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

GB/T 17503-2009

Replacing GB 17503-1998

**Specifications for offshore platform site engineering geology
investigation**

海上平台场址工程地质勘察规范

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1 Scope

China's national specification for the engineering geological investigation of an offshore platform site. It specifies the content, the methods and the technical requirements of site investigation for offshore platforms, and the preparation of the results and the archiving of the data. It applies to the site investigation of fixed pile-founded platforms, gravity platforms and jack-up rig locations, and may be referred to for other fixed offshore structures. An offshore platform transfers a very large load into the seabed through a small number of points, in a place where the soil cannot be inspected, the structure cannot be underpinned and the consequences of a foundation failure are total. The investigation is therefore the only opportunity to find out what the structure will be founded on, and it has to answer specific questions rather than describe the ground in general. For a piled platform: how deep must the piles be driven for the required axial and lateral capacity, and will they drive at all - refusal on a hard layer part-way down is a project-stopping event offshore. For a gravity structure: the bearing capacity, the settlement and the sliding resistance of the surface soils, and whether they will liquefy. For a jack-up: whether the spudcans will punch through a stiff layer into soft soil beneath, which is the characteristic and catastrophic failure of that unit type. The specification sets the general requirements, the navigation and positioning, the geophysical survey, seabed sampling, geological drilling, in situ testing including the cone penetrometer with pore pressure measurement, vessels and laboratory soil testing, the measurement of corrosive environmental parameters, seismic safety evaluation, and the maps and reports. Normative annexes give a unified soil classification and naming system and a pile-soil load and displacement analysis system. Issued on 30 October 2009 and in force since 1 April 2010, it replaces GB 17503-1998.

This standard specifies the contents of the offshore platform engineering geology investigation, methods and technical requirements, the results of reporting and data archiving. This standard applies to fixed offshore platform pile, gravity offshore platforms,

offshore engineering geological survey from jack-up rig sites, other sea Engineering geological survey on the fixed structure can refer to the use of the site.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 12327-1998 Hydrographic Specification

GB/T 12763.6-2007 oceanographic survey - Part 6. Marine Biological Survey

GB/T 12763.8-2007 oceanographic survey - Part 8. Marine Geology Geophysical Survey

GB/T 17424-1998 Differential Global Positioning System (DGPS) technology requirements

GB 17501-1998 marine engineering topographic surveying Specification

GB 17741-2005 project site seismic safety evaluation

GB 50021-2001 investigation of geotechnical engineering

GB/T 50123-1999 standard soil test method

GB/T 50269-1997 Foundation Dynamic Properties Test Specification SY/T 10030-2004 fixed offshore platform planning, design and construction practices recommended working stress design method ASTM D2487-2006 soil engineering classification criteria (Unified Soil Classification System) ASTM D5778-1995 soil type and pore pressure measuring probe penetration test standard

3 Terms and Definitions

The following terms and definitions adapted to the present standard.

3.1 Rely on the support piles driven into the seabed offshore platform. NOTE. The number and type of pile can be divided into groups pile, legs and column Jacket three.

3.2 Rely on a number of reinforced concrete or steel structure consisting of a large cylinder base (mat) supported offshore platform. NOTE. Usually from the base, the leg poles, steel deck and the deck assembly modules and other components.

3.3 Relying on its support leg to stand on the seabed offshore platforms. NOTE. by its own hydraulic lifting system makes the lifting platform to achieve its place or evacuate.

3.4 Sea shoreline to a depth of 20m.