ICS 47.020.05
CCS U 05

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 45900-2025

Test method of buoyancy material and modules properties for manned submersible

载人潜水器用浮力材料和构件性能测试方法

Issued on: June 30, 2025 **Implemented on: January 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

Table of Contents

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 is required.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document is proposed and coordinated by the National Technical Committee for Standardization of Submersibles (SAC/TC 306).

This document was drafted by: China Ship Science Research Center, Technical Institute of Physics and Chemistry of the Chinese Academy of Sciences, China Shipbuilding Industry Corporation Limited The 710th Research Institute of the Company and the Marine Chemical Industry Research Institute Co., Ltd.

The main drafters of this document are: Shi Dongchun, Hu Zhen, Ye Cong, Zhang Jingjie, Dong Weiyun, Zhao Wei, Jiang Xuyin, Wang Xuan, Yang Shenshen, Yan Kaiqi, Zhai Xiaokang, Ye Bin, Pan Shunlong, Li Wenyue, Wang Qingying, and Gao Jianzhou.

Performance of buoyancy materials and components for manned submersibles Test Method

1 Scope

This document specifies the requirements, test items and test methods for performance testing of buoyancy materials and components for manned submersibles.

This document is applicable to the performance evaluation test and product inspection of buoyancy materials and components for manned submersibles. Other underwater

structures shall refer to this document. use.

2 Normative references

GB/T 1804-2000

GB/T 2567-2021

GB/T 13407

ISO 21173

3 Terms and Definitions

Terms and definitions defined in ISO 21173 2019, GB/T 13407 and Rules for Classification of Diving Systems and Submersibles (2018) and the following The definitions apply to this document.

3.1 Buoyancy material

The resin type material is made of hollow microspheres mixed with epoxy resin, which is made through a specific mold and molding process to retain the material Standard blocks with uniform and stable performance and no surface coating.

3.2 Buoyancy material module

Various modules or components are made from standard blocks of buoyancy materials by bonding and machining.

Note. It includes embedded parts, waterproof and impact-resistant coatings, referred to as buoyancy blocks.

3.3 embedded parts

It is pre-buried inside the buoyancy block, firmly connected to the buoyancy block, and is a corrosion-resistant, high-strength metal or non-metal part.

3.4 water absorption of buoyancy material

A physical quantity that measures the degree of water absorption by buoyant materials under simulated deep-sea environmental conditions.

Note. Expressed as mass change rate.