EESTI STANDARD EVS-EN ISO 7278-2:2000

Vedelad süsivesinikud. Dünaamilised mõõtmised. Kalibreerimissüsteemid mahutavuse mõõturitele. Osa 2: Torude katseseade

Liquid hydrocarbons - Dynamic measurement - Proving systems for volumetric meters - Part 2: Pipe provers

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 7278-2:2000 sisaldab Euroopa standardi EN ISO 7278-2:1995 ingliskeelset teksti. Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 7278-2:2000 consists of the English text of the European standard EN ISO 7278-2:1995. This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: Käesolev standardi osa esitab juhendi torude testimise seadme konstrueerimiseks, paigaldamiseks ja kalibreerimiseks. Torude testimise seadme kalibreerimisel ja käitamisel kasutuselolevad arvutustehnikad on täpsustatud ISO 4267-2-s.	**Scope:**

ICS 75.180.30

Võtmesõnad: dünaamikatestid, naftasaadused, süsivesinikud, testimine, vedelike voolamine, voolamise mõõtmine, voolamismõõturid

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN ISO 7278-2

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Descriptors: Hydrocarbons, volumetry, pipe provers.

English version

Liquid hydrocarbons – Dynamic measurement

Proving systems for volumetric meters
Part 2: Pipe provers
(ISO 7278-2:1988)

Hydrocarbures liquides – Mesurage dynamique – Systèmes d'étalonnage des compteurs volumétriques – Partie 2: Tubes étalons (ISO 7278-2:1988)

Flüssige Kohlenwasserstoffe – Dynamische Messung – Prüfsysteme für volumetrische Meßgeräte – Teil 2: Rohrprüfer (ISO 7278-2:1988)

This European Standard was approved by CEN on 1995-09-09 and is identical to the ISO Standard as referred to.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 7278-2:1988 Liquid hydrocarbons – Dynamic measurement – Proving systems for volumetric meters – Part 2: Pipe provers,

which was prepared by ISO/TC 28 'Petroleum products and lubricants' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 19 'Petroleum products, lubricants and related products' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by April 1996 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 7278-2:1988 was approved by CEN as a European Standard without any modification.

Contents

0 Introduction

Pipe provers are used as volume standards for the calibration of liquid meters. The purpose of this part of ISO 7278 is to outline the essential elements of a pipe prover, to provide specifications for its performance, and to give guidance on its design, installation and calibration. Pipe provers discussed in this part of ISO 7278 are of the running-start/running-stop type, in which flow is uninterrupted during proving, thus permitting the meter to be proved under its normal operating conditions. This type of prover includes a calibrated section of pipe in which a displacer travels, actuating detection devices which produce electrical signals as the displacer passes each end of the calibrated portion. The displacer finally stops at the end of the run as it enters a region where the flow bypasses it.

Both stationary and mobile provers may be constructed on this principle. The calibrated section of the prover may be straight or folded (U-shaped), and the design may be such that the displacer moves around a closed loop in only one direction (unidirectional) or, alternatively, in both directions (bidirectional).

ISO 7278 consists of the following parts, under the general title *Liquid hydrocarbons — Dynamic measurement — Proving systems for volumetric meters:*

- *Part 1: General principles*
- *Part 2: Pipe provers*
- *Part 3: Pulse interpolation techniques*

Annex A forms an integral part of this part of ISO 7278. Annex B is for information only.

1 Scope and field of application

1.1 This part of ISO 7278 provides guidance for the design, installation and calibration of pipe provers. Calculation techniques for use when calibrating and operating provers are detailed in ISO 4267-2.

1.2 Most of the material in this part of ISO 7278 is general in that it applies to pipe provers for use with different liquids and types of meters and for proving them in different services. This part of ISO 7278 does not apply to the newer "small volume" or "compact" provers.

1.3 The standard reference conditions for petroleum measurement are a temperature of 15 °C and a pressure of 101 325 Pa as specified in ISO 5024.

NOTE — In some countries other reference temperatures are used, e.g. 20 °C and 60 °F.

2 References

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

ISO 4267-2, *Petroleum and liquid petroleum products — Calculation of oil quantities — Part 2: Dynamic measurement.* [1)]

ISO 5024, *Petroleum liquids and gases — Measurement — Standard reference conditions.*

ISO 7278-3, *Liquid hydrocarbons — Dynamic measurement — Proving systems for volumetric meters — Part 3: Pulse interpolation techniques.*

ISO 8222, *Petroleum measurement systems — Calibration — Temperature corrections for use with volumetric reference measuring systems.*

3 Definitions

For the purposes of this part of ISO 7278, the following definitions apply:

3.1 base volume: The volume of a prover calibrated section, i.e. the length between the detectors, at specified reference conditions of temperature and pressure.

1) At present at the stage of draft.