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Natural gas - Measurement of properties - Calorific value and Wobbe index (ISO 15971:2008)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD

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EN ISO 15971

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ICS 75.060

English Version

Natural gas - Measurement of properties - Calorific value and Wobbe index (ISO 15971:2008)

Gaz naturel - Mesurage des propriétés - Pouvoir calorifique et indice de Wobbe (ISO 15971:2008)

Erdgas - Messung der Eigenschaften - Wärmewerte und Wobbe-Index (ISO 15971:2008)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of ISO 15971:2008 has been prepared by Technical Committee ISO/TC 193 “Natural gas” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15971:2014.

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Endorsement notice

The text of ISO 15971:2008 has been approved by CEN as EN ISO 15971:2014 without any modification.

INTERNATIONAL STANDARD

ISO 15971

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Natural gas — Measurement of properties — Calorific value and Wobbe index

Gaz naturel — Mesurage des propriétés — Pouvoir calorifique et indice de Wobbe

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Foreword

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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.

ISO 15971 was prepared by Technical Committee ISO/TC 193, *Natural gas*.

Introduction

The amount of energy delivered by a flowing natural gas is often determined as the product of the volume delivered and the calorific value per unit volume of the gas. It is, therefore, important to have available standardized methods of determining the calorific value. In many cases, it is possible to calculate the calorific value of natural gas, with sufficient accuracy, given the composition (see ISO 6976). However, it is also possible, and sometimes a preferred alternative, to measure calorific value using any one of several techniques that do not require a compositional analysis. The methods currently in use, and the many factors that it is necessary to address in the selection, evaluation, performance assessment, installation and operation of a suitable instrument, are detailed herein. The measurement of the Wobbe index, a property closely related to calorific value, is discussed briefly in an informative annex, but is not considered in detail in the normative parts of this International Standard.

INTERNATIONAL STANDARD **ISO 15971:2008(E)**

Natural gas — Measurement of properties — Calorific value and Wobbe index

1 Scope

This International Standard concerns the measurement of calorific value of natural gas and natural gas substitutes by non-separative methods, i.e. methods that do not involve the determination of the gas composition nor calculation from it. It describes the principles of operation of a variety of instruments in use for this purpose, and provides guidelines for the selection, evaluation, performance assessment, installation and operation of these.

Calorific values can be expressed on a mass basis, a molar basis or, more commonly, a volume basis. The working range for superior calorific value of natural gas, on the volume basis, is usually between 30 MJ/m^3 and 45 MJ/m^3 at standard reference conditions (see ISO 13443). The corresponding range for the Wobbe index is usually between 40 MJ/m^3 and 60 MJ/m^3.

This International Standard neither endorses nor disputes the claims of any commercial manufacturer for the performance of an instrument. Its central thesis is that fitness-for-purpose in any particular application (defined in terms of a set of specific operational requirements) can be assessed only by means of a well-designed programme of experimental tests. Guidelines are provided for the proper content of these tests.

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 6976:1995, *Natural gas — Calculation of calorific values, density, relative density and Wobbe index from composition*

ISO 14532: 2001, *Natural gas — Vocabulary*

