



PROCESS  
INDUSTRY  
PRACTICES

TECHNICAL REVISION  
*December 2019*

***Vessel***

**PIP VESFG001**  
**Fiberglass Tank and Vessel 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.

© Process Industry Practices (PIP), Construction Industry Institute, The University of Texas at Austin, 3925 West Braker Lane (R4500), Austin, Texas 78759. PIP Member Companies and Subscribers may copy this Practice for their internal use. Changes or modifications of any kind are not permitted within any PIP Practice without the express written authorization of PIP. Authorized Users may attach addenda or overlays to clearly indicate modifications or exceptions to specific sections of PIP Practices. Authorized Users may provide their clients, suppliers and contractors with copies of the Practice solely for Authorized Users' purposes. These purposes include but are not limited to the procurement process (e.g., as attachments to requests for quotation/ purchase orders or requests for proposals/contracts) and preparation and issue of design engineering deliverables for use on a specific project by Authorized User's client. PIP's copyright notices must be clearly indicated and unequivocally incorporated in documents where an Authorized User desires to provide any third party with copies of the Practice.

### **PUBLISHING HISTORY**

<i>March 1999</i>	<i>Issued</i>
<i>November 2000</i>	<i>Technical Correction</i>
<i>March 2007</i>	<i>Technical Revision</i>
<i>June 2011</i>	<i>Complete Revision</i>
<i>December 2019</i>	<i>Technical Revision</i>

Not printed with State funds



# PIP VESFG001

## Fiberglass Tank and Vessel Specification

---

### Table of Contents

- 1. Scope .....2**
- 2. References .....2**
  - 2.1 Process Industry Practices .....2
  - 2.2 Industry Codes and Standards .....3
  - 2.3 Other References .....3
- 3. Definitions .....4**
- 4. Requirements .....4**
  - 4.1 General .....4
  - 4.2 Design .....6
  - 4.3 Materials .....14
  - 4.4 Fabrication .....17
  - 4.5 Inspections and Tests .....20
  - 4.6 Supplier’s Nameplates .....26
  - 4.7 Shipping .....27
  - 4.8 Documentation .....29

### Drawings

- VESFG001-1 - Fiberglass Tanks and Vessels Skirt Opening Details
- VESFG001-2 - Fiberglass Tanks and Vessels Skirt Hold Down Details
- VESFG001-3 - Fiberglass Tanks and Vessels Agitator Baffle Details
- VESFG001-4 - Fiberglass Tanks and Vessels Support Ledge Details

### Data Sheets

- VESFG001-R - Fiberglass Tank and Vessel Documentation Requirements Sheet
- VESFG001-T - Fiberglass Tank and Vessel Inspection and Testing Requirements Sheet

## 1. Scope

---

This Practice provides requirements for the design, materials, fabrication, examination, inspection, testing, certification (ASME stamp and Supplier's Data Report), and pressure relief of aboveground fiberglass reinforced polyester, vinyl ester, and epoxy tanks and vessels having internal or external pressure from full vacuum up to the limits of *Code Section X*. This Practice covers shop- and field-fabricated equipment, thermoplastic-lined equipment, and dual laminate equipment.

This Practice does not cover the following equipment items that are excluded from both *ASME RTP-1* and *Code Section X*:

- a. Portable or movable containers
- b. Hoods, ducts, and stacks
- c. Fans and blowers
- d. Vessel internals such as entrainment separators, chevron blades, packing support plates, and liquid distributor plates
- e. Pipe or piping
- f. Fully buried underground closed vessels

This Practice does not cover the following equipment items that are excluded from *Code Section X*:

- a. Vessels having an inside diameter (ID), width, height, or cross-section diagonal of 6 inches (150 mm) or less, with no limitation on length or pressure. The 6-inch (150 mm) dimension excludes (150 mm) the thickness of any corrosion liner.
- b. Vessels containing lethal substances as designated by the owner in accordance with *Code Section X* Paragraph RG-113.

This Practice does not cover the following equipment items that are excluded from *ASME RTP-1*:

- a. Vessels constructed of furan, epoxy, or phenolic resins
- b. Vessels with non-glass structural reinforcements
- c. Vessels having metallic liners

## 2. References

---

Applicable parts of the following Practices and references 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 STF05501 - *Fixed Metal Ladders and Cages Details*
- PIP STF05520 - *Pipe Railing for Walking and Working Surfaces Details*
- PIP STF05521 - *Angle Railing for Walking and Working Surfaces Details*
- PIP STF05535 - *Vessel Platform Details*