



DPC: 24/30456833 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

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Interested committees:

Title: Draft BS ISO 16259 Ships and marine technology — Performance test procedures of LNG BOG re-liquefaction system on board a ship.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 16259

Ships and marine technology — Performance test procedures of LNG BOG re-liquefaction system on board a ship

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ISO/TC 8/SC 25

Secretariat: **ANSI**

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Voting terminates on:
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This document is circulated as received from the committee secretariat.

IMPORTANT — Please use this updated version dated 2024-05-03, and discard any previous version of this DIS. The committee was changed from ISO/TC 8/WG 8 to ISO/TC 8/SC 25

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ISO/DIS 16259:2024(en)

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Working Group WG 8, *Liquid and gas fueled vessels*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Shipbuilding and marine industry have been growing interest in the use of LNG to meet the getting stricter international, regional, national harmful gas emission regulation. One of the main LNG vessel system equipment is LNG BOG re-liquefaction system since it can change natural gas to liquefied natural gas. Thus the LNG ship can save fuel consumption and also contribute to marine environmental protection.

The LNG fueled vessel or bunkering vessel is to be designed and manufactured according to the requirements of international recognized standards such as IMO IGF and IGC Codes. However no internationally recognized standard in terms of the performance testing of LNG BOG re-liquefaction system on board a ship has yet been established. Thus LNG BOG re-liquefaction system is tested according to a case-by-case agreement between the owner and manufacturer. For this reason, there have been needs to establish an objective document for performance test method of LNG BOG re-liquefaction system on board a ship that is commonly acceptable to all stakeholders. (e.g. ship owners, classification societies, equipment manufacture and shipyards etc.)

In this regard, this document is to set up a performance test procedure for the LNG BOG re-liquefaction system on board a ship. With this document, it is expected that i) the performance of LNG BOG re-liquefaction system can be identified from an objective point of view ii) useful guideline can be provided to all stakeholders iii) development of more reliable LNG BOG re-liquefaction system can be facilitated. These would contribute to the growth of relevant industries and benefit to all stakeholders.

It is flexible so that it can be applied in many situations and under various regulatory regimes as long as the requirements of the document are met. In addition, either IACS or administrations, or both requirements can apply to LNG BOG re-liquefaction system performance test concerned so it is recommended that the additional requirements to this document also be observed. The LNG BOG re-liquefaction system provider and ship owner are expected to agree on any additional applicable requirements.

Ships and marine technology — Performance test procedures of LNG BOG re-liquefaction system on board a ship

1 Scope

This document specifies test requirements and procedures for the performance test that are conducted in order to confirm the mechanical features of the LNG BOG re-liquefaction system on board a ship. This test procedure would be prepared to document the function and safety processes required by international standards and/or any administration for LNG BOG re-liquefaction system of LNG ships such as LNG carrier, LNG bunkering vessel, LNG fueled vessel. Functions that are specific to a manufacturer and any additional tests or specification required by client would not be included. This document provides a test procedure guideline for LNG ship's BOG re-liquefaction system.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6976:2016, *Natural gas — Calculation of calorific values, density, relative density and Wobbe indices from composition*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org>

3.1 design pressure

pressure used to determine minimum scantlings of system components of the LNG re-liquefaction system

3.2 maximum allowable working pressure MAWP

maximum pressure of a storage tank determined by the tank design code

Note 1 to entry: The MAWP should not be less than the design pressure.

3.3 liquefied natural gas LNG

Liquid form of natural gas. When natural gas is cooled at atmospheric pressure to very low temperatures (about $-162\text{ }^{\circ}\text{C}$, depending on the composition of the natural gas) it condenses into a liquid

Note 1 to entry: It is characterized as a cryogenic liquid having a temperature typically around -162°C under normal atmospheric pressure