



NSAI
Standards

Irish Standard
I.S. EN ISO 13500:2008

Petroleum and natural gas industries - Drilling fluid materials - Specifications and tests (ISO 13500:2008)

I.S. EN ISO 13500:2008

Incorporating amendments/corrigenda/National Annexes issued since publication:

EN ISO 13500:2008/AC:2009

EN ISO 13500:2008/A1:2010

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<i>This document replaces:</i> EN ISO 13500:2006	<i>This document is based on:</i> EN ISO 13500:2008 EN ISO 13500:2006	<i>Published:</i> 1 November, 2008 15 February, 2006
This document was published under the authority of the NSAI and comes into effect on: 8 January, 2009		ICS number: 75.180.10
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Údarás um Chaighdeáin Náisiúnta na hÉireann		

ICS 75.180.10

English Version

**Petroleum and natural gas industries - Drilling fluid materials -
Specifications and tests - Amendment 1: Barite 4,1 (ISO
13500:2008/AMD 1:2010)**

Industries du pétrole et du gaz naturel - Produits pour
fluides de forage - Spécifications et essais - Amendement
1: Baryte 4,1 (ISO 13500:2008/AMD 1:2010)

Erdöl- und Erdgasindustrie - Bohrspülungen -
Spezifikationen und Prüfungen - Änderung A1: Barite 4.10
(ISO 13500:2008/AMD 1:2010)

This amendment A1 modifies the European Standard EN ISO 13500:2008; it was approved by CEN on 13 November 2010.

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Foreword

This document (EN ISO 13500:2008/A1:2010) 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of an identical text or by endorsement, at the latest by June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

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The text of ISO 13500:2008/A1:2010 has been approved by CEN as a EN ISO 13500:2008/A1:2010 without any modification.

I.S. EN ISO 13500:2008

EUROPEAN STANDARD

EN ISO 13500

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2008

ICS 75.180.10

Supersedes EN ISO 13500:2006

English Version

**Petroleum and natural gas industries - Drilling fluid materials -
Specifications and tests (ISO 13500:2008)**

Industries du pétrole et du gaz naturel - Produits pour
fluides de forage - Spécifications et essais (ISO
13500:2008)

Erdöl- und Erdgasindustrie - Bohrspülungen -
Spezifikationen und Prüfungen (ISO 13500:2008)

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Foreword

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The text of ISO 13500:2008 has been approved by CEN as a EN ISO 13500:2008 without any modification.

I.S. EN ISO 13500:2008

I.S. EN ISO 13500:2008
INTERNATIONAL
STANDARD

ISO
13500

Third edition
2008-11-01

**Petroleum and natural gas industries —
Drilling fluid materials — Specifications
and tests**

*Industries du pétrole et du gaz naturel — Produits pour fluides de
forage — Spécifications et essais*



Reference number
ISO 13500:2008(E)

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Published in Switzerland

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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 13500 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 third edition cancels and replaces the second edition (ISO 13500:2006), subclauses 7.1.2/Table 2, 7.3.1, 8.5.2, 8.6.5, 8.13.4, 10.2.5, 11.4, 14.4.3, and 15.4.3 of which have been technically revised. Clause 17 on low-viscosity polyanionic cellulose, Clause 18 on high-viscosity polyanionic cellulose, and Clause 19 on drilling-grade xanthan gum have been added.

Introduction

This International Standard covers materials that are in common usage in petroleum and natural-gas drilling fluids. These materials are used in bulk quantities, can be purchased from multiple sources and are available as commodity products. No single-source or limited-source products are included, nor are speciality products.

International Standards are published to facilitate communication between purchasers and manufacturers, to provide interchangeability between similar equipment and materials purchased from different manufacturers and/or at different times and to provide an adequate level of safety when the equipment or materials are utilized in the manner and for the purposes intended. This International Standard provides minimum requirements and is not intended to inhibit anyone from purchasing or producing materials to other standards.

This International Standard is substantially based on API Spec 13A, 16th Edition, February 1, 2004. The purpose of this International Standard is to provide product specifications for barite, haematite, bentonite, nontreated bentonite, Oil Companies' Materials Association (OCMA) grade bentonite, attapulgite, sepiolite, technical-grade low-viscosity carboxymethylcellulose (CMC-LVT), technical-grade high-viscosity carboxymethylcellulose (CMC-HVT), starch, low-viscosity polyanionic cellulose, high-viscosity polyanionic cellulose and drilling-grade *Xanthomaonas campestris*.

The intent of the document is to incorporate all International Standards for drilling fluid materials into an ISO-formatted document. A survey of the industry found that only the American Petroleum Institute (API) issued testing procedures and specification standards for these materials.

Reference to OCMA materials has been included in API work, as the OCMA and subsequent holding committees were declared defunct, and all specifications were submitted to API in 1983.

Annex A (informative) lists the mineral impurities in barite, Annex B (informative) provides the test precision and Annex C (informative) details examples of calculations.

I.S. EN ISO 13500:2008

Petroleum and natural gas industries — Drilling fluid materials — Specifications and tests

1 Scope

This International Standard covers physical properties and test procedures for materials manufactured for use in oil- and gas-well drilling fluids. The materials covered are barite, haematite, bentonite, nontreated bentonite, OCMA-grade bentonite, attapulgite, sepiolite, technical-grade low-viscosity carboxymethylcellulose (CMC-LVT), technical-grade high-viscosity carboxymethylcellulose (CMC-HVT), starch, low-viscosity polyanionic cellulose (PAC-LV), high-viscosity polyanionic cellulose (PAC-HV) and drilling-grade *Xanthomonas campestris* (Xanthan gum). This International Standard is intended for the use of manufacturers of named products.

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 6780, *Flat pallets for intercontinental materials handling — Principal dimensions and tolerances*

ISO 10414-1:2008, *Petroleum and natural gas industries — Field testing of drilling fluids — Part 1: Water-based fluids*

ASTM D422, *Standard Test Method for Particle-Size Analysis of Soils*

ASTM E11, *Standard Specification for Wire Cloth and Sieves for Testing Purposes*

ASTM E161, *Standard Specification for Precision Electroformed Sieves*

ASTM E77, *Standard Test Method for Inspection and Verification of Thermometers*

ASTM E177, *Standard Practice for Use of the Terms Precision and Bias in ASTM Test Methods*

NIST (NBS) Monograph 150, *Liquid-In-Glass Thermometry*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1

ACS reagent grade

chemicals that meet purity standards as specified by the American Chemical Society (ACS)

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