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**Petroleum and natural gas industries —  
Drilling fluids — Processing equipment  
evaluation**

*Industries du pétrole et du gaz naturel — Fluides de forage —  
Évaluation des équipements de traitement*



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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.

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 13501 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 13501:2005), which has been technically revised.

The main changes compared with the first edition are as follows:

- Clause 11 specifies a different labelling requirement for shale shaker screens that are permanently attached to the screen, and also covers the marking of shipping containers for shale shaker screens;
- Annex B describes a standard procedure for the quick assessment of a solids control screen sizing, which can be used in the field or laboratory for identification of an unknown screen approximate size range.

**NOTE** The procedure described in Annex B is provided for information only and does not replace or supplement the normative testing in accordance with Clauses 9, 10 and 11, nor is it intended for the operating comparison or ranking of similar types of individual pieces of equipment.

## Introduction

This International Standard is based on API RP 13C, 3rd edition, December 2004 (for drilling fluid processing equipment) and shale shaker screen API RP 13E, 3rd edition, May 1993 (for shale shaker screens).

The purpose of this International Standard is to provide a method of assessing the performance of solids control equipment systems in the field. It includes procedures for evaluation of shale shakers, centrifugal pumps, degassers, hydrocyclones, mud cleaners and centrifuges, as well as an entire system evaluation. Shale shaker screen labelling and separation potential of shale shaker screens have been addressed within this International Standard.

This International Standard covers equipment which is commonly used in petroleum and natural gas drilling fluids processing. This equipment can be purchased or rented from multiple sources, and is available worldwide. No single-source or limited-source equipment is included, either by inference or reference.

In this International Standard, quantities expressed in the International System (SI) of units are also, where practical, expressed in United States Customary (USC) units for information.

**NOTE** The units do not necessarily represent a direct conversion of SI units to USC units, or of USC units to SI units.

Consideration has been given to the precision of the instrument making the measurement. For example, thermometers are typically marked in one degree increments, thus temperature values have been rounded to the nearest degree.

This International Standard refers to assuring the accuracy of the measurement. Accuracy is the degree of conformity of a measurement of a quantity to the actual or true value. Accuracy is related to precision, or reproducibility of a measurement. Precision is the degree to which further measurements or calculations will show the same or similar results. Precision is characterized in terms of the standard deviation of the measurement. The result of calculation or a measurement can be accurate, but not precise, precise but not accurate, neither or both. A result is valid if it is both accurate and precise.

Users of this International Standard should be aware that further or differing requirements may be needed for individual applications. This International Standard is not intended to inhibit a vendor from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This may be particularly applicable where there is innovative or developing technology. Where an alternative is offered, the vendor should identify any variations from this International Standard and provide details.

# Petroleum and natural gas industries — Drilling fluids — Processing equipment evaluation

## 1 Scope

This International Standard specifies a standard procedure for assessing and modifying the performance of solids control equipment systems commonly used in the field in petroleum and natural gas drilling fluids processing.

The procedure described in this International Standard is not intended for the comparison of similar types of individual pieces of equipment.

## 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 3310-1<sup>1)</sup>, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 10414-1<sup>2)</sup>, *Petroleum and natural gas industries — Field testing of drilling fluids — Part 1: Water-based fluids*

ISO 10414-2<sup>3)</sup>, *Petroleum and natural gas industries — Field testing of drilling fluids — Part 2: Oil-based fluids*

ANSI/AWWA C700, *Cold-Water Meters — Displacement Type, Bronze Main Case*

API, *Manual of Petroleum Measurement Standards*

## 3 Terms, definitions, symbols and abbreviated terms

### 3.1 Terms and definitions

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

#### 3.1.1

##### **addition section**

compartment(s) in the surface drilling fluid system, between the removal section and the suction section, which provides (a) well-agitated compartment(s) for the addition of commercial products such as chemicals, necessary solids and liquids

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1) For the purposes of this International Standard, ASTM E11-95 is equivalent to ISO 3310-1.

2) For the purposes of this International Standard, API RP 13B-1 is equivalent to ISO 10414-1.

3) For the purposes of this International Standard, API RP 13B-2 is equivalent to ISO 10414-2.