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

*Industries du pétrole et du gaz naturel — Équipement de fond de
trou — Garnitures d'étanchéité (packers) et bouchons mécaniques
d'isolation de fond*



PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Symbols and abbreviated terms	5
5 Functional specification.....	5
5.1 General.....	5
5.2 Type description	5
5.3 Well parameters	6
5.4 Operational parameters.....	6
5.5 Environmental compatibility.....	6
5.6 Compatibility with related well equipment.....	7
5.7 Design validation	7
5.8 Quality control.....	7
6 Technical specification	7
6.1 General.....	7
6.2 Technical characteristics	8
6.3 Design requirements	8
6.4 Design verification.....	11
6.5 Design validation requirements	11
6.6 Design changes	17
6.7 Design validation by scaling	17
6.8 Other validations.....	18
6.9 Assembly verification.....	18
7 Supplier's/manufacture's requirements.....	18
7.1 General.....	18
7.2 Documentation and data control.....	18
7.3 Product identification	20
7.4 Quality control.....	20
8 Repair	26
9 Shipment/storage.....	26
Bibliography	27

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*.

This second edition cancels and replaces the first edition (ISO 14310:2001), which has been technically revised.

Introduction

This International Standard 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 International Standard is intended to give requirements and information to both parties in the selection, manufacture, testing and use of packers and bridge plugs. Further, this International Standard addresses supplier/manufacture requirements that set the minimum requirements with which it is necessary that suppliers/manufacturers comply to claim conformity with this International Standard.

This International Standard 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/manufacture. The complexity and severity of the validation testing increases as the grade number decreases.

It is necessary that users of this International Standard be aware that requirements above those outlined in this International Standard can be needed for individual applications. This International Standard is not intended to inhibit a supplier/manufacture 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/manufacture identify any variations from this International Standard.

This document is a preview generated by EVS

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

1 Scope

This International Standard provides requirements and guidelines for packers and bridge plugs as defined herein for use in the petroleum and natural gas industry. This International Standard 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 International Standard apply only to applications within a conduit. Installation and maintenance of these products are outside the scope of this International Standard.

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 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 3601-1, *Fluid power systems — O-rings — Part 1: Inside diameters, cross-sections, tolerances and designation codes*

ISO 3601-3, *Fluid power systems — O-rings — Part 3: Quality acceptance criteria*

ISO 9000, *Quality management systems — Fundamentals and vocabulary*

ISO 9712, *Non-destructive testing — Qualification and certification of personnel*

ISO 11960, *Petroleum and natural gas industries — Steel pipes for use as casing or tubing for wells*

ISO 15156, (all parts), *Petroleum and natural gas industries — Materials for use in H₂S-containing environments in oil and gas production*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply.

3.1

assembly

product comprised of more than one component

3.2

bridge plug

mechanical device installed in, and used for blocking fluid (liquid or gas) communication in, the conduit and not installed in a designed receptacle