

Specification for Subsurface Sucker Rod Pumps and Fittings

API SPECIFICATION 11AX
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Specification for Subsurface Sucker Rod Pumps and Fittings

1 Scope

This specification covers rod pumps and tubing pumps in commonly used bore sizes. Sufficient dimensional requirements are provided to assure interchangeability and standardization of all component parts; however, details of design are not specified. Standard materials are specified.

The formulation and publication of API specifications and the API monogram program are not intended in any way to inhibit the purchase of products from companies not licensed to use the API monogram.

2 References

2.1 This specification includes by reference, either in total or in part, the most recent editions of the following API, industry, and government standards, unless a specific edition is listed:

API

- Spec 5B *Specification for Threading, Gaging, and Thread Inspection of Casing, Tubing, and Line Pipe Threads*
- RP 11AR *Recommended Practice for Care and Handling Sucker Rod Pumps*

ASME¹

- B1.1 *Unified Inch Screw Threads (UN and UNR Thread Form)* (1989 Edition)

ASNT²

- SNT-TC-1A *Personnel Qualifications and Certification in Nondestructive Testing* (1988 Edition)

ASTM³

- A 370 *Standard Test Methods and Definitions for Mechanical Testing of Steel Products* (1992 Edition)
- E 18 *Standard Methods of Tests for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials* (1992 Edition)
- E 165 *Standard Practice for Liquid Penetrant Inspection Method* (1991 Edition)

¹American Society of Mechanical Engineers, 1950 Stemmons Freeway, Dallas, Texas 75207-3109.

²American Society for Nondestructive Testing, 1711 Arlingate Lane, Columbus, Ohio 43228-0518.

³ASTM, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428.

- E 384 *Standard Test Method for Microhardness of Materials* (1989 Edition)

Military Standard

- 105E *Single Sampling Plan for Normal Inspection*

NACE⁴

- MR-01-76 *Standard Recommended Practice Sulfide Stress Cracking Resistant Metallic Materials for Oilfield Equipment* (1992 Edition)

3 Pump Designation

3.1 The basic types of pumps and letter designation covered by this specification are shown in Table 1.

3.2 Complete pump designations, as shown in Figure 1, include:

- Nominal tubing size.
- Basic bore diameter.
- Type of pump, including type of barrel and location and type of seating assembly.
- Barrel length.
- Plunger length.
- Total length of extensions when used.

Example: A 1¼ in. (31.8 mm) bore rod type pump with a 10 ft (3.048 m) heavy wall barrel and 2 ft (0.610 m) of extensions, a 4 ft (1.219 m) plunger, and a bottom cup type seating assembly for operation in 2¾ in. (60.3 mm) tubing, would be designated as follows:

20-125 RHBC 10-4-2

Note: Metallic materials for subsurface sucker rod pumps for hydrogen sulfide environments are listed in NACE MR-01-76.

3.3 In addition to the pump designation described in 3.2, the purchaser must provide the following additional information:

- Barrel material.
- Plunger material.
- Plunger clearance (fit).
- Valve material.
- Length of each extension.

⁴National Association of Corrosion Engineers, P. O. Box 218340, Houston, Texas 77218-8340.