

ICS 25.160.01

CCS J 33



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

GB/T 44527-2024

**Qualification testing of diver-welders and welding operators for
underwater hyperbaric dry welding
(English Translation)**

Issued on: September 29, 2024

Implemented on: April 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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References

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.

This document is modified to adopt ISO 15618-2:2001 "Underwater welding - Qualification tests for welders - Part 2: Tests for high-pressure dry welding by divers" Welders and Welding Operators.

This document has the following structural adjustments compared to ISO 15618-2:2001.

-- Added Appendix A (informative) Guidance on classification of steel groups;

--Appendix B corresponds to Appendix A in ISO 15618-2:2001;

-- Appendix C corresponds to Appendix B in ISO 15618-2:2001, where C.2 corresponds to B.2 in ISO 15618-2:2001, and adds C.2.2;

--Appendix C corresponds to Appendix B in ISO 15618-2:2001, where C.2.3 corresponds to B.2.2 in ISO 15618-2:2001.

Added C.2.3.3.

The technical differences between this document and ISO 15618-2:2001 and their reasons are as follows.

-- The scope of the standard was summarized and the expression was adjusted (see

Chapter 1) to facilitate the practical application of the standard;

-- Added normative references to GB/T 19866-2005 and deleted EN 228-1 (see Chapter 3); added normative references to GB/T 3375, deleted ISO 857-1 (see 5.2); added normative references to GB/T 5185, deleted EN ISO 4063 (see 5.2, Chapter 12); add the normative reference GB/T 5117, delete EN 499 (see 5.5.2); use normative reference GB/T 983 replaces ISO 3581, deletes EN 1600 (see 5.5.2); adds normative references to GB/T 16672, Deleted EN ISO 6947 (see 5.7, 6.7, Chapter 12); added normative reference GB/T 19867.1, deleted EN 228-2 (see 7.4, Chapter 11); add normative references GB/T 32259, delete EN 970 (see 7.5); add normative references GB/T 26951, deleted EN 1290 (see 7.5); added normative references to GB/T 18851.1, deleted EN 571-1 (see 7.5); added normative references to GB/T 26955, deleted EN 1321 (see 7.5, 7.6.3); added normative references GB/T 11345 of 2016 deleted EN 1714 (see 7.5, 7.6.4); GB/T 3323.1-2019 of 2017 added normative references, deleted in addition to EN 1435 (see 7.6.2), GB/T 27551 is added as a normative reference, and EN 1320 (see 7.6.2, 7.6.3, 7.6.5); Added normative reference GB/T 2653, deleted EN 910 (see 7.6.2, 7.6.4); Added normative reference GB/T 19418, deleted prEN ISO 5817 (see Chapter 8);

-- The requirements for the use of symbols and abbreviations have been redefined (see 4.1) to facilitate the practical application of the standard;

--Laser welding (see 5.2) has been added to the main parameters of skill assessment to meet my country's technical requirements;

--Added the scope of approval for solid welding wire (see 6.5) to adapt to my country's technical requirements.

The following editorial changes were made to this document.

--Change the name of the standard to "Skill Assessment for Underwater High-Pressure Dry Welding Diving Welders and Welding Operators";

--The schematic diagram was redrawn and some of the decorative notes on the schematic diagram were deleted;

--Deleted the reference to CR ISO 15608 and added Appendix A (Guide to Steel Group Classification) based on its reference content (see 5.4) to facilitate the implementation of the standard;

-- Deleted the redundant modifying expressions in Chapter 11 to facilitate the practical application of the standard;

--Deleted the examples in Chapter 12 to facilitate the practical application of the standard;

--Added content about laser welding in Appendix C (Professional Knowledge) (see C.2.2 and C.2.3.3) to facilitate the practical application of the standard.

1 Scope

This document specifies the main parameters, scope of approval, tests and Inspection, test piece acceptance requirements, re-examination, validity period, certificate and underwater high-pressure dry welding diving welder and welding operator examination approval mark.

This document is applicable to the skill assessment of underwater high-pressure dry welding diving welders and welding operators.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 983 Stainless steel welding rods (GB/T 983-2012, ISO 3581:2003, MOD) GB/T 2653 Welded joint bend test method (GB/T 2653-2008, ISO 5173:2000, IDT) GB/T 3323.1-2019 Non-destructive testing of welds - Radiographic testing - Part 1: Film techniques for X-ray and gamma-rays (ISO 17636-1 1.2013,MOD) GB/T 3375 Welding terminology GB/T 5117 Welding rods for non-alloy steel and fine grain steel (GB/T 5117-2012, ISO 2560:2009, MOD) GB/T 5185 Welding and related process code (GB/T 5185-2005, ISO 4063:1998, IDT) GB/T 11345 Ultrasonic testing technology, testing levels and assessment for non-destructive testing of welds (GB/T 11345-2023, ISO 17640.

2018, IDT)

GB/T 16672 Definition of inclination and rotation angle of weld working position (GB/T 16672-1996, ISO 6947:1990, IDT) GB/T 18851.1 Nondestructive testing-Penetrant testing-Part 1: General principles (GB/T 18851.1-2012, ISO 3452 - 1.

2008, IDT)

GB/T 19418 Guide to quality classification of defects in arc welded steel joints (GB/T 19418-2003, ISO 5817:1992, IDT) GB/T 19866-2005 General principles for welding procedure specification and qualification (ISO 15607:2003, IDT) GB/T 19867.1 Arc welding procedure specification (GB/T 19867.1-2005, ISO 15609-1:2004, IDT) GB/T 26951 Non-destructive testing of welds - Magnetic particle testing (GB/T 26951-2011, ISO 17638:2003, MOD) GB/T 26955 Destructive testing of welds on metallic materials Macroscopic and microscopic examination of welds [GB/T 26955-2011, ISO 17639.

2003 (E), MOD]

GB/T 27551 Destructive testing of welds on metallic materials - Fracture test (GB/T