



PROCESS  
INDUSTRY  
PRACTICES

COMPLETE REVISION  
October 2024

**Structural**

**PIP STF05121**  
**Anchor Fabrication and Installation into Concrete**

---

Currently in preview, click buy full version

## PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

This Practice has been prepared by harmonizing technical requirements from existing standards of major industrial operators, contractors, and standards development organizations. While this Practice is intended to incorporate the majority of requirements, individual applications may have requirements which take precedence over this Practice. Determinations concerning fitness for purpose or application of this Practice to specific project or engineering situations should not be made solely on information contained in this Practice. All Practices are intended to be consistent with applicable laws and regulations. Should this Practice conflict with 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 this Practice.

Use of trade names should not be viewed as an expression of preference. Other brands having the same specifications are equally correct and may be substituted for those named.

This Practice is subject to revision at any time. For more information refer to PIP ADG001, *Specification for Developing Practices*.

© 2003 Process Industry Practices (PIP), Construction Industry Institute, and The University of Texas at Austin on behalf of the Board of Regents of the University of Texas System

Process Industry Practices  
3925 West Braker Lane (R4500)  
Austin, Texas 78759

### **PUBLISHING HISTORY**

August 2003	Issued	November 2017	Editorial Revision
October 2006	Technical Correction	October 2024	Complete Revision
June 2011	Complete Revision		

Printed with State funds



# PIP STF05121

## Anchor Fabrication and Installation into Concrete

---

### Table of Contents

<b>1. Scope .....</b>	<b>2</b>
<b>2. References .....</b>	<b>2</b>
2.1 Process Industry Practices .....	2
2.2 Industry Codes and Standards .....	2
<b>3. Definitions .....</b>	<b>3</b>
<b>4. Requirements .....</b>	<b>4</b>
4.1 Anchor Dimensional Data and Details .....	4
4.2 Anchor Callout .....	5
4.3 Materials .....	5
4.4 Fabrication .....	6
4.5 Installation .....	7

### Tables

Table 1 – Anchor Dimensional Data – U.S. Customary Units .....	8
Table 1M – Anchor Dimensional Data – Metric (SI) Units .....	9

### Drawing

STF05121-01 – Anchor and Sleeve Details	
---	--

## 1. Scope

---

This Practice provides details and requirements for anchor fabrication and installation into concrete. Anchors are anchor rod assemblies that include a rod threaded at the two ends, nuts, washers, and anchor plates if required. J-bolts and L-bolts are not included. Three standard lengths are shown for each diameter anchor rod in both U.S. Customary units and Metric (SI) units.

This Practice also provides requirements for non-standard anchor rod lengths.

The “Comments” shown in boxes in the Practice are provided for use by the anchor design engineer only.

## 2. References

---

Applicable requirements in 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 STE05121 - *Application of ASCE Anchor Design for Petrochemical and Other Industrial Facilities*
- PIP STS03001 - *Plain and Reinforced Concrete Specification*

### 2.2 Industry Codes and Standards

- American Society of Testing and Materials (ASTM)
  - ASTM A36/A36M - *Standard Specification for Carbon Structural Steel*
  - ASTM A563/A563M - *Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric)*
  - ASTM F436/F436M - *Standard Specification for Hardened Steel Washers (Inch and Metric Dimensions)*
  - ASTM F1554 - *Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi (414, 483, and 758 MPa) Strength*
  - ASTM F2329/ F2329M - *Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners*
- American Society of Mechanical Engineers (ASME)
  - ASME B1.13M - *Metric Screw Threads: M Profile*
  - ASME B18.2.1 - *Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series)*
  - ASME B18.2.3.6M - *Metric Heavy Hex Bolts*