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BS EN ISO 13503-1:2011



BSI Standards Publication

Petroleum and natural gas industries — Completion fluids and materials

Part 1: Measurement of viscous properties of completion fluids (ISO 13503-1:2011)

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This British Standard is the UK implementation of EN ISO 13503-1:2011. It supersedes BS EN ISO 13503-1:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PSE/17/-/3, Drilling and completion fluids and well cements.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Petroleum and natural gas industries - Completion fluids and materials - Part 1: Measurement of viscous properties of completion fluids (ISO 13503-1:2011)

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This European Standard was approved by CEN on 31 October 2011.

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Foreword

This document (EN ISO 13503-1:2011) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2012, and conflicting national standards shall be withdrawn at the latest by May 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 13503-1:2005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 13503-1:2011 has been approved by CEN as a EN ISO 13503-1:2011 without any modification.

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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 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.

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ISO 13503-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 3, *Drilling and completion fluids, and well cements*.

This second edition cancels and replaces the first edition (ISO 13503-1:2003), which has been technically revised. It also incorporates the Technical Corrigendum ISO 13503-1:2003/Cor.1:2005.

ISO 13503 consists of the following parts, under the general title *Petroleum and natural gas industries — Completion fluids and materials*:

- *Part 1: Measurement of viscous properties of completion fluids*
- *Part 2: Measurement of properties of proppants used in hydraulic fracturing and gravel-packing operations*
- *Part 3: Testing of heavy brines*
- *Part 4: Procedure for measuring stimulation and gravel-pack fluid leakoff under static conditions*
- *Part 5: Procedures for measuring the long-term conductivity of proppants*
- *Part 6: Procedure for measuring leakoff of completion fluids under dynamic conditions*

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Introduction

For the purposes of this part of ISO 13503, completion fluids are defined as viscosified treating fluids used during the completion or workover of a petroleum- or natural-gas-producing well. The objective of this part of ISO 13503 is to provide a standard procedure for measuring the viscous properties of single-phase, non-particulate-laden completion fluids. These fluids are viscosified brines, gravel-pack carrier fluids, and fracturing fluids. These fluids can be either crosslinked or non-crosslinked (aqueous, hydrocarbon- or acid-based).

An optional shear-history simulation procedure is provided for fluids that are potentially shear-sensitive. This procedure is designed to simulate the shearing effects experienced by a fluid in surface apparatus and during the time it is being conveyed down the wellbore. Shear-history simulation is most often used during the development of new fracturing fluids to characterize their sensitivity to shear.

These standard procedures were compiled on the basis of several years of comparative testing, debate, discussion, and continued research by the industry.

This standard procedure is largely based on API RP 13M, first edition, July 2004.

In this part of ISO 13503, where practical, US Customary units (USC) are included in parentheses for convenience.

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