

Specification for Rotary Drill Stem Elements

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Foreword

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ISO 10424-1 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*.

ISO 10424 consists of the following parts, under the general title *Petroleum and natural gas industries — Rotary drilling equipment*:

Part 1: *Rotary drill stem elements*

Part 2: *Threading and gauging of rotary shouldered thread connections*

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Introduction

The function of this standard is to define the design and the mechanical properties of the material required for rotary drill stem elements. It also defines the testing required to verify compliance with these requirements. As rotary drill stem elements are very mobile, moving from rig to rig, design control is an important element required to ensure the interchangeability and performance of product manufactured by different sources.

A major portion of this standard is based upon API Spec 7, 40th edition, November 2001. However, API Spec 7 does not define the nondestructive testing requirements of materials used to manufacture the drill stem components covered by this standard. This standard does address these requirements.

Attention users: Prior versions of API Spec 7-1, First Edition—specifically those with Addenda 1 through 3—did not have the changes incorporated into the document; instead, the changes were included as attachments to the standard that the user would be directed to by the use of markers along the margin of the document. The version of API Spec 7-1, First Edition that includes Addenda 1 through 4 *does* have the changes incorporated into the standard, as well as having the addenda as attachments. Also in the version of the document with the four addenda are updates to style and formatting that resulted in changes to the numbering of some sections and tables, as shown in the Intro Table on the next page. Those changes were applied to cross-references within the standard.

**Intro Table—Comparison between Versions of API Spec 7-1, First Edition
with Addenda 1 to 3 and API Spec 7-1, First Edition with Addenda 1 to 4**

| API Spec 71, 1st Edition with Addenda 1 to 3 (previous reference) | API Spec 7-1, 1st Edition with Addenda 1 to 4 (current reference) |
|--|--|
| Section 1 | Section 1.1 |
| NA | Section 1.2 |
| 12.2.1, 12.2.2, 12.2.3, 12.2.4, 12.2.5, 12.2.6, 12.2.7, 12.2.8 | 4.1.6, 4.1.11, 4.1.12, 4.1.25, 4.1.34, 4.1.43, 4.1.54, 4.1.57 (respectively) |
| 4.1.6 to 4.1.9, 4.1.10 to 4.1.21, 4.1.22 to 4.1.29, 4.1.30 to 4.1.37, 4.1.38 to 4.1.47, 4.1.48 and 4.1.49 | 4.1.7 to 4.1.10, 4.1.13 to 4.1.24, 4.1.26 to 4.1.33, 4.1.35 to 4.1.42, 4.1.44 to 4.1.53, 4.1.55 and 4.1.56 (respectively) |
| 5.6, 5.6.1, 5.6.2, 5.6.3 | 5.6.1, 5.6.2, 5.6.3, 5.6.4 (respectively) |
| 12.3 to 12.9 (inclusive) | 12.2 to 12.8 (respectively) |
| C.5, C.5.1, C.5.2, C.5.3, C.5.3.1 | C.5.1, C.5.2, C.5.3, C.5.4.1, C.5.4.2 (respectively) |
| C.6, C.6.1, C.6.2, C.6.3, C.6.4 | C.6.1, C.6.2, C.6.3, C.6.4, C.6.5 (respectively) |
| Table 31 (A.31) | Table 22 (A.22) |
| Tables 22 to 26 (A.22 to A.26) | Tables 23 to 27 (A.23 to A.27), respectively |
| Tables 27 to 30 | Tables 28 to 31 (respectively) |
| Tables A.32 to A.36 | Tables A.28 to A.32 (respectively) |

Petroleum and natural gas industries — Rotary drilling equipment —

Part 1: Rotary drill stem elements

1 Scope

1.1 Coverage

This standard specifies requirements for the following drill stem elements: upper and lower kelly valves; square and hexagonal kellys; drill stem subs; standard steel and non-magnetic drill collars; drilling and coring bits.

This standard is not applicable to drill pipe and tool joints, rotary shouldered connection designs, thread gauging practice, or grand master, reference master and working gauges.

A typical drill stem assembly to which this standard is applicable is shown in Figure 1.

1.2 Application of the API Monogram

If the product is manufactured at a facility licensed by API and is intended to be supplied bearing the API Monogram, the requirements of Annex B apply.