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**SPECIAL GUIDELINES FOR
CARBON FOOTPRINT SURVEY OF
MARINE PRODUCTS
WINDLASS**

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Foreword

The Special Guidelines for Survey of Carbon Footprint of Marine Products – Windlass by the China Classification Society (hereinafter referred to as "the Society") stipulate the applicable technical requirements for windlass applying for the Society's green additional mark for carbon footprint.

These Guidelines do not restrict users from adopting other requirements, provided that such requirements are not less stringent than those of these Guidelines.

These Guidelines are compiled and updated by the Society and are published at <http://www.ccs.org.cn>. Relevant stakeholders may send feedback on the Society's guidelines to service@ccs.org.cn.

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1 Purpose and Scope

1.1 Purpose

These Guidelines specify the detailed requirements for the approval and survey of the green additional mark for carbon footprint of windlass, and are used in conjunction with the Society's "Guidelines for Survey of Carbon Footprint of Marine Products" (No. Z-12).

1.2 Scope

These Guidelines apply to the approval and survey of product carbon footprint of various electric, hydraulic or manual windlass. They are applicable to newly built windlass, and not applicable to repaired, modified or renovated windlass products.

2 Normative References

2.1 ISO 14067:2018 Greenhouse gases — Requirements and guidelines for the quantification of the carbon footprint of a product

2.2 ISO 14064-3:2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

2.4 China Classification Society Guidelines for Survey of Carbon Footprint of Marine Products

Note: The contents of the above documents constitute indispensable provisions of these Guidelines through normative citation in the text. For dated references, only the edition corresponding to the date applies to these Guidelines; for undated references, the latest edition (including all amendments) applies to these Guidelines.

3 Terms and Definitions

3.1 Fossil Fuel Combustion Emissions

Greenhouse gas emissions generated from the use of fossil fuels as raw materials or fuels.

3.2 Process Emissions

Greenhouse gas emissions caused by physical or chemical changes other than fossil fuel combustion .

3.3 Declared Unit

A reference unit used to quantify part of the product carbon footprint.

3.4 Primary Data

Quantitative values of processes or activities obtained through direct measurement or calculation based on direct measurement.

Note ①: Primary data do not have to come from the studied system, as they may involve other systems comparable to the studied system.

Note ②: Primary data may include greenhouse gas emission factors or greenhouse gas activity data.

3.5 Secondary Data

Data that do not meet the requirements for primary data.

Note ①: Secondary data are data verified by authoritative institutions and with credibility, which can be sourced from databases, published literature, national emission factors, calculated and estimated data or other representative data. The use of localized databases is recommended.

Note ②: Secondary data may include data obtained from alternative processes or estimates.

3.6 Activity Data

Characterization values of the volume of production or consumption activities that result in greenhouse gas emissions.

Note: For example, consumption of various fossil fuels, consumption of carbon-containing raw materials, etc.

3.7 Greenhouse Gas Emission Factor

A coefficient relating activity data to greenhouse gas emissions.

4 Division of Approval Units

4.1 For windlass, approval units shall in principle be divided by the same manufacturer and the same driving type (electric, hydraulic, manual). Special consideration shall be given to windlass

for special purposes, such as polar windlass. windlass from the same manufacturer and of the same product type but produced at different sites shall be regarded as different approval units. The detailed approval scope of products for each approval unit shall be defined in the approval certificate.

4.2 For windlass manufacturers with numerous product series and complex manufacturing processes, application for approval of a representative product series in advance is permitted. After the initial approval is passed, the extended application for other similar product series may be subject to simplified document review and on-site audit procedures by the Society.

5 Implementation

5.1 General Requirements

5.1.1 windlass manufacturers applying for the marine product carbon footprint green additional marks GPC0 and GPC1 shall, in addition to meeting the requirements of these Guidelines, comply with the relevant requirements of the "Guidelines for Survey of Carbon Footprint of Marine Products".

5.1.2 The applicant shall use the CCS platform for the exchange of data and materials.

5.2 Application for Approval

5.2.1 The applicant shall submit an application for the green additional mark for carbon footprint of windlass products, specifying the products involved in the approval, the scope of production sites, boundary conditions (system boundary, time boundary) and other information. At the same time, manufacturers applying for the marine product carbon footprint green additional marks GPC0 and GPC1 shall submit at least the following documents and materials for review:

- (1) Relevant information of the manufacturer and products, including: company profile, organizational chart, product name, model, main technical parameters, applicable standards, main uses, boundary conditions (system boundary, time boundary), etc.;
- (2) Production process (flow);
- (3) List of main energy-consuming equipment, list of metering equipment, list of testing equipment, production capacity information corresponding to the approval cycle, with separate explanations for production at multiple locations;
- (4) Basic information form of products for the approval unit and filing form for key parts/raw materials;
- (5) Measured data of low calorific value and carbon content per unit calorific value of fossil fuels, measured value of carbon content of carbon-containing materials (if applicable);

- (6) Quantitative evaluation report on the carbon footprint of products for the approval unit;
- (7) Other documents specified in 5.2.1 of the "Guidelines for Survey of Carbon Footprint of Marine Products".

If the approval unit already holds a "Carbon Footprint Evaluation Report" issued by an institution with product carbon footprint certification qualification, which covers the above contents, there is no need to submit them repeatedly.

5.2.2 Manufacturers applying for the marine product carbon footprint green additional mark GPC1 shall also submit other documents specified in 5.2.2 of the "Guidelines for Survey of Carbon Footprint of Marine Products".

5.3 Acceptance of Approval

The China Classification Society shall review the approval application and relevant documents submitted by the manufacturer and make a decision on whether to accept the application. The approval application shall be rejected or suspended if one of the following circumstances occurs:

- (1) Failure to meet the conditions specified in 5.2 of the "Guidelines for Survey of Carbon Footprint of Marine Products";
- (2) Fraudulent acts in the relevant documents provided;
- (3) Circumstances where acceptance is not possible in accordance with laws, regulations or other administrative provisions.

5.4 Document Review

5.4.1 The content of document review includes relevant data and supporting materials of the approval applicant, with key focus on:

- (1) Legitimacy of the organizational structure, including the existence and legitimacy of the qualifications of relevant institutions such as the certification client, producer (manufacturer) and production enterprise;
- (2) Confirmation of the declared unit: 1 t (1000 kg) of windlass manufactured and transported to the factory gate, irrelevant to the characteristic parameters of the product in terms of geometry;
- (3) Confirmation of the time boundary: It shall cover a complete production cycle of the product, in principle the most recent consecutive natural year;
- (4) Confirmation of the system boundary: Including procurement of raw materials and parts,

transportation of parts and assemblies, production, final assembly of windlass, testing stage, excluding downstream use, transportation and equipment recycling processes. It shall include at least:

- ① Production and manufacturing of purchased raw materials/parts;
 - ② Manufacturing of self-made parts;
 - ③ Assembly, commissioning and testing of windlass;
 - ④ Transportation and logistics;
 - ⑤ Treatment of waste (wastewater, waste gas, solid waste) in the production process.
- (5) Data selection and cut-off: There are many types of unit process data. Primary data should be appropriately selected and cut off according to internationally recognized or equivalent standards, or according to the principles stipulated below. Omitted greenhouse gas emissions and removals shall be documented in writing:
- ① General solid waste accounting for less than 1% of the total solid waste generated may be ignored;
 - ② The proportion of greenhouse gas emissions in total emissions is less than 1%;
 - ③ The sum of the neglected quality or greenhouse gas emissions does not exceed 5% of the total raw material quality or greenhouse gas emissions;
 - ④ Consumption and emissions of road and factory infrastructure, equipment of each process, on-site personnel and living facilities are all neglected.
- (6) Primary and secondary data related to product carbon footprint, which shall include at least:
- ① Carbon footprint of production and manufacturing of purchased raw materials/parts: Carbon footprint data of purchased parts such as steel, electric motors, reducers, hydraulic systems, control systems, etc.;

Note: The carbon emissions of raw and auxiliary materials need to be provided with corresponding supporting materials by upstream manufacturers, or obtained indirectly according to the consumption of raw and auxiliary materials and relevant greenhouse gas emission factors.

- ② Energy consumption emissions: Emissions corresponding to electricity and heat consumed in the production, assembly and testing processes;
 - ③ On-site logistics emissions: Emissions generated during the on-site transportation of parts and products.
- (7) The results have been verified by the Society or an institution with product carbon footprint certification qualification, with credible data and accurate conclusions.

5.4.2 The primary and secondary data related to product carbon footprint in the "Carbon Footprint Evaluation Report" shall be verified and validated. Data from different data sources shall be cross-checked through supporting materials, and differences between data sources shall be reasonably explainable to ensure that the quantitative values of carbon footprint are reasonable, accurate and traceable.

5.4.3 If the Society determines that the "Carbon Footprint Evaluation Report" does not meet the requirements of these Guidelines, the manufacturer shall clarify the relevant issues, or re-conduct the carbon footprint evaluation and submit the corresponding results until the conclusion is approved by the Society.

5.5 On-site Audit

5.5.1 The content of the on-site audit includes the audit of the relevant management assurance capability and product consistency of the enterprise applying for the carbon footprint green additional mark approval for windlass products. The on-site audit team shall keep records of the verification process for subsequent inspection, including but not limited to:

- (1) On-site verification of operational activities to confirm the consistency of carbon footprint data and information for applicable aspects—such as the name, grade, manufacturer, boundaries and key components, energy and resources (including scrap steel, etc.), and production process of the approved product—with the application documents;
- (2) On-site confirmation of the source and consumption of energy such as electricity and heat;
- (3) On-site confirmation of the power and service time of main energy-consuming equipment, and verification of the consistency and validity of metering instruments with the application documents;

- (4) Focus on verifying relevant documents, records and vouchers related to core unit processes, and sampling original data and information to verify the traceability of data, such as key parts manufacturing, heat treatment, surface treatment, final assembly, testing and other processes in the windlass production stage;
- (5) On-site confirmation of the treatment process of waste (wastewater, waste gas, solid waste) in the production process and the on-site transportation process;
- (6) Interviews and discussions with relevant personnel involved in the systems, procedures and operational controls.

5.5.2 For manufacturers applying for GPC1, if the Society determines that the relevant on-site management systems are not effectively operated, and the sampled documents, records and vouchers are inconsistent with the declared documents, the manufacturer may be required to clarify the relevant issues or re-submit relevant materials.

5.6 Maintenance of Approval

5.6.1 The manufacturer shall regularly confirm the carbon footprint quantification and product consistency, and take necessary measures to avoid unintended use or delivery of the approved products. In case of non-compliance of the carbon footprint quantification and product consistency of the approved products, the manufacturer shall timely feed back to the Society information such as cause analysis, disposal and corrective measures. If necessary, apply to the Society for an additional audit to re-determine the marine product carbon footprint green additional mark of the manufacturer.

5.6.2 The manufacturer shall apply for the periodic audit of the marine product carbon footprint green additional mark every year to maintain the validity of the approval certificate. The audit shall be conducted within 3 months before or after the anniversary of the factory approval certificate.

5.6.3 When necessary, the Society's surveyors may conduct additional audit and verification on the manufacturer to verify the consistency of the product production and inspection with the control requirements confirmed at the time of approval by the Society, and the manufacturer shall cooperate.

5.6.4 The manufacturer shall take measures to ensure that all data collected in the design, procurement, production, inspection and quality control management processes are reliable, complete, consistent and representative.

5.6.5 The manufacturer shall identify and retain important documents and information related to the product carbon footprint label certification, such as carbon emission verification reports, product carbon footprint reports, third-party environmental monitoring reports, enterprise production statements, material balance sheets, lists of inspection and monitoring instruments and equipment, invoices and vouchers for purchased key parts, energy and resources, statistical statements, status information of product carbon footprint label certification certificates (valid,

suspended, revoked, canceled, etc.), approval information of certification changes, product quality and environmental complaints and handling results, and other documents and information related to product carbon footprint label certification.

5.7 Certificates and Additional Mark

5.7.1 For windlass manufacturers that have completed the approval of the marine product carbon footprint green additional mark, the Society shall separately issue a "Marine Product Carbon Footprint Approval Certificate" with a valid period of 5 years.

5.7.2 For windlass manufacturers that have completed the approval of the marine product carbon footprint green additional mark, the approved unit product carbon footprint value shall be indicated in the details of the approval certificate.

5.8 Periodic Audit, Additional Audit and Approval Change

5.8.1 After the approval of marine green products, a periodic audit shall be conducted at least once a year. The specific requirements refer to the periodic audit requirements for approval in Chapter 3, Part 1 of the Society's "Rules for Classification of Sea-Going Steel Ships", with key focus on carbon footprint-related contents, such as verifying whether the approved emission reduction technologies and measures are continuously implemented and effectively operated.

5.8.2 When the Society deems it necessary, it may conduct an additional audit on the manufacturer approved for marine green products by prior agreement or its own decision.

5.8.3 If the quantitative product carbon footprint increases by more than 5% due to planned changes and the situation lasts for more than three months, or increases by more than 10% due to unplanned changes and the situation lasts for more than three months, an additional audit shall be conducted, and an approval change shall be made if necessary.

5.9 Carbon Footprint Survey of windlass

5.9.1 The product survey (single piece/batch survey) after the approval of the marine product carbon footprint green additional mark shall include the following specific items to ensure the stability and traceability of the product carbon footprint:

- (1) Verification of the consistency of production process flow: Confirm that the actual production process is consistent with the process approved at the time of the marine product carbon footprint green additional mark approval;
- (2) Evaluation of the compliance of key raw material/part supply: Verify the changes of suppliers of raw materials/parts that have a major impact on carbon emissions;
- (3) Confirmation of the compliance of carbon footprint data: After the on-site audit is passed by the surveyor, the approved unit product carbon footprint value shall be allowed to be

indicated in the product certificate.

5.9.2 If a product needs to undergo the survey for the marine product carbon footprint green additional mark but has not obtained the approval stated in these Guidelines, the survey shall be conducted in accordance with the relevant requirements of Clause 5 of these Guidelines.

Appendix: Manufacturing Process Flow of windlass

