

# Pumps—Shaft Sealing Systems for Centrifugal and Rotary Pumps

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# Pumps—Shaft Sealing Systems for Centrifugal and Rotary Pumps

## 1 Scope

This standard specifies requirements and gives recommendations for sealing systems for centrifugal and rotary pumps used in the petroleum, natural gas, and chemical industries. See A.1.1 and A.1.2. It is the responsibility of the purchaser or seal vendor to ensure that the selected seal and auxiliaries are suitable for the intended service condition. It is applicable mainly for hazardous, flammable, and/or toxic services where a greater degree of reliability is required for the improvement of equipment availability and the reduction of both emissions to the atmosphere and life-cycle sealing costs. It covers seals for pump shaft diameters from 20 mm (0.75 in.) to 110 mm (4.3 in.).

This standard is also applicable to seal spare parts and can be referred to for the upgrading of existing equipment. A classification system for the seal configurations covered by this standard into categories, types, arrangements, and orientations is provided.

This standard is referenced normatively in API 610. It is applicable to both new and retrofitted pumps and to pumps other than API 610 pumps (e.g. ASME B73.1, ASME B73.2, and API 676 pumps).

This standard might also be referenced by other machinery standards such as other pumps, compressors, and agitators. Users are cautioned that this standard is not specifically written to address all of the potential applications that a purchaser may specify. This is especially true for the size envelope specified for API 682 seals. The purchaser and seal vendor shall mutually agree on the features taken from this standard and used in the application.

## 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 Recommended Practice 520 (all parts), *Sizing, Selection, and Installation of Pressure-relieving Devices in Refineries*

API Standard 526, *Flanged Steel Pressure Relief Valves*

API Standard 610, *Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries*

API Standard 614 *Lubrication, Shaft-sealing and Control-oil Systems and Auxiliaries for Petroleum, Chemical, and Gas Industry Services*

ASME V<sup>1</sup>, *ASME Boiler and Pressure Vessel Code, Section V, Non-destructive Examination*

ASME VIII, *ASME Boiler and Pressure Vessel Code, Section VIII, Rules for the Construction of Pressure vessels*

ASME IX, *ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications*

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

ASME B1.20.1, *Pipe Threads, General Purpose, Inch*

ASME B16.11, *Forged Fittings, Socket-welding and Threaded*

ASME B16.20, *Metallic Gaskets for Pipe Flanges—Ring Joint, Spiral-wound, and Jacketed*

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<sup>1</sup> ASME International, 3 Park Avenue, New York, New York 10016-5990, [www.asme.org](http://www.asme.org).