



PROCESS  
INDUSTRY  
PRACTICES

TECHNICAL REVISION  
November 2021

**Piping**

**PIP PNSM0116**  
**Purchasing Requirements for Piping and Pipeline**  
**Fittings and Flanges**

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In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

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# PIP PNSM0116 Purchasing Requirements for Piping and Pipeline Fittings and Flanges

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## 1. Scope

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This Practice describes the minimum requirements for the procurement of metallic pipe fittings and flanges.

## 2. References

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Applicable parts of the following Practice and industry codes and standards shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

### 2.1 Process Industry Practices (PIP)

- VESPMI01 - *Positive Material Identification Specification*

### 2.2 Industry Codes and Standards

- American Petroleum Institute (API)
  - API RP 578 - *Material Verification Program for New and Existing Alloy Piping Systems*
- American Society of Mechanical Engineers (ASME)
  - ASME Boiler and Pressure Vessel Code, Section IX - *Welding and Brazing Qualifications*
  - ASME B1.20.1 - *Pipe Threads, General Purpose (Inch)*
  - ASME B16.1 - *Gray Iron Pipe Flanges and Flanged Fittings*
  - ASME B16.5 - *Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard*
  - ASME B16.9 - *Factory Made Wrought Steel Buttwelding Fittings*
  - ASME B16.11 - *Forged Fittings, Socket-Welding and Threaded*
  - ASME B16.25 - *Buttwelding Ends*
  - ASME B16.36 - *Orifice Flanges*
  - ASME B16.47 - *Large Diameter Steel Flanges NPS 26 Through NPS 60 Metric/Inch Standard*
  - ASME B31.3 - *Process Piping*
  - ASME B31.4 - *Pipeline Transportation Systems for Liquids*
  - ASME B31.8 - *Gas Transmission and Distribution Systems*
- American Society for Testing and Materials (ASTM)
  - ASTM A153 - *Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*
- American Water Works Association (AWWA)
  - AWWA C207 - *Steel Pipe Flanges for Waterworks Service*
  - AWWA C228 - *Stainless-Steel Pipe Flanges for Water Service*