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

GB 17501-1998

Replacing GB/T 17501-1998

**Specification for marine engineering topographic surveying
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 17501-1998 "Specifications of oceanographic topography."

This standard compared with GB/T 17501-1998 main the technical changes are as follows.

--- Modify the provisions of marine engineering topographic survey content (1998 edition of Chapter 1, Chapter 1 of this edition);

--- Increased ocean engineering topographic survey, coastline, 2000 national geodetic coordinate system, 1985 national elevation standards and other terms and definitions (See Chapter 3);

--- Modify the general plan used in the reference plane coordinate system, the national coordinate system is changed to 2000 National Geodetic Coordinate System (See 4.3.1, 1998 version 4.3.1);

--- Modify the general provisions of the plane control measurement, delete the three-sided measurement and GPS measurement of the specific content to use the global navigation Satellite system positioning measurements; (see 6.1, 1998 version 6.1);

--- Modify the plane control measurement photoelectric distance measurement wire measurements, the requirements of triangulation (see 6.1.6.6.1.7, 1998 edition 6.1.5, 6.1.6);

--- Modify the plane control measurement points and burial, horizontal angle observation, distance measurement, plane control measurement results record and organize Adjustment

of the specific requirements of the calculation, the deletion of the triangulation test, trilateration test and wire measurement check, instead cited Relevant parts of GB 50026 (see 6.2, 6.3, 6.4, 6.5, 1998 edition 6.2, 6.3, 6.4, 6.5);

--- Modify the general provisions of elevation control measurements (see 7.1, 1998 version 7.1);

--- Modify the elevation control measurement level measurement, photoelectric distance measurement triangular elevation measurement requirements, delete the specific content, press to press GB 12898 requirements (see 7.2, 7.3, 1998 edition of 7.2, 7.3);

--- Removed the GPS level of the relevant content (1998 version 7.5);

--- Added GNSS level measurements (see 7.5);

--- Modify the navigation and positioning of the general provisions of the microwave ranging and GPS ranging to GNSS and polar coordinates positioning Act, the control point selection requirements have been changed (see 8.1, 1998 version 8.1);

--- Remove the microwave ranging positioning system positioning, GPS positioning (1998 version of 8.2, 8.3);

--- Added GNSS positioning, polar positioning, underwater acoustic positioning, navigation software (see 8.2, 8.3, 8.4, 8.5);

--- Modify the measurement requirements of working level in depth measurement (see 9.1.6.3, 1998 version 9.1.6.3);

--- Increased use of GNSS tide survey water depth technical requirements (see 9.1.10);

--- Modify the technical requirements for depth measurement (see 9.2, 1998 version 9.2);

--- Modify the sounding positioning technical requirements (see 9.3, 1998 version 9.3);

--- Increasing the requirements of the analog records for inspection and finishing (see 9.5.4.1);

--- Increasing the technical requirements for draft correction (see 9.5.5.1);

--- Modify the technical requirements for dynamic draft correction (see 9.5.4.3, 1998 version 9.5.5.3);

--- Modify the production of the topographic map, the drawing of the water depth map to the topographic map production (see 9.6, 1998 version 9.6);

--- Removed the production of the original measurement (1998 version 9.7);

--- Modify the requirements of computer-aided mapping (see 9.7, 1998 version 9.8);

--- Modify the general provisions of coastal topography (see 10.1.1, 1998 edition 10.1);

- Modify the coastal topographic survey in the Ministry of debris measurement method, instead of using the total station polar coordinate method, the global navigation satellite system real-time motion State measurements, continuous operation of the base station network method for measurement (see 10.2, 1998 version 10.2);
- Increased the definition of the coastline (see 10.3.1);
- Modify the coastline measurements, the specific requirements of dry beach measurements (see 10.3, 10.4, 1998 version 10.3, 10.4);
- Modify the technical design of seafloor scanning, implementation, the contents of information (see 11.2,11.3,11.4,1998 version 11.2, 11.3, 11.4);
- Modify the inspection and acceptance, the results of the relevant content (see Chapter 12, Chapter 13, 1998 version 12.1,12.2,12.3);
- Modify the sea level leveling joint calculation formula (see Appendix A, 1998 edition of Appendix A);
- Modify the water level observation of a good date selection formula (see Appendix B, 1998 version of Appendix B);
- Modify the average sea level and depth of the reference plane to determine the formula (see Appendix C, 1998 version of Appendix C);
- Modify the sound velocity correction formula (see Appendix D, 1998 edition of Appendix D).

This standard proposed by the State Oceanic Administration.

This standard by the National Marine Standardization Technical Committee (SAC/TC283) centralized.

1 Scope

This standard specifies the general principles of marine engineering topographic survey, technical design, measurement content, technical methods, inspection and acceptance results and other information Claim.

This standard applies to marine engineering 1. 500 ~ 1. 50000 scale topographic survey.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB 12319 China chart plans Code for measurement of seaways GB 12327-1998 GB/T

12898 national third and fourth level measurement standards GB/T 18314 global positioning system (GPS) measurement specifications GB/T 20257.1 National basic scale map schema Part 1 .1. 500 1. 1000 1..2000 Topographic map schema GB/T 20257.2 National basic scale map schema Part 2. 1. 5000 1. 10000 topographic map GB/T 20257.3 National basic scale map schema Part 3. 1. 25000 1. 50000 1. 100,000 Topographic map Quality inspection and acceptance of surveying and mapping results Engineering measurement specification Global Positioning System Real Time Dynamic Measurement (RTK) Specification

3 Terms and definitions

The following terms and definitions apply to this document.

Marine engineering topographic survey marineengineeringtopographicsurveying Submarine topography and submarine surface obstructions needed for coastal, offshore and reef projects.

Coastline

The average tide when the sea surface and land boundaries.

Note rewrite GB/T 15918-2010 definition 2.3.10.

2000 National Geodetic Coordinate System China geodetic coordinate system 2000; CGCS2000 Using 2000 reference ellipsoid, the origin in the right-handed geocentric solid-angle coordinate system. Z axis is the reference polar direction of International Earth Rotation Bureau, X.

Axis is the intersection of the reference meridional plane of the International Earth Rotation Bureau and the equatorial plane perpendicular to the Z axis, and the Y axis and the X axis form a right-handed orthogonal coordinate system.

[GB/T 14911-2008 definition 2.32] 3.4

1985 National Elevation Datum Promulgated in 1987, using the origin of the Qingdao standard and based on tide-tidal data from 1952 to 1979 at Qingdao tide gauge station