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Petroleum and liquid petroleum products — Calibration of spherical tanks — External electro-optical distance-ranging method

Pétrole et produits pétroliers liquides — Jaugeage des réservoirs sphériques — Méthode par mesurage électro-optique externe de la distance

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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This document was prepared by Technical Committee ISO/TC 28 *Petroleum and related products, fuels and lubricants from natural or synthetic sources*, Subcommittee SC 2, *Measurement of petroleum and related products*.

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.

Petroleum and liquid petroleum products — Calibration of spherical tanks — External electro-optical distance-ranging method

1 Scope

This document specifies a method for the calibration of spherical tanks with a radius greater than 1 m by means of external measurements using an electro-optical distance-ranging instrument (EODR). It also specifies the subsequent calculation and the compilation of tank capacity tables.

This document applies to spherical tanks built above ground, that are non-insulated, single-shell and with a radial variation up to 1 %. The method specified in this document can also apply to spherical tanks built above the deck when the carrying ship is in the dock.

This document does not apply to the calibration of spheroidal tanks.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 4512, *Petroleum and liquid petroleum products — Equipment for measurement of liquid levels in storage tanks — Manual methods*

ISO 7507-1:2003, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 1: Strapping method*

ISO 7507-4:2010, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 4: Internal electro-optical distance-ranging method*

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

IEC 60825-1, *Safety of laser products— Part 1: Equipment classification and requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7507-1, ISO 7507-5 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
station
position from which measurements of angles and slope distance are made