



PROCESS
INDUSTRY
PRACTICES

REAFFIRMATION
March 2024

Vessels

PIP VESIN001
Design and Fabrication Specification for
Pressure Vessel Internals

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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 the mechanical design, fabrication, examination, inspection, and documentation requirements for pressure vessel process trays, tower structured packing, tower random packing, distributors, and related components welded to the pressure boundary.

2. References

Applicable parts of the following Practices 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)

- VEFV1100 - *Vessel/Shell & Tube Heat Exchanger Standard Details (US Customary Units)*
 - VEFV1102 - *Vessel Tolerances*
- VEFV1100M - *Vessel/Shell & Tube Heat Exchanger Standard Details (Metric Units)*
 - VEFV1102M - *Vessel Tolerances*

2.2 Industry Codes and Standards

- American Institute of Steel Construction
 - AISC 360 - *Specification for Structural Steel Buildings*
- American Society of Mechanical Engineers (ASME)
 - ASME Boiler and Pressure Vessel Code
 - Section V - *Nondestructive Examination*
 - Section VIII - *Rules for Construction of Pressure Vessels, Division 1*
 - Section VIII - *Rules for Construction of Pressure Vessels, Division 2 Alternative Rules*
 - Section IX - *Welding, Brazing, and Fusing Qualifications*
 - ASME B16.5 - *Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard*
 - ASME B16.47 - *Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch Standard*

3. Definitions

Code: The ASME Boiler and Pressure Vessel Code, Section VIII Division 1 (or 2), its references and any Code Cases permitted by the user and authorizing agencies.

construction: An all-inclusive term comprising materials, mechanical design, fabrication, examination, inspection, testing, and certification

owner: Party who owns facility wherein vessel will be used. Owner is typically also user.