Petroleum, Petrochemical, and Natural Gas Industries—Steam Turbines—Special-purpose Applications

API STANDARD 612
EIGHTH EDITION, NOVEMBER 2020

Foreword

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use of any method, apparatus, or product covered by letters patent. Neither should anything contained in the publication be construed as insuring anyone against liability for infringement of letters patent.

The verbal forms used to express the provisions in this document are as follows.

— the term “shall” denotes a minimum requirement to conform to the standard;

— the term “should” denotes a recommendation or that which is advised but not required to conform to the standard;

— the term “may” is used to express permission or a provision that is optional;

— the term “can” is used to express possibility or capability.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 200 Massachusetts Avenue, Suite 1100, Washington, DC 20001. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A onetime extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually by API, 200 Massachusetts Avenue, Suite 1100, Washington, DC 20001.

Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, Suite 1100, Washington, DC 20001, standards@api.org.

Contents

Contents

Figures

Contents

Tables

Introduction

Users of this standard should be aware that further or differing requirements may be needed for individual applications. This standard is not intended to inhibit a supplier from offering, or the purchaser from accepting alternative equipment or engineering solutions for the individual application. This may be particularly appropriate where there is innovative or developing technology. Where an alternative is offered, the supplier should identify any variations from this standard and provide details.

This standard requires the purchaser to specify certain details and features. A bullet (●) at the beginning of a subsection or paragraph indicates that either a decision by, or further information from, the purchaser is required. Further information should be shown on the datasheets (see example in Annex A) or stated in the quotation request and purchase order.

In this standard, U.S. customary (USC) units are included in parentheses for information.

Petroleum, Petrochemical, and Natural Gas Industries—Steam Turbines—Special-purpose Applications

1 Scope

This standard specifies the minimum requirements for steam turbines for special-purpose applications for use in the petroleum, petrochemical, and gas industry services. It is not applicable to general purpose steam turbines, which are covered in API 611.

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. Standards referenced in the text portion of the document are undated but refer to the specific editions referenced in this section.

API Standard 520 (all parts), *Sizing, Selection, and Installation of Pressure-relieving Devices*

API Standard 526, *Flanged Steel Pressure-relief Valves*

ANSI [1] /API Standard 614, *Lubrication, Shaft-sealing and Oil-control Systems and Auxiliaries, Fifth Edition, April 2008 (Errata, May 2008)*

ANSI/API Standard 670, *Machine Protection Systems, Fourth Edition, December 2000*

ANSI/API Standard 671, *Special Purpose Couplings for Petroleum, Chemical and Gas Industry Services, Fourth Edition, August 2007*

API Recommended Practice 551, *Process Measurement*

API Recommended Practice 686, *Recommended Practice for Machinery Installation and Installation Design, Second Edition, December 2009*

API Recommended Practice 691, *Risk-based Machinery Management, First Edition, June 2017*

ANSI /AWS D1.1/D1.1M [2] , *Structural Welding Code—Steel*

ASME B1.1-2003 [3] , *Unified Inch Screw Threads (UN and UNR Thread Form)*

ASME B1.3M-1986, *Screw Thread Gaging Systems for Dimensional Acceptability—Inch and Metric Screw Threads (UN, UNR, UNJ, M and MJ)*

ASME B1.13M-2005, *Metric Screw Threads: M Profile*

ASME B16.5-2009, *Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard*

ASME B16.47-2011, *Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch Standard*

ASME B17.1 (R2008), *Keys and Keysets*

ASME B31.3-2010, *Process Piping*

---

[1] American National Standards Institute, 1899 L Street, NW, 11th Floor, Washington, DC 20036, www.ansi.org.

[2] American Welding Society, 8669 NW 36 Street, #130, Miami, Florida 33166-6672, www.aws.org.

[3] American Society of Mechanical Engineers, Two Park Avenue, New York, NY 10016-5990, www.asme.org.