

# **General-purpose Steam Turbines for Petroleum, Chemical, and Gas Industry Services**

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## **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 vendor 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 vendor 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 data sheet (see example in Annex A) or stated in the quotation request and purchase order.

# General-purpose Steam Turbines for Petroleum, Chemical, and Gas Industry Services

## 1 Scope

This standard covers the minimum requirements for general-purpose steam turbines. These requirements include basic design, materials, related lubrication systems, controls, auxiliary equipment, and accessories for use in the petroleum, chemical, and gas industry services.

This standard includes only general-purpose turbines. General-purpose turbines are horizontal or vertical turbines used to drive equipment that is usually spared or is in noncritical service. They are generally used where steam conditions will not exceed a pressure of 48 bar (700 psig) and a temperature of 400 °C (750 °F). Typically, the turbine shaft speed will not exceed 6000 r/min and power not exceeding 4000 HP (3000 kW) with a single-stage turbine.

This standard does not cover special-purpose turbines. Special-purpose turbines are those horizontal turbines used to drive equipment that is usually not spared, is relatively large in size (power), or is in critical service. This category is not limited by steam conditions or turbine speed. Requirements for special-purpose turbines are defined in API 612.

In case of conflict between this standard and the inquiry or order, the information included in the order shall govern.

## 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 Specification 5L, *Line Pipe*

API Recommended Practice 500, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2*

API Recommended Practice 505, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2*

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

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

API Recommended Practice 551, *Process Measurement Instrumentation*

API Standard 612, *Petroleum, Petrochemical, and Natural Gas Industries—Steam Turbines—Special-purpose Applications*

API Standard 614, *Lubrication, Shaft-sealing, and Control-oil Systems and Auxiliaries*

API 670, *Machinery Protection Systems*

API Standard 671, *Special-purpose Couplings for Petroleum, Chemical, and Gas Industry Services*