TOORNAFTA JA VEDELAD NAFTATOOTED MAHUTI KALIBREERIMINE MAHUMEETODIL
Vedelikuarvestiga osamahtude lisamise meetod

Petroleum and liquid petroleum products
Tank calibration by liquid measurement
Incremental method using volumetric meters

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

Käesolev Eesti standard EVS-ISO 4269:2007 "Toornafta ja vedelad naftatooted. Mahuti kalibreerimine mahumeetodil. Vedelikuarvestiga osamahtude lisamise meetod" sisaldab rahvusvahelise standardi ISO 4269:2001 "Petroleum and liquid petroleum products - Tank calibration by liquid measurement - Incremental method using volumetric meters" identset ingliskeelset teksti.

Standardi avaldamise korraldas Eesti Standardikeskus.

Standard EVS-ISO 4269:2007 on kinnitatud Eesti Standardikeskuse 17.09.2007 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teataja 2007. aasta oktoobrikuu numbris.

Standard on kättesaadav Eesti Standardikeskusest.

NATIONAL FOREWORD

This Estonian Standard EVS-ISO 4269:2007 consists of the identical English text of the International Standard ISO 4269:2001 "Petroleum and liquid petroleum products - Tank calibration by liquid measurement - Incremental method using volumetric meters".

Estonian standard is published by the Estonian Centre for Standardisation.

This standard is ratified with the order of Estonian Centre for Standardisation dated 17.09.2007 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

Käesolev rahvusvaheline standard määratleb mahutite kalibreerimise meetodi vedelikuannuste lisamise teel. Vedelikku kasutatakse kui mahu ülekande vahendit, mida arvesti abil täpselt mõõdetakse.

Käesolev standard ei ole rakendatav etalonmõõteyahendite, mõõdunõude ja pruuverite (*meter prover*) kalibreerimisel.

Märkus. Rakendatavad standardid on esitatud kirjanduse loetelus.

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 3.

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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 4269 was prepared by Technical Committee ISO/TC 28, *Petroleum products and lubricants*, Subcommittee SC 3, *Static petroleum measurement*.

Annex A forms a normative part of this International Standard. Annex B is for information only.

Introduction

This International Standard forms part of a series on tank calibration including the following:

ISO 7507-1, ISO 7507-2, ISO 7507-3, ISO 7507-4, ISO 7507-5, ISO 7507-6, ISO 8311, ISO 9091-1 and ISO 9091-2.

Liquid calibration methods may be used in the calibration of either the total or partial capacity of a tank. A high degree of accuracy may be obtained provided that great care is taken at all stages of the operation. The method is particularly useful where tanks are of irregular shape, for the calibration of the bottom of any storage tank, or for the calibration of ship and barge tanks having irregular cross sections.

The method offers a degree of accuracy which may exceed other methods when used in the calibration of small tanks, especially small horizontal cylindrical tanks.

The calibration liquid may be either water or a suitable petroleum product having a low volatility and viscosity. Water is recommended where wide temperature variations are expected during calibration as water has a low coefficient of cubical expansion. However, the use of water may introduce unacceptable risks and difficulties depending on the use to which the tank being calibrated is to be put (e.g. the use and subsequent removal of water when used in the calibration of underground storage tanks at retail sites). In such circumstances the use of a suitable petroleum product would be preferable.

Petroleum and liquid petroleum products — Tank calibration by liquid measurement — Incremental method using volumetric meters

1 Scope

This International Standard specifies a method for the calibration of tanks by addition of batches of liquid. The liquid is used as a volume-transfer medium, measured accurately by means of a meter.

This International Standard is not applicable to the calibration of reference measuring instruments, proving tanks, or meter provers.

NOTE Applicable standards are given in the bibliography.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 91-1:1992, *Petroleum measurement tables — Part 1: Tables based on references temperature of 15 °C and 60 °F*.

ISO 91-2:1991, *Petroleum measurement tables — Part 2: Tables based on a reference temperature of 20 °C*.

ISO 2714:1980, *Liquid hydrocarbons — Volumetric measurement by displacement meter systems other than dispensing pumps*.

ISO 2715:1981, *Liquid hydrocarbons — Volumetric measurement by turbine meter systems*.

ISO 4268, *Petroleum and liquid petroleum products —Temperature measurements — Manual methods.*

ISO 7507-1:1993, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 1: Strapping method*.

ISO/TR 7507-6:1997, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 6: Recommendations for monitoring, checking and verification of tank calibration and capacity tables*.

ISO 9770:1989, *Crude petroleum and petroleum products — Compressibility factors for hydrocarbons in the range 638 kg/m^3 to 1074 kg/m^3*.

IEC 60079-10, *Electrical apparatus for explosive gas atmospheres — Part 10: Classification of hazardous areas*.