

Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments

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ABSTRACT

This standard specifies metallic material requirements for the construction of sucker-rod pumps for service in corrosive oilfield environments. American Petroleum Institute (API) Spec 11AX provides dimension requirements that ensure the interchangeability of component parts. However, that document does not provide material specifications or guidelines for the proper application of various API pumps. API RP 11AR lists the general advantages and disadvantages of the various pump types and lists the acceptable materials for barrels and plungers; API RP 11BR and NACE SP0195 supplement API Spec 11AX by providing corrosion control methods using chemical treatment. This standard is intended for end users (e.g., production engineers) and equipment manufacturers to supplement the use of the aforementioned API and NACE publications.

KEYWORDS

Sucker-rod pump, barrel, plunger, TG 084

Foreword

This standard specifies metallic material requirements for the construction of sucker-rod pumps for service in corrosive oilfield environments. American Petroleum Institute (API)⁽¹⁾ Spec 11AX¹ provides dimension requirements that ensure the interchangeability of component parts. However, that document does not provide material specifications or guidelines for the proper application of various API pumps. API RP 11AR² does list the general advantages and disadvantages of the various pump types and lists the acceptable materials for barrels and plungers; API RP 11BR³ and NACE SP0195⁴ supplement API Spec 11AX by providing corrosion control methods using chemical treatment. This standard is intended for end users (e.g., production engineers) and equipment manufacturers to supplement the use of the aforementioned API and NACE publications.

This standard was originally published in 1976 and was revised in 1994 by NACE Task Group T-1F-15 on Sucker-Rod Pumps for Corrosive Environments, a component of Unit Committee T-1F, “Metallurgy of Oilfield Equipment.” It was reviewed by Task Group T-1F-28 and reaffirmed by T-1F in 2000, and was reaffirmed in 2006 and 2012 by Specific Technology Group (STG) 32, “Oil and Gas Production—Metallurgy.” It was revised in 2020 by TG 084, “Metallic Materials for Sucker-Rod Pumps for Corrosive Oilfield Environments.” This standard is issued by NACE International under the auspices of STG 32.

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⁽¹⁾ American Petroleum Institute (API), 1220 L St. NW, Washington, DC 20005-4070.

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