

ICS 47.080
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 19314.10-2023

**Small craft - Hull construction and scantlings - Part 10: Rig
loads and rig attachment in sailing craft
(English Translation)**

Issued on: May 23, 2023

Implemented on: December 1, 2023

Issued by: State Administration for Market Regulation

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules for Standardization Documents" drafting:

This document is Part 10 of GB/T 19314 "Small Boat Hull Structure and Member Dimensions": GB/T 19314 has issued the following part:

--- Part 1: Materials: Thermosetting resins, glass fiber reinforced plastics, reference

laminates;

- Part 2: Materials: core materials and embedding materials for sandwich structures;
- Part 3: Materials: steel, aluminum alloy, wood, other materials;
- Part 4: Workshop and manufacturing;
- Part 5: Determination of monohull design pressure, design stress and component size;
- Part 6: Structural arrangements and details;
- Part 7: Determination of the dimensions of multihull ships;
- Part 8: Rudder;
- Part 9: Sailing boat possession;
- Part 10: Sailboat sail load and sail accessories:

This document is equivalent to ISO 12215-10:2020 "Small Boat Hull Structure and Member Dimensions Part 10: Sailing Loads and Sail Loads for Sailboats" Attachments":

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

In order to promote the development of my country's small boat industry, it is necessary to carry out the work of formulating small boat standards: At present, in terms of hull structure and component size, on the other hand, through the equivalent adoption of ISO 12215, GB/T 19314 "Small Boat Hull Structure and Component Dimensions" was formulated: GB/T 19314 involves materials Materials, manufacturing, hull design, structural layout, rudder, appendages and sails, etc:

GB/T 19314 consists of 10 parts:

- Part 1: Materials: Thermosetting resins, glass fiber reinforced plastics, reference laminates: Designed to specify glass fiber reinforced plastics and Minimum requirements for the material properties of the resin matrix and laminates made from it:
- Part 2: Materials: core materials and embedding materials for sandwich structures: It is intended to specify the structural core material and the material embedded in the sandwich structure:

General requirements and special requirements for the performance of materials:

- Part 3: Materials: steel, aluminum alloy, wood, other materials: To specify the materials intended to be used in the manufacture of the hull, superstructure and appendages materials, especially the minimum requirements for steel, aluminum alloy, wood, and other

materials:

--- Part 4: Workshop and manufacturing: It is intended to specify workshop conditions, storage and processing of materials, and requirements for the manufacture of boats:

---Part 5: Determination of monohull design pressure, design stress and component size: Specify the design pressure and stress of the boat, as well as the Single-body boat components (including internal How to determine the dimensions of components):

--- Part 6: Structural arrangements and details: The purpose is to provide further explanations of the calculation process and formulas for Part 5, and to provide Use principled structure and detailed examples:

--- Part 7: Determination of multihull size: It is intended to specify the determination of design loads, pressures, stresses and member dimensions of multihull ships:

--- Part 8: Rudder: It is intended to specify the scantlings of the rudders to which small boats are fitted:

--- Part 9: Sailing boat possession: Designed to specify the loads and dimensions of the monohull appendages, including design stresses, structural members to be assessed, the working conditions and design load conditions of the loads on the center plate and keel, calculation methods and model construction requirements, and those that meet the requirements measure:

--- Part 10: Sailboat sail load and sail accessories: Designed to specify the design loads for sail-mounted units on monohull and multihull sailing yachts and methods for determining design stresses, loads and member dimensions of sail attachments and masts/masts:

This document specifies only the minimum requirements in current practice:

Dimensions obtained from this document are obtained when the boat is of good workmanship and equipment and is properly operated at a suitable speed under normal sea conditions:

considered to reflect current practice:

This document is not a design standard, and the designer/builder should strictly avoid designing almost all structural components of the boat that only meet its requirements:

Require:

The connection between the sail attachment and the boat structure is stronger than the sail attachment itself: Therefore, it is necessary to consider that unforeseen additional loads will not Make it separate from the hull and maintain watertight integrity:

Small boat hull structure and member dimensions Part 10: Sail loads and sail accessories for sailing yachts

1 Scope

This document specifies the methods for determining the following indicators of single-hull sailing boats and multi-hull sailing boats:

--- Design load and design stress of the sail unit;

--- Loads and member dimensions of sail attachments and mast mounts/masts:

Also given in the appendix is a "customary" method for evaluating the base plate of the mast/mast and shrouds:

Note 1 to entry: Other engineering methods based on design loads and design stresses can be used for evaluation:

This document applies to boats with a hull length (LH) not greater than 24m, and also applies to boats with a loadline length not greater than 24m:

Note 2: For the definition of the length of load line, see the International Maritime Organization (IMO) "International Convention on Load Lines 1966/2005", its value is less than LH, not exceeding 24m, that is the lower limit value set by the IMO Convention:

The method for determining the size of components given in this document is mainly applicable to recreational boats, including rental boats:

This document does not apply to professional rowing:

This document only considers the load during sailing, and does not consider any loads in other states:

The unit system used in this document, unless otherwise specified, is meter (m) for length, square meter (m²) for area, kilogram (kg) for mass, and kilogram (kg) for force:

Newton (N), moment is Newton-meter (N m), stress and elastic modulus are Newton per square millimeter (N/mm²) (1N/mm²=1MPa):

Unless otherwise specified, the hull under full load condition is evaluated:

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references for documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

ISO 12215-5:2019 Small boat hull structure and member dimensions Part 5: Monohull design pressure, design stress, member dimensions Note: GB/T 19314.5-2019 Small boat hull structure and component size Part 5: Determination of monohull design pressure,