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

GB 12327-2022

Specifications for hydrographic survey

海道测量规范

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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 of Standardization Documents" drafted. This document replaces GB 12327-1998 "Code for Hydrographic Surveying". Compared with GB 12327-1998, except for structural adjustments and editorial changes. In addition, the main technical changes are as follows:

- a) The scope of application of this document has been changed (see Chapter 1, Chapter 1 of the 1998 edition);
- b) a chapter on Terms and Definitions was added (see Chapter 3);
- c) Added the classification of bathymetry grades, divided the bathymetry into five grades from the first to the fifth grade, and specified the corresponding seabed cover Cover requirements and detection obstacle size requirements (see 4.4.2);
- d) The technical requirements for triangulation are deleted (see 5.2.5.4.1 of the 1998 edition);
- e) Deleted circle
---circle positioning, hyperbola positioning, etc. [see

1 Scope

China's mandatory specifications for hydrographic survey. Hydrographic survey is the measurement of the sea floor and everything on it, and it is the foundation of every nautical chart, port design, dredging contract and offshore installation. The requirements it has to meet are unlike those of land survey in one decisive respect: the surveyor cannot see what is being measured, and a rock that is missed is not a gap in the data but a hazard that will be charted as clear water. That is why the specification is built around coverage and uncertainty rather than around point accuracy - the survey order that applies in a given depth and traffic density, the required percentage of sea floor insonified, the horizontal and vertical uncertainty permitted at a stated confidence, the calibration of the echo sounder

and the motion sensors, and the tidal reduction that turns a measured depth into a charted one.

This document specifies the basic content, measurement methods, accuracy indicators and technical requirements of hydrographic surveying, and describes the corresponding inspection, comparison and evaluation. estimation method. This document is applicable to hydrographic surveys of various scales in my country.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB 12319 Chinese nautical charts

GB/T 12898-2009 National third and fourth level leveling standards

GB/T 17942-2000 National triangulation specification

GB/T 18314-2009 Global Positioning System (GPS) Measurement Specification

GB/T 20257.1-2017 National Basic Scale Map Schema Part 1.1.500 1.1000 1.2000
Topography diagram schema

GB/T 20257.2-2017 National Basic Scale Map Schema Part 2.1.5000 1.10000 Topographic
Map Schema

GB/T 20257.3-2017 National Basic Scale Map Schema Part 3.1.25000 1.50000 1.100000
topographic map

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 hydrographic survey With the main purpose of ensuring the safety of navigation, in order to obtain information on the seabed topography, landform, sediment, navigation aids and navigation obstacles, etc. including inland waters) and coastal features. It mainly includes control survey, bathymetry survey, coastal topographic survey, etc. [Source: GB/T 39619-2020, 2.1, with modifications]

3.2 bathymetry sounding Measurement techniques and methods for determining the vertical distance from a point on the water surface to the bottom and the plane position of the point. [Source: GB/T 39619-2020, 2.6]

3.3 sweeping survey sweepingsurvey A measurement of ground-like detection of a specific sea area to find out if there are navigational obstacles in that area or to determine

navigable water depths. [Source: GB/T 39619-2020, 2.15, with modifications]

6.2.1.1

- c) d), 6.2.4, 6.2.5, Appendix M of the.1998 edition];
- f) The technical requirements for manual work have been deleted (see 6.9.6 of the.1998 edition);
- g) Deleted the contents of analog water level correction and outdated instruments and equipment (see 5.2.4.1 of the.1998 edition);
- h) Added the technical requirements for GNSS control measurement (see Chapter 8);
- i) Changed the contents of water level control, sweeping survey, hydrological observation, sediment detection, etc. (see Chapter 9, Chapter 11, Chapter 12, Chapter 13, Chapter 6 of the.1998 edition);
- j) Added the technical requirements for depth measurement without tide (see 9.3.1, 10.1.3, 10.4.6.6, 10.4.7, 10.5.2.2);
- k) Added technical requirements for airborne laser sounding (see 10.1.1, 10.1.6, 10.4.1.3, 10.4.2.4, 10.4.3.7, 10.4.3.8, 10.5.4);
- l) Changed the requirements for the over-limit ratio of the main inspection of the bathymetric survey (see 10.1.9, 6.3.6.7 of the.1998 edition);
- m) Added technical requirements for sound velocity profile measurement (see 10.4.5.2, 10.4.5.3, 10.4.5.4, 10.4.5.5);
- n) Added a new sweeping measurement technique method (see 11.3, 11.4, 11.6, 11.7);
- o) Deleted the technical requirements for bid creation (see Appendix A1 of the.1998 edition);