



PROCESS
INDUSTRY
PRACTICES

TECHNICAL REVISION
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Vessel

PIP VESHP001
Hairpin Heat Exchanger Specification

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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Table of Contents

1. Scope	2
2. References	2
2.1 Process Industry Practices	2
2.2 Industry Codes and Standards	2
3. Definitions	3
4. Requirements	3
4.1 General	3
4.2 Design	4
4.3 Materials	6
4.4 Fabrication	8
4.5 Inspection and Testing	9
4.6 Painting	10
4.7 Preparation for Shipment	10
4.8 Documentation	11
Appendix A – Documentation Schedule and Manufacturer’s Data Package	12

Data Form

VESHP001-D – Hairpin Heat Exchangers

1. Scope

This Practice provides requirements for use by a purchaser for determining the design criteria for double-pipe and multitube, and hairpin-type 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*.

Most standardized, predesigned (off-the-shelf) double-pipe and multitube hairpin-type heat exchangers meet the requirements of this Practice.

2. References

Applicable parts of the following 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.

The documents listed in this Section are only those specifically referenced in this Practice. In applications where there are laws or regulations issued by municipal, state, provincial, or federal authorities covering heat exchangers, these laws or regulations shall be reviewed prior to the initiation of design work since the requirements may be different or more restrictive than the specifications covered in this Practice.

2.1 Process Industry Practices (PIP)

- VESHP001-D - *Hairpin Heat Exchangers Data Sheet*
- VEFV1100 - *Vessel/S&T Heat Exchanger Standard Details (US Customary Units)*
- VEFV1100M - *Vessel/S&T Heat Exchanger Standard Details (Metric Units)*
 - VEFV1101 - *Vessel Nameplate Bracket (US Customary Units)*
 - VEFV1101M - *Vessel Nameplate Bracket (Metric Units)*
 - VEFV1103 - *Vessel Grounding Lug (US Customary Units)*
 - VEFV1103M - *Vessel Grounding Lug (Metric Units)*

2.2 Industry Codes and Standards

For the following reference documents, if Table U-3 of *ASME Boiler and Pressure Vessel Code Section VIII – Pressure Vessels, Division 1* lists an edition or addenda different from the latest edition issued, the edition listed in Table U-3 shall be used. For documents not listed in Table U-3, the latest edition or addenda issued at the date of contract award shall be used.

- American Society of Mechanical Engineers (ASME)
 - *ASME Boiler and Pressure Vessel Code Section V - Nondestructive Examination*
 - *ASME Boiler and Pressure Vessel Code Section VIII - Pressure Vessels, Division 1*
 - *ASME B1.20.1 - Pipe Threads, General Purpose (Inch)*
 - *ASME B16.5 - Pipe Flanges and Flanged Fittings, NPS 1/2 through NPS 24*
 - *ASME B16.11 - Forged Fittings, Socket-Welding and Threaded*
 - *ASME B16.25 - Buttwelding Ends*