INTERNATIONAL STANDARD

ISO 12917-1

Second edition
2017-03

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

Part 1: Manual methods

Pétrole et produits pétroliers liquides — Jaugeage des réservoirs cylindriques horizontaux —

Partie 1: Méthodes manuelles

Reference number
ISO 12917-1:2017(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO 12917-1:2002), which has been technically revised with the following changes.

— The total length of the tanks has been limited and also only the calibration via ISO 7507-1 is described in order to improve precision.

— Most of the figures have been improved in order to further clarify the measurement procedures. These, in turn, have been described more logically and in a more useful order. For instance, tank shell measurements are no longer described separately and the former Annex on "tilt" has been incorporated in the text.

— A new annex on calibration uncertainties has been added.

— Correction for tank tilt is now calculated rather than read from a figure.

It also incorporates the Technical Corrigendum ISO 12917-1:2002/Cor 1:2009.

A list of parts in the ISO 12917 series can be found on the ISO website.

Introduction

This document forms part of a series on tank calibration methods. In some countries, some or all of the items covered by this document are subject to local regulations. The attention of the user is drawn to the fact that it is possible that differences exist between this document and those regulations.

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

Part 1: Manual methods

1 Scope

This document specifies manual methods for the calibration of nominally horizontal cylindrical tanks, installed at fixed locations.

The methods in this document are applicable to insulated and non-insulated tanks, either when they are above-ground or underground. The methods are applicable to pressurized tanks and to both knuckle-dish-end and flat-end cylindrical tanks as well as elliptical and spherical head tanks.

This document is applicable to tanks inclined from the horizontal, provided a correction is applied for the measured tilt.

Although this document does not impose any limits on the maximum tank diameter and maximum tank tilt to which this document is applicable, the practical limits would be about 4 m in diameter and 10° in tilt.

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 7507-1:2001, *Petroleum and liquid petroleum products — Calibration of vertical cylindrical tanks — Part 1: Strapping method*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Precautions

4.1 General

The general and safety precautions specified in ISO 7507-1 shall be applied.