

ICS 75.060
CCS E 24



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

GB/T 24958.1-2010

**Refrigerated light hydrocarbon fluids -- Calibration of spherical
tanks in ships -- Part 1: Stereo photogrammetry**

冷冻轻烃流体 船上球形储罐的校准 第1部分：立体照相测量法

(English Translation)

Issued on: August 9, 2010

Implemented on: December 1, 2010

Issued by: Standardization Administration of China

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Foreword

GB/T 24958 "Calibration Refrigerated light hydrocarbon fluids spherical tank ship" is divided into two parts.

--- Part 1. stereoscopic measurement

--- Part 2. triangulation this section GB/T 24958 Part 1.

This part identical with ISO 9091-1:1991 "Calibration Refrigerated light hydrocarbon fluids - Part 1 spherical tanks on board. three-dimensional photographic measurements Method. " this section is equivalent translation ISO 9091-1:1991.

For ease of use, this part of ISO 9091-1:1991 made the following editorial changes.

- a) will apply to a number of statements to international standards applicable to our standard formulation;
- b) use a decimal point instead of a decimal comma " , " . " , " ;
- c) Remove international standards foreword, preface to rewrite this section;
- d) with the GB/T 1.1-2000 introductory phrase in the normative references instead of ISO 9091-1:1991 to guide language.

This section Appendices A to F are informative appendices.

This part of the National Gas Standardization Technical Committee (SAC/TC244) proposed.

This part of the National Gas Standardization Technical Committee (SAC/TC244) centralized.

This section is responsible for drafting units. China Southwest Oil and Gas Field Branch Gas Research Institute of Petroleum.

This section participated in the drafting unit. China Petroleum Natural Gas Pipeline Branch Nanjing Measurement and Testing Center, China PetroChina Southwest Oil and Gas Field at public SECRETARY measuring and testing center, China Petroleum Engineering Co., Ltd. Southwest Branch, China CNOOC Gas and Power Co., Ltd. Company Secretary, China PetroChina Dalian LNG project department.

Introduction

Near atmospheric pressure, a large number of light hydrocarbons containing 1 to 4 carbon atoms and are stored frozen in liquid transport by sea. Such liquid it can be divided into two categories. Liquefied natural gas (LNG) and liquefied petroleum gas (LPG). In order to make shipping safe and economical, a large number of these liquids Transported on ship design and construction requires a special technique.

In custody transfer for the purpose of determining the amount of the tank cargo ship must achieve a high level of accuracy. This section and the same series Other provisions of the standards are internal measurements aboard tanks, this method can be deduced from the tank calibration tables.

For internal measurements, typically using a liquid correction method, physical measurements, optical measurement and three-dimensional photographic measurements. Liquid correction method does not for large spherical tank near atmospheric pressure canned light hydrocarbons frozen, canned quiet because when the liquid is higher than a plane, the applied correction fluid Hydraulic may exceed the design pressure. From considering the accuracy of the method, if the correction results from other methods

suspicious, you can use three-dimensional photographic Measurement as arbitration. Three-dimensional photographic measurements include pictures of the tank wall and interior photos of the target analysis.

This section clearly defines the mapping camera to take pictures with a universal perspective and analyze the plotter approach.

Refrigerated light hydrocarbon fluids calibration of spherical tanks on board Part 1. stereoscopic measurement

1 Scope

Section 1.1 provides for the internal spherical tanks of liquefied gas vehicles on the three-dimensional photographic measurement procedures.

1.2

In addition to the actual measurement step, this section describes the computer program to edit the calibration table.

2 Normative references

The following documents contain provisions which, through reference GB/T 24958 in this section constitute provisions of this section. For dated references Documents, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encourage the present section Research on whether the parties reached an agreement to use the latest versions of these documents. For undated references, the latest version applies to this section.

ISO 7078. 1985 Housing construction actinomycetes, measurements and observations vocabulary procedures and guidance notes ISO 8311. 1989 Refrigerated light hydrocarbon fluids marine diaphragm and separation prism type storage tank calibration Physical measurement

3 Terms and Definitions

The following terms and definitions apply to this section.

Absolute orientation Through internal and relative orientation of the three-dimensional model constituted final correction process, in this process, three-dimensional scale model is converted into real Actual length, its inclination is adjusted to the actual state of the tank.

Calibration Determine the total volume of the tank or the portion corresponding to a different level of volume in the process.

Calibration table (primary meter) calibrationtable (maingaugetable) A table is commonly referred to as the tank calibration table or tank volume table showing the ship under the

draft level and upright state from the measurement reference point measured Different level corresponding to the tank volume or volume.

Reference point datumpoint Tank calibration Omote South Pole ratio.

Stay wood deadwood

It affects all members of the tank volume. When the volume of the member so that the effective volume of the tank is increased, stayed the wood called "Wood stay positive", when the volume of member Displaces the liquid volume decreases the effective volume of the tank, the spent wood called "negative stay wood." 3.6 Equatorial equator Spherical shell maximum horizontal circumference.