

ICS 03.220.40

CCS R09



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

GB 28396-2012

The safety requirement for mixed gas diving

混合气潜水安全要求

Issued on: June 29, 2012

Implemented on: May 1, 2013

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

All technical contents of this standard is mandatory. This standard was drafted in accordance with rules GB/T 1.1-2009 given. This standard reference Association of Diving Contractors International "business diving and underwater accepted standards" (fifth edition, 2004) and the International Maritime contractors Association "international practice for offshore diving" (1998), "the water supplied-air mixed gas diving operations" (2005) and "The Diving equipment and systems checks Guide. the water supplied-air mixed gas diving systems "(2006), and the US Department of Labor Occupational Safety and Health Administration" Occupational Safety and Health Standards " (1996) and "Maritime Occupational Safety and Health Standards" (1989) of the US Department of Homeland Security Coast Guard to develop relevant content. The standard proposed by the People's Republic of China Ministry of Transport. This standard and underwater engineering Standardization Technical Committee by the Ministry of Transport salvage. Drafted by: Ministry of Transport Shanghai Salvage Bureau, Shenzhen City Industrial Co., Ltd. Ye Shan. The main drafters. Zhang Hui, leaves like Qiu, Xiao Xiaoling, Pan Mingguang, Liu Muliang, Xu Jin, Guo Xiaoping, Zhang Lei, Li Song, Liu Yuan. Mixed gas diving safety requirements

1 Scope

GB 28396-2012 is the Chinese national standard on the safety requirement for mixed gas diving, in the field of services and company organization. It carries no /T suffix, which in the

Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 29 June 2012 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 May 2013. Classification: ICS 03.220.40, CCS R09. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies to Heliox medium supplied air respiratory gas mixing diving personnel, equipment and systems, and work processes Required sequence. This standard applies to a shallow diving depth of 120m Heliox diving, it is also applicable to exposure to less than 1.2MPa heliox Analog dive.

2 Normative references

The following documents for the application of this document is essential. For dated references, only applies to the version dated paper Pieces. For undated references, the latest edition (including all amendments) applies to this document. GB 4844.2 pure helium

GB 8982 breathing oxygen for medical and aerospace

GB 20827 professional diver medical examination requirements

GB 26123-2010 Safety requirements for air diving 3 terms, definitions and abbreviations

3.1 Terms and Definitions

GB 26123 determined following terms and definitions apply to this document. 3.1.1. Heliox diving helioxdiving Use of heliox as a man made diving breathing gas, does not include helium-oxygen saturation diving. 3.1.2. Closed diving bell closedbel A shipping diver carrying the device serving between the surface and underwater sites, which can be closed bell body, and with the deck decompression chamber Docking.

3.1.3 Helium Voice heliumspeech Abnormal breathing during speech containing helium gas mixture. Wherein the voice fundamental frequency and the resonance frequency increases, timbre changes, was nasal, intelligibility reduce.

3.2 Abbreviations The following abbreviations are applicable to this document. BIBS

--- built-contained breathing apparatus (built-inbreathingsystem) JSA

--- Job Safety Analysis (jobsafetyanalysis) PTW

--- Work Permit (permittowork)

4 personnel requirements

Heliox divers, including divers, diving supervision, diving care staff, prepare diver, diving radio operator, life-support staff, latent Water diving medical technician and the physician, with its training, qualification and management should comply with the relevant requirements of the competent authorities. Or to be engaged in underwater operations into The high pressure environment of the physical conditions of personnel should meet the requirements of GB 20827.

5 device and system requirements

5.1 Personal harness GB 26123-2010

5.1.1 should be consistent with the relevant requirements of 5.1.1 - 5.1.11.

5.1.2 Emergency filling gas cylinders shall Heliox.

5.2 Umbilical cord and hose GB 26123-2010

5.2.1 should be consistent with the relevant requirements of 5.2.

5.2.2 should meet the requirements of the transport heliox.

5.2.3 transporting oxygen concentration of 25% or more of heliox should be treated with an oxygen hose predetermined.

5.3 Supply system

5.3.1 shall comply with the relevant requirements of GB 26123-2010 in 5.3.

5.3.2 shall comply with the following requirements.

- a) The gas distribution conditions, a special apparatus is provided with oxygen filling pumps, compressors and other film;
- b) storage vessels and pipelines dedicated;
- c) the conveying pipe is provided with special identifier;
- d) storing and transporting more than 25% oxygen concentration Heliox containers and pipes according to a predetermined treatment with oxygen;
- e) pumping the heliox film can not pump air compressor;
- f) pumping oxygen pneumatic booster pump should be used exclusively.

5.4 Deck decompression chamber

5.4.1 shall comply with the relevant requirements of GB 26123-2010 5.4.

5.4.2 Maximum operating pressure should not be less than the maximum diving depth of

pressure.

5.4.3 diver should have treatment gas supply pipes heliox and connected to the cabin BIBS.

5.4.4 should be equipped with a helium voice aligner.

5.4.5 When the need butt and diving bell should be equipped with a docking ring channel and connection card. Dive Control Panel 5.5

5.5.1 should be consistent with GB 26123-2010 relevant requirements of 5.5.

5.5.2 are connected to the mixture gas should have primary air, air supply and air interfaces emergency air supply.

5.5.3 shall be provided with online oxygen analyzer.

5.6 into the water system

5.6.1 present system into effluent standards referred diving cage, open and closed diving bell diving bell.

5.6.2 diving cage GB 26123-2010 should meet the requirements of

5.6.2 and 5.6.4, should have more than two heliox should Emergency gas cylinders, which can meet the volume requirements of the divers stay 30min maximum diving depth. It should also be equipped with one or more emergency air cylinders.

5.6.3 open diving bell should meet the relevant requirements GB 26123-2010

5.6.2 and 5.6.5, should have two or more Heliox Emergency gas cylinders, which can meet the volume requirements of the divers stay 30min maximum diving depth. It should also be equipped with an emergency air above gas bottle. With promising diver supply and ventilation in the upper bell Heliox and air supply valve.

5.8 Communication System

5.8.1 shall comply with the relevant requirements of GB 26123-2010 in 5.8.

5.8.2 dive diver supervision and communication between the diver preparation should be consistent with the helium voice correction requirements.

5.9 Electrical System Shall comply with the relevant requirements of GB 26123-2010 in 5.9. Equipment and instrumentation

5.10 Shall comply with the relevant requirements of GB 26123-2010 in 5.10.

6 operating procedures required

6.1 scene files Shall comply with the relevant requirements of GB 26123-2010 in 6.1.

6.2 Emergency rescue and first aid Shall comply with the relevant requirements of GB 26123-2010 in 6.2.