



PROCESS
INDUSTRY
PRACTICES

December 2016

Vessel

PIP VESEH001
Electric Immersion Process Heater 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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1. Scope

This Practice provides minimum technical requirements for the process and mechanical design, materials, fabrication, inspection, and testing of electric immersion process heaters and associated controls, including thyristor control panels. This Practice applies to electric immersion process heaters which are inserted and flange mounted on tanks and vessels, installed in dedicated pressure vessels, and installed in pipe.

2. References

Applicable parts of the following Practices, 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 ELSPS01 – *Electrical Requirements for Packaged Equipment*
- PIP PCSPS001 – *Packaged Equipment Instrumentation Specification*
- PIP CTSE1000 – *Application of External Coating*
- PIP VECV1001 – *Design Criteria and Purchasing Requirements for Vessels*
- PIP VESV1002 – *Design and Fabrication Specification for Vessels*
- PIP VEDV1003 – *Documentation Requirements for Vessels*
- PIP PCSCP001 – *Control Panel Specification*

2.2 Industry Codes and Standards

For the following reference document, if *Code*, Table U-3 {1.1} lists an edition or addenda 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, Part A – Ferrous Material Specifications
 - Section II, Part D – Properties
 - Section V – Nondestructive Examination
 - Section VIII – Pressure Vessels, Divisions 1 and 2
 - Section IX – Welding and Brazing Qualifications
- Tubular Exchanger Manufacturers Association (TEMA)
 - *Standards of the Tubular Exchanger Manufacturers Association*

3. Definitions

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