Packers and Bridge Plugs

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ISO 14310:2008 (Modified), Petroleum and natural gas industries—Downhole equipment—Packers and bridge plugs

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ERRATA 1

Page 47, Section B.3.3.4.10 g), shall be replaced with the following:

g) Perform one pressure reversal from the maximum rated pressure from above to the maximum rated pressure from below.

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Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, standards@api.org.

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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 14310 was prepared by Technical Committee ISO/TC 67, Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries, Subcommittee SC 4, Drilling and production equipment.

Introduction

This specification has been developed by users/purchasers and suppliers/manufacturers of packers and bridge plugs and is intended for use in the petroleum and natural gas industry worldwide. This specification is intended to give requirements and information to both parties in the selection, manufacture, testing, and use of packers and bridge plugs. Further, this specification addresses supplier/manufacturer requirements that set the minimum requirements with which it is necessary that suppliers/manufacturers comply to claim conformity with this specification.

This specification has been structured to allow for grades of increased requirements both in quality control and design validation. These variations allow the user/purchaser to select the grade required for a specific application.

The three quality grades provide the user/purchaser with a choice of requirements to meet a specific preference or application. Quality grade Q3 is the minimum grade of quality offered by this product standard. Quality grade Q2 provides additional inspection and verification steps, and quality grade Q1 is the highest grade provided. Additional quality requirements can be specified by the user/purchaser as supplemental requirements.

Seven standard design-validation grades (V0 to V6) provide the user/purchaser with a choice of requirements to meet a specific preference or application. Design validation grade V6 is the minimum grade and represents equipment where the validation method has been defined by the supplier/manufacturer. The complexity and severity of the validation testing increases as the grade number decreases.

This edition now includes annexes with requirements for HPHT environment equipment, HPHT operational tools, and for external flow testing.

It is necessary that users of this specification be aware that requirements above those outlined in this standard can be needed for individual applications. This specification is not intended to inhibit a supplier/manufacturer from offering, or the user/purchaser from accepting, alternative equipment or engineering solutions. This can be particularly applicable where there is innovative or developing technology. Where an alternative is offered, it is necessary that the supplier/manufacturer identify any variations from this specification.

Petroleum and natural gas industries—Downhole equipment—Packers and bridge plugs

1 Scope

This specification provides requirements and guidelines for packers and bridge plugs as defined herein for use in the petroleum and natural gas industry. This specification provides requirements for the functional specification and technical specification, including design, design verification and validation, materials, documentation and data control, repair, shipment, and storage. In addition, products covered by this specification apply only to applications within a conduit. Installation and maintenance of these products are outside the scope of this specification.

This specification includes the following annexes:

— Annex A: Use of API Monogram by Licensees;

— Annex B: Requirements for HPHT Environment Equipment;

— Annex C: Requirements for HPHT Environment Operational Tools;

— Annex D: External Flow Testing Requirements.

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.

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

API Specification 5CT, *Specification for Casing and Tubing*

API Specification 20A, *Carbon Steel, Alloy Steel, Stainless Steel, and Nickel Base Alloy Castings for Use in the Petroleum and Natural Gas Industry*, 1st Edition

ANSI/NACE MR0175/ISO 15156 2009 [1], *Petroleum and natural gas industries—Materials for use in H_2S-containing environments in oil and gas production—Part 3: Cracking-resistant CRAS (corrosion-resistant alloys) and other alloys*

ASME *Boiler and Pressure Vessel Code* [2], *Section V: Nondestructive Examination*

[1] American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, New York 10036, www.ansi.org.
[2] ASME International, 2 Park Avenue, New York, New York 10016-5990, www.asme.org.