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Ships and marine technology — Bunker fuel mass flow meters on receiving vessel — Requirements

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Foreword

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This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 3, *Piping and machinery*.

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

Accurate measurement of large quantities of bunker fuels received by ships around the world has historically been difficult, with many ships relying on outdated methods of verification, such as before-and-after manual measurement of fuel tank levels. The potential for inaccuracies is significant and can result in disputes between the fuel supplier and the ship.

This document addresses the need for standardization of meters used to accurately measure the quantity of fuel received. Traditionally, volumetric flow meters have raised accuracy concerns because of the potential for air and other gases to affect the measurement of the fluid. Also, entrained air can cause inaccurate shipboard tank readings during and immediately after bunkering.

Accurate measurement of bunker fuel receipt quantities using mass flow meters will result in greater efficiencies in the ship bunkering process and reduce disputes.

Ships and marine technology — Bunker fuel mass flow meters on receiving vessel — Requirements

1 Scope

This document specifies requirements for Coriolis mass flow meter (MFM) systems installed on and used by vessels for the accurate measurement of bunker fuels received. It defines metrology and security requirements as well as testing requirements of the MFM system for the receiving vessel. This document complements ISO 8217, ISO 22192 and OIML R117.

This document does not cover mass flow meters used for custody transfer, nor does it address overall bunker delivery procedural issues, such as delivery system integrity and transfer operations. It is not applicable to cryogenic fuels such as LNG.

For bunker delivery using a Coriolis mass flow meter system in a custody transfer role, refer to ISO 22192.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

3.1
bunker
bunker fuel
fuel (Class F) supplied to a vessel for its propulsion and/or operation

Note 1 to entry: Class F fuels are specified in ISO 8217.

3.2
mass flow meter
MFM
equipment designed to directly measure and indicate the mass of *bunker fuel* (3.1) received by a ship

3.3
maximum allowable working pressure
MAWP
highest stress to which a piping system component can be subjected, based on materials and design calculations

3.4
maximum mass flow rate
Q_{max}
maximum flow rate up to which the *MFM system* (3.5) has been qualified to operate in compliance with the required accuracy

Note 1 to entry: The maximum value is normally determined by the application.