

ICS 75.060
CCS E 24



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

GB/T 24957-2010

**Refrigerated light hydrocarbon fluids -- Calibration of
membrane tanks and independent prismatic tanks in ships --
Physical measurement**

冷冻轻烃流体 船上膜式储罐和独立棱柱形储罐的校准 物理测量法
(English Translation)

Issued on: August 9, 2010

Implemented on: December 1, 2010

Issued by: Standardization Administration of China

Table of Contents

Introduction

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Note

5 Equipment

6 Measure

9 7 Calculation Program

8 Calibration Table

Job Security Annex A (informative) diaphragm tank Precautions

Error Appendix B (informative) Calculation example of a typical membrane tank

Annex C (informative) Example of main meter (3 tanks)

Annex D (informative) Example of pitch correction (1 tank)

Annex E (informative) Example of heeling correction (1 tank)

Annex F (informative) tank wall expansion/contraction correction table (for any tank)

Foreword

This standard is identical with ISO 8311. 1989 "Refrigerated light hydrocarbon fluids on board membrane tanks and independent prismatic tank calibration physical Measurement "(in English).

This standard is equivalent translation ISO 8311. 1989.

For ease of use, this standard also made the following editorial changes.

--- "This International Standard" be replaced by "this standard";

--- Delete ISO 8311. 1989 foreword, preface rewritten this standard;

--- According to GB/T 1.1-2000 requirements of formula uniform numbers.

The Standard Appendix A, Appendix B, Appendix C, Appendix D, Appendix E, Appendix F for the informative appendix.

This standard by the National Standardization Technical Committee on Gas (SAC/TC244) proposed.

This standard by the National Standardization Technical Committee on Gas (SAC/TC244) centralized.

Introduction

By a large number of 1 to 4 carbon atoms in the light hydrocarbon at a pressure of approximately atmospheric pressure as the fluid is frozen storage and transport vessels. This these fluids are divided into two categories, liquefied natural gas (LNG) and liquefied petroleum gas (LPG). Mass transportation of these fluids, in the ship's structure and construction Aspects require special skills, making the sea safe and economical.

Measuring the amount of cargo tanks of ships used for trade purposes within the handover should be highly accurate. This standard with other standards in this series, it provides internal measurements on board tank to derive the tank calibration tables.

This standard contains a membrane tank container consists of a layer which is supported by a relatively thin isolated stainless steel or nickel steel alloy film such as Calibration techniques. After be amended, but also for low temperature use of aluminum or steel, independent, self-supporting prismatic shape and approximate tank Calibration Technology.

Appendix A gives recommendations during calibration should follow safety precautions.

Appendix B gives a typical analysis of membrane tank error sources.

Appendix C gives a liquid as a function of height Examples of local filling volume calibration table; Appendix D, Appendix E, Appendix F given pitch,

Examples of heeling and temperature correction table.

Refrigerated light hydrocarbon fluid membrane tanks and independent board Prismatic tank calibration Physical measurement

1 Scope

1.1

standard specifies the method for measuring internal transport of refrigerated light hydrocarbon fluids ship membrane tanks and independent prismatic tank. Apart from the physical Outside of the measurement process, the computer program also provides calibration tables and correction tables prepared for the calculation of the quantity of goods.

1.2

For membrane tanks, this standard procedure is to use the film to install scaffolding to support the use of measuring equipment, and for an independent prismatic tank, Use other security required to measure the way into position.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

ISO 4512:2001 Petroleum and liquid petroleum product storage tanks measuring equipment calibration and manual methods ISO 7507-1:2003 Petroleum and liquid petroleum products - Calibration of vertical cylindrical tank volume - Part 1. Measurement tape

3 Terms and Definitions

The following terms and definitions apply to this standard.

Calibration calibration Determination of the total volume of the tank or part of the process depending on the volume level.

3.1.1

Bottom calibration bottomcalibration Since the undulation of the bottom of the tank bottom measurement calibration done.

Calibration table in the draft when the ship flat and upright state with a different level from the measurement reference point (3.6) corresponding to the measured volume or the volume of the tank, are usually Called tank calibration table or tank volume table.

Beveled chamfer

Connected to the tank wall and the tank bottom or top surface of the inclined surface (see Figure 5).

Stay wood deadwood

Any member of the influence of the tank volume, including rounded corners and curved edges. When the volume of the member so that the effective volume of the tank is increased, stayed the wood called "Positive stay wood", when the displacement volume of the liquid volume component reduces the effective volume of the tank, stay wood called "negative stay wood." 3.5 Measurement gauging all measured to determine the amount of liquid and vapor in the tank and the tank performed.