



PROCESS
INDUSTRY
PRACTICES

COMPLETE REVISION
August 2024

Pipeline Systems

PIP PLC00005
Design of ASME B31.4 and B31.8
Metallic Pipeline Systems within Facilities

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PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

This Practice has been prepared by harmonizing technical requirements from existing standards of major industrial operators, contractors, and standards development organizations. While this Practice is intended to incorporate the majority of requirements, individual applications may have requirements which take precedence over this Practice. Determinations concerning fitness for purpose or application of this Practice to specific project or engineering situations should not be made solely on information contained in this Practice. All Practices are intended to be consistent with applicable laws and regulations. Should this Practice conflict with 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 this Practice.

Use of trade names should not be viewed as an expression of preference. Other brands having the same specifications are equally correct and may be substituted for those named.

This Practice is subject to revision at any time. For more information refer to PIP ADG001, *Specification for Developing Practices*.

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1. Scope

This Practice provides requirements for designing metallic pipeline systems within facilities as defined in ASME B31.8 *Gas Transmission and Distribution Piping Systems* and ASME B31.4 *Pipeline Transportation Systems for Liquids and Slurries* [hereinafter referred to as the Code(s)].

This Practice provides requirements for pipeline systems arrangement, design conditions, components, and joints. This Practice shall be used in conjunction with the Code(s).

The requirements of this Practice may be more stringent than the Code(s) for the purpose of standardization and not because the Code(s) is considered unsafe.

Pipeline systems designed in accordance with other piping codes are not included in this Practice.

2. References

Applicable parts of the following Practices, industry codes and standards, references, and government regulations 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 will be used herein where appropriate.

2.1 Process Industry Practices (PIP)

- PIP PLC00004 - *Piping Stress Analysis Criteria for ASME B31.4 and B31.8 Metallic Piping*
- PIP PLE00007 - *Pig Trap Design Guideline*
- PIP PLE00012 - *Piping Examination and Leak Testing Guide – ASME B31.8*
- PIP PLSC0001 - *Fabrication and Examination of ASME B31.8 Metallic Piping*
- PIP PLSC0011 - *Trenching and Excavation for Pipelines*
- PIP PLSC0021 - *Pressure Testing of ASME B31.8 Metallic Piping*
- PIP PNE00003 - *Process Unit and Offsites Layout Guide*
- PIP REIF605 - *Recommended Practices for Machinery Installation and Installation Design*
- PIP - *Pipeline Material Specifications (PMSs)*

2.2 Industry Codes and Standards

- American Lifelines Alliance
 - *Guideline for the Design of Buried Steel Pipe*
- American Petroleum Institute (API)
 - *API 570 - Piping Inspection Code: In-service Inspection, Rating, Repair, and Alteration of Piping Systems*
 - *API 602 - Steel Gate, Globe, and Check Valves for Sizes NPS 4 (DN 100) and Smaller for the Petroleum and Natural Gas Industries*
 - *API 650 - Welded Steel Tanks for Oil Storage*