



PROCESS  
INDUSTRY  
PRACTICES

TECHNICAL REVISION  
June 2021

**Vessel**

**PIP VESSP002**  
**Supplemental Design and Fabrication Specification**  
**for Shell and Plate Heat Exchangers**  
**ASME Code Section VIII, Divisions 1 and 2**

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## PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

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. Determination concerning fitness for purpose and particular matters or application of the Practice to a 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.

This Practice is subject to revision at any time.

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## 1. Scope

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This Practice describes the mechanical design, fabrication, examination, inspection, testing, and documentation requirements for shell and plate heat exchangers constructed in accordance with ASME *Boiler and Pressure Vessel Code*, Section VIII, Division 1 or Division 2, henceforth referred to as the *Code*. Requirements that are specific to *Code*, Section VIII, Division 2 are shown in braces { }.

This Practice is supplemental to the requirements of *PIP VESV1002*, Design and Fabrication Specification for Pressure Vessels, ASME Code Section VIII Divisions 1 and 2.

## 2. References

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Applicable parts of the following Practices, industry codes and standards, 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 are used herein where appropriate.

### 2.1 Process Industry Practices (PIP)

- PIP VECV1001 - *Design Criteria and Purchasing Requirements for Vessels*, ASME Code Section VIII, Divisions 1 and 2
- PIP VEDSP003 - *Documentation Requirements for Shell and Plate Heat Exchangers*, ASME Code Section VIII, Divisions 1 and 2
- PIP VEFV1100/M - *Vessel/S&T Heat Exchanger Standard Details*
  - PIP VEFV1101/M - *Vessel Nameplate Bracket*
  - PIP VEFV1102/M - *Vessel Tolerances (Orientation)*
  - PIP VEFV1103/M - *Vessel Grounding Lug*
  - PIP VEFV1105/M - *Horizontal Vessel, Saddles Supported on Concrete*
  - PIP VEFV1106/M - *Horizontal Vessel Saddles Supported on Steel*
  - PIP VEFV1108/M - *Skirt Attachments*
- PIP VESPM001 - *Positive Material Identification Specification*
- PIP VESV1002 - *Design and Fabrication Specification for Vessels*, ASME Code Section VIII, Divisions 1 and 2

### 2.2 Industry Codes and Standards

For each of the following reference documents, if *Code* Table U-3 {1.1} lists an edition or a date different than the edition listed in the reference, the edition listed in *Code*, Table U-3 {1.1} shall be used.

- American Society of Mechanical Engineers (ASME)
  - ASME *Boiler and Pressure Vessel Code* (Code)
    - Section II - *Materials, Parts A, B, C, D*
    - Section V - *Nondestructive Examination*
    - Section VIII - *Rules for the Construction of Pressure Vessels, Divisions 1 and 2*
    - Section IX - *Welding, Brazing and Fusing Qualifications*