TOORNAFTA JA VEDELAD NAFTATOOTED VERTIKAALSETE SILINDRILISTE MAHUTITE KALIBREERIMINE
Osa 1: Mõõdulindimeetod

Petroleum and liquid petroleum products
Calibration of vertical cylindrical tanks
Part 1: Strapping method

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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Käesolev Eesti standard EVS-ISO 7507-1:2006 "Toornafta ja vedelad naftatooted. Vertikaalsete silindriliste mahutite kalibreerimine. Osa 1: Mõõdulindimeetod" sisaldab rahvusvahelise standardi ISO 7507-1:2003 "Petroleum and liquid petroleum products - Calibration of vertical cylindrical tanks - Part 1: Strapping method" identset ingliskeelset teksti.

Standardi avaldamise korraldas Eesti Standardikeskus.

Standard EVS-ISO 7507-1:2006 on kinnitatud Eesti Standardikeskuse 11.12.2006 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teataja 2007. aasta jaanuarikuu numbris.

Standard on kättesaadav Eesti Standardikeskusest.

NATIONAL FOREWORD

This Estonian Standard EVS-ISO 7507-1:2006 consists of the identical English text of the International Standard ISO 7507-1:2003 "Petroleum and liquid petroleum products - Calibration of vertical cylindrical tanks - Part 1: Strapping method".

Estonian standard is published by the Estonian Centre for Standardisation.

This standard is ratified with the order of Estonian Centre for Standardisation dated 11.12.2006 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian Centre for Standardisation.

Käsitlusala

1.1 Käesolev osa standardist ISO 7507 määratleb põhiosas vertikaalsete silindriliste mahutite kalibreerimismeetodi, mis toetub mahuti geomeetriliste parameetrite mõõdulindiga mõõtmisele.

1.2 Meetod on tuntud kui "Mõõdulindimeetod" ja see sobib kasutamiseks töö-, tugi- või kontrollmeetodina.

Märkus. Tugimeetodina kasutamisel on ümbermõõdu mõõtmiste arv määratletud standardis, mis viitab ISO 7507 käesolevale osale.

1.3 Käesolevas standardis on kirjeldatud ümbermõõdu mõõtmise protseduuri, parandite arvutamist ja arvutusi, mille kohaselt koostatakse mahuti mahutabel.

1.4 Käesolev meetod ei ole kasutatav deformeeritud (näiteks mõlgitud või mitteringikujuliste) mahutite korral.

1.5 Käesolev meetod sobib kasutamiseks vertikaalsihist kuni 3 % kaldega mahutite korral tingimusel, et rakendatakse kalde mõõtetulemusele vastavat parandit arvutustes.

ICS 75.180.30 Volumeetrilised seadmed ja mõõteriistad

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

International Standard ISO 7507-1 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 3, *Static petroleum measurement*.

This second edition cancels and replaces the first edition (ISO 7507-1:1993). It also cancels and replaces ISO 7507-6:1997, the subject of which is now included in this part of ISO 7507.

ISO 7507 consists of the following parts, under the general title *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks*:

— *Part 1: Strapping method*

— *Part 2: Optical-reference-line method*

— *Part 3: Optical-triangulation method*

— *Part 4: Internal electro-optical distance-ranging method*

— *Part 5: External electro-optical distance-ranging method*

— *Part 6: Recommendations for monitoring, checking and verification of tank calibration and capacity table*

Introduction

This part of ISO 7507 forms part of a series on tank calibration including the following:

ISO 7507-2:1993, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 2: Optical-reference-line method*

ISO 7507-3:1993, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 3: Optical-triangulation method*

ISO 7507-4:1995, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 4: Internal electro-optical distance-ranging method*

ISO 7507-5:2000, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 5: External electro-optical distance-ranging method*

ISO 7507-6:1997, *Recommendations for monitoring, checking and verification of tank calibration and capacity table*

ISO 8311:1989, *Refrigerated light hydrocarbon fluids — Calibration of membrane tanks and independent prismatic tanks in ships — Physical measurement*

ISO 9091-1:1991, *Refrigerated light hydrocarbon fluids — Calibration of spherical tanks in ships — Part 1: Stereo-photogrammetry*

ISO 9091-2:1992, *Refrigerated light hydrocarbon fluids — Calibration of spherical tanks in ships — Part 2: Triangulation measurement*

The strapping method for the calibration of vertical cylindrical tanks has been used for many years and is a recognized method of determining the capacity of storage tanks from measurements of the circumference of a tank at various heights. The strapping method is also often used to establish a reference circumference at a selected height to use as a datum in other methods of tank calibration.

Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks —

Part 1:
Strapping method

1 Scope

1.1 This part of ISO 7507 specifies a method for the calibration of substantially vertical cylindrical tanks by measuring the tank using a strapping tape.

1.2 This method is known as the "strapping method" and is suitable for use as a working method, a reference method or a referee method.

NOTE For the reference method, the number of strappings required will be specified in the standard which refers to this part of ISO 7507.

1.3 The operation of strapping, the corrections to be made and the calculations leading to the compilation of the tank capacity table are described.

1.4 This method does not apply to abnormally deformed, e.g. dented or non-circular, tanks.

1.5 This method is suitable for tilted tanks with a deviation of up to 3 % from the vertical, provided that a correction for the measured tilt is applied in the calculations.

2 Normative references

The following referenced documents are indispensable for the application 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 91-1:1992, *Petroleum measurement tables — Part 1: Tables based on reference temperatures of 15 °C and 60 °F*

ISO 3675:1998, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*

ISO 4269:2001, *Petroleum and liquid petroleum products — Tank calibration by liquid measurement — Incremental method using volumetric meters*