial life cycle of the product of greenhouse gases included within the organization's boundary and is based on ISO 14067:2018.

**Title or description activities:** GHG verification of the life cycle GHG emissions of Carbon steel flange.

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Product Category Rule: there was not relevant PCR can be considered.

Functional unit: 1 ton carbon steel flange

System boundary: Covers a “carbon steel flange” assessment of the life cycle emissions, from raw material extraction to production completion. The system boundary be clearly defined in accordance with ISO 14040:2006, ISO 14044:2006 and ISO 14067:2018.

Use phase: Excluded in system boundary

Retail locations: Excluded in system boundary

Disposal phase: Excluded in system boundary

Data resources: The primary data collection from manufacture and own operation phase. The secondary data collection from Ecoinvent 3.10 and IPCC.

Life cycle assessment tool and index using:

Software applied SimaPro 9 version.

IPCC 2021 GWP values are applied in this inventory.

Cut-off rules: The flow is less than 1% of the cumulative mass of the model it be excluded, providing its environmental relevance is not a concern, a minimum 97% of the total mass for the system is captured.

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 consumption may be affected by the change in recycled resource input.

Manufacturing locations: Cuijiazhuang Industrial Park, Shenshan Township, Dingxiang County, Xinzhou City, Shanxi Province, P.R. China

Emissions and removal of the product system included: please refer to the CFP study reported provided by SHANXI HONGKAI: (CFP study reported of Carbon steel flange, 2024/SXHK/A/0816 - Ver01).

Types of GHGs included: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, Substances controlled by the Montreal Protocol, HFCs, PFCs, Fluorinated ethers, Perfluoropolyether, Hydrocarbons compounds.

Mitigation: There is no GHG emissions off setting used at any point in the life cycle of the product.

GHG information for the following production period was verified: from 1 Jan, 2024 to 30 Jun, 2024, emissions covered the particular period.

Intended user of the verification statement: customer, the public, investors,etc..

## Objective

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

Whether the life cycle GHG emissions and removals of product are as declared by the

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organization's CFP study report;

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 14067:2018.

The IPCC 2021 AR6 GWP values are applied in this assessment of life cycle GHG emissions for the product.

#### Materiality

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

#### Conclusion

SHANXI HONGKAI provided the GHG assertion based on the requirements of ISO 14067:2018. The life cycle GHG information of product for the production period from 1 Jan, 2024 to 30 Jun, 2024 disclosing emissions of 2961.42 Kilogram of CO<sub>2</sub> equivalent, covering a Cradle to Gate system boundary, are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

The life cycle GHG emissions of Carbon steel flange. are described as below:

Life Cycle Phase	GHG Emissions	Unit
Raw material acquisition phase	2565.61	kg CO <sub>2</sub> e
Material transport phase	394.49	kg CO <sub>2</sub> e
Manufacture phase	1.32	kg CO <sub>2</sub> e
Total	2961.42	kg CO <sub>2</sub> e

SGS's approach is risk-based, drawing on an understanding of the risks associated with reporting the life cycle GHG emissions 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 the life cycle GHG emissions of product.

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 the life cycle GHG emissions of Carbon steel flange.

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We conducted our verification with regard to the GHG assertion of SHANXI HONGKAI which included assessment of GHG 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 GHG assertion is materially correct and is a fair representation of the GHG data and information, and is prepared in accordance with ISO 14067:2018 on GHG quantification, monitoring and reporting.

This statement shall be interpreted with the CFP study report of SHANXI HONGKAI (CFP study report of Carbon steel flange, 2024/SXHK/A/0816 - Ver01) and 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") under its General Conditions for Green Gas 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 GHG Assertion may be consulted at SHANXI HONGKAI FORGING CO.,LTD. (Cuijiazhuang Industrial Park, Shenshan Township, Dingxiang County, Xinzhou City, Shanxi Province, P.R. China). This Statement does not relieve Client from compliance with any bylaws, 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.