

**SLOVENSKI  
PREDSTANDARD**

**OSIST prEN ISO 13503-2:2004**

december 2004

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Petroleum and natural gas industries - Completion fluids and materials - Part 2:  
Measurement of properties of proppants used in hydraulic fracturing and gravel-  
packing operations

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ICS 75.100

Referenčna številka  
OSIST prEN ISO 13503-2:2004(en)



August 2004

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ICS

English version

**Petroleum and natural gas industries - Completion fluids and materials - Part 2: Measurement of properties of proppants used in hydraulic fracturing and gravel-packing operations**

Industries du pétrole et du gaz naturel - Fluides et matériaux de complétion - Partie 2: Mesurage des propriétés des matériaux de soutènement utilisés dans les opérations de facturation hydraulique et de remplissage de gravier

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**Management Centre: rue de Stassart, 36 B-1050 Brussels**

## **Foreword**

This document (prEN ISO 13503-2:2004) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum 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 document is currently submitted to the parallel Enquiry.

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## Petroleum and natural gas industries — Completion fluids and materials —

### Part 2:

## Measurement of properties of proppants used in hydraulic fracturing and gravel-packing operations

*Industries du pétrole et du gaz naturel — Fluides et matériaux de complétion —*

*Partie 2: Mesurage des propriétés des matériaux de soutènement utilisés dans les opérations de fracturation hydraulique et de remplissage de gravier*

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## Foreword

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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 13503-2 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*, Subcommittee SC 3, *Drilling and completion fluids, and well cements*.

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

- *Part 1: Measurements of viscous properties of completion fluids*
- *Part 2: Procedure for measuring properties of proppants used in hydraulic fracturing and gravel packing operations*
- *Part 3: Testing of heavy brines (DIS voting terminates on 2004-12-20)*

Annex A of this part of ISO 13503 are for information only.

## Introduction

This part of ISO 13503 is a compilation and modification of API RP 56 [1], API RP 58 [2] and API RP 60 [3].

The recommended tests have been developed to improve the quality of proppants delivered to the well site. They are for use in evaluating certain physical properties used in hydraulic fracturing and gravel packing operations. These tests should enable users to compare the physical characteristics of various proppants tested under the described conditions and to select materials useful for hydraulic fracturing and gravel packing operations.

The recommended practices presented in this part of ISO 13503 are not intended to inhibit the development of new technology, materials improvements, or improved operational procedures. Qualified engineering analysis and judgment will be required for their application to a specific situation.

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# Petroleum and natural gas industries — Completion fluids and materials —

## Part 2:

# Measurement of properties of proppants used in hydraulic fracturing and gravel-packing operations

## 1 Scope

This part of ISO 13503 provides standard, testing procedures for evaluating proppants used in hydraulic fracturing and gravel packing operations.

NOTE “Proppants mentioned henceforth in this part of ISO 13503 refers to sand, ceramic media, resin-coated proppants, gravel packing media, and other materials used for hydraulic fracturing and gravel packing operations.

The objective of this part of ISO 13503 is to provide consistent methodology for testing performed on hydraulic fracturing and/or gravel packing proppants.

## 2 Normative reference

The following referenced standard is indispensable for the application of this part of ISO 13503. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced standard (including any amendments) applies.

*ASTM E11-95, Standard specification for wire cloth sieves for testing purposes.*

## 3 Abbreviations

API	American Petroleum Institute
ASTM	American Society for Testing and Materials
ASG	apparent specific gravity
FTU	formazin turbidity unit
HCl	hydrochloric acid
HF	hydrofluoric acid
LOI	loss on ignition
NTU	nephelometric turbidity unit