Specification for Sucker Rods, Polished Rods and Liners, Couplings, Sinker Bars, Polished Rod Clamps, Stuffing Boxes, and Pumping Tees

API SPECIFICATION 11B
TWENTY-SEVENTH EDITION, MAY 2010

EFFECTIVE DATE: NOVEMBER 1, 2010

ERRATA 1, OCTOBER 2010
ERRATA 2, FEBRUARY 2011

REAFFIRMED, JANUARY 2019

energy API
AMERICAN PETROLEUM INSTITUTE

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Upstream Segment

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Introduction

This specification has been developed by users, purchasers, suppliers and manufacturers of sucker rods, polished rods and liners, coupings, sinker bars, polished rod clamps, stuffing boxes, and pumping tees intended for use in the petroleum and natural gas industry worldwide. This specification is intended to give requirements and information to all parties in the design, manufacture and selection of sucker rods, polished rods and liners, coupings, sinker bars, polished rod clamps, stuffing boxes, and pumping tees. Furthermore, this specification addresses the minimum requirements with which the manufacturer is to claim conformity with this specification.

Included within this specification are normative annexes specifying equipment requirements and an informative annex providing a system illustration.

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

In this specification, quantities expressed in United States Customary (USC) units are also, where practical, expressed in International System (SI) units, either in parentheses in the text or on separate data sheets. USC units shall be the controlling units, SI units are included as a convenience for the user of this specification.

Specification for Sucker Rods, Polished Rods and Liners, Couplings, Sinker Bars, Polished Rod Clamps, Stuffing Boxes, and Pumping Tees

1 Scope

This specification provides the requirements and guidelines for the design of steel sucker rods and pony rods, polished rods, polished rod liners, couplings and sub-couplings, fiber reinforced plastic (FRP) sucker rods, sinker bars, polished rod clamps, stuffing boxes, and pumping tees as defined herein for use in the sucker rod lift method for the petroleum and natural gas industry. Annex A through Annex H provide the requirements for specific products. Annex I includes the requirements for thread gauges, Annex J illustrates the components of a sucker rod lift system, and Annex K shows examples of sucker rod discontinuities.

This specification does not cover sucker rod guides, sucker rod rotators, shear tools, on-off tools, stabilizer bars, sealing elements used in stuffing boxes, or interface connections for stuffing boxes and pumping tees. Also, installation, operation and maintenance of these products are not included in this specification.

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/ISO 29001:2007, *Specification for Quality Programs for the Petroleum and Natural Gas Industry*

API Specification 5B, *Threading, Gauging and Thread Inspection of Casing, Tubing and Line Pipe Threads*

ANSI/ASME B1.1 [1], *Unified Inch Screw Threads, (UN and UNR Thread Form)*

ANSI/ASQ Z1.4 [2]*Sampling Procedures and Tables for Inspection by Attributes*

ASTM A370 [3], *Standard Test Methods and Definitions for Mechanical Testing of Steel Products*

ASTM A395, *Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures*

ASTM A536, *Standard Specification for Ductile Iron Castings*

ASTM A751, *Standard Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products*

ASTM D2583, *Test Method for Indention Hardness of Rigid Plastics by Means of a Barcol Impressor*

ASTM D2584, *Test Method for Ignition Loss of Cured Reinforced Resins*

ASTM D4475, *Test Method for Apparent Horizontal Shear Strength of Pultruded Reinforced Plastic Rods by the Short-Beam Method*

ASTM E18, *Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials*

ASTM E384, *Standard Test Method for Microindentation Hardness of Materials*

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2 American Society for Quality, P.O. Box 300, Milwaukee, Wisconsin 53201-3005, www.asq.org.
3 ASTM International, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, www.astm.org.