



PROCESS
INDUSTRY
PRACTICES

REAFFIRMATION w/EDITORIAL REVISION
April 2018

Vessel

PIP VEDST003
Documentation Requirements for
Shell and Tube Heat Exchangers
ASME Code Section VIII, Divisions 1 and 2

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. 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.

This Practice is subject to revision at any time.

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PUBLISHING HISTORY

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Appendices

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Data Forms

- VEDST003-D – Shell and Tube Heat Exchanger Data Sheet
- VEDST003-F – Shell and Tube Heat Exchanger Welded Pressure Joint Requirements

1. Scope

This Practice provides data forms and the associated instructions for specifying requirements for shell-and-tube 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 contains three data forms for providing requirements for cylindrical heat exchangers having internal design pressures equal to or greater than 15 psig (103 kPa) and/or full vacuum external pressure at the top of the exchanger in its normal operating position, and are welded, shop- and field-fabricated, and in accordance with the requirements of the *Code*, Section VIII, Division 1 {or Division 2}.

This Practice is required to be used with *PIP VECV1001*, *PIP VESV1002*, *PIP VECST001*, and *PIP VESST002* to specify requirements, not otherwise specified, that are required by the Manufacturer to design and fabricate an exchanger.

This Practice also provides instructions to the Purchaser and the Manufacturer for inserting data and information in the data forms.

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)

- PIP VECV1001 - *Design Criteria and Purchasing Requirements for Vessels, ASME Code, Section VIII, Divisions 1 and 2*
- PIP VESV1002 - *Design and Fabrication Specification for Vessels, ASME Code, Section VIII, Divisions 1 and 2*
- PIP VECST001 - *Supplemental Design Criteria and Purchasing Requirements for Shell and Tube Heat Exchangers, ASME Code, Section VIII, Divisions 1 and 2*
- PIP VESST002 - *Supplemental Design and Fabrication Specification for Shell and Tube Heat Exchangers, ASME Code, Section VIII, Divisions 1 and 2*
- PIP VEFV1100 - *Vessel/S&T Heat Exchanger Standard Details*

2.2 Industry Codes and Standards

- The American Society of Mechanical Engineers (ASME)
 - ASME Boiler and Pressure Vessel Code
- Tubular Exchanger Manufacturers Association (TEMA)
 - TEMA *Standards for Tubular Exchanger Manufacturers Association*

3. Definitions

Code: The ASME *Boiler and Pressure Vessel Code*, Section VIII, Division 1 {or 2} and referenced sections (e.g., Section II and Section IX) and any *Code* Cases permitted by the User. References to Division 2 are identified in braces { }.