



PROCESS
INDUSTRY
PRACTICES

COMPLETE REVISION
July 2018

Structural

**PIP STE05501
Fixed Ladders Design Guide**

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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PIP STE05501 Fixed Ladders Design Guide

Table of Contents

1. Scope.....	3		
2. References	3		
2.1 Process Industry Practices	3		
2.2 Industry Codes and Standards	3		
2.3 Government Regulations	4		
3. Definitions	4		
4. Ladder Design.....	6		
4.1 General	6		
4.2 Ladder Lengths	7		
4.3 Platform Access	8		
4.4 Ladder Cages	9		
4.5 Ladder Supports and Guides	9		
4.6 Ladder Rails	10		
4.7 Ladder Rungs	10		
4.8 Ladder Pitch	11		
4.9 Design Loads	12		
4.10 Allowances for Temperature Variation for Vertical Vessels	13		
4.11 Ladder Pads	14		
4.12 Ladder Clearances.....	14		
5. Ladder Fall Protection.....	14		
5.1 General	14		
5.2 Fixed Ladders Extending more than 24 feet (7.3 m) above a Lower Level.....	15		
		5.3 Considerations for Compliance with OSHA Fall Protection Regulations for Fixed Ladders	15
		5.4 Ladder Safety System Requirements.....	17
		5.5 Personal Fall Arrest System Requirements.....	17
		6. Inspection, Tagging, Use and Training Requirements	17
		7. Contract Documents	17
		8. Fabricator Shop Drawings Review.....	19
		9. Typical Details	20
		Table 1 - Thermal Expansion Data (U.S. Customary Units)	21
		Table 1M - Thermal Expansion Data (Metric Units)	23
		Appendix A - Commentary on Interpretation of OSHA Regulations 29 CFR Part 1910 Subpart D, Section 1910.28(b)(9)	23

Drawings

- STE05501-01 – Side Elevation
- STE05501-02 – Side-Step Ladder at Top
- STE05501-03 – Through Ladder at Top
- STE05501-04 – Through Ladder Top Connection
Details
- STE05501-05 – Ladder Base at
Structure/Platform or Horizontal Vessel
- STE05501-06 – Ladder Base at Vertical Vessel
- STE05501-07 – Side-Step Ladder Support
Connection to Vertical Vessel
- STE05501-08 – Side-Step Ladder Support
Connection to Structure/Platform
- STE05501-09 – Through Ladder Support
Connection to Structure/Platform
- STE05501-10 – Ladder Guide Connection to
Vertical Vessel
- STE05501-11 – Ladder Guide Connection to
Structure/Platform
- STE05501-12 – Optional Cage – Side Elevation
- STE05501-13 – Optional Cage – Intermediate
Access with Side-Step Ladder
- STE05501-14 – Optional Cage – Hoop Details
- STE05501-15 – Optional Cage – Top Hoop
Connections to Guard Post
- STE05501-16 – Optional Cage – Miscellaneous
Details
- STE05501-17 – Optional Cage at Elevated
Platform
- STE05501-18 – Continuous and Multiple-Section
Ladders

1. Scope

This Practice provides design guidelines for typical *OSHA*-regulated fixed ladders, ladder safety systems/personal fall arrest systems and cages as specified and detailed for fabrication in *PIP STF05501* for open structures, miscellaneous platforms, and vessels for regular operational access and egress. Typical detail drawings for design are provided that describe ladder and cage details, platform access configurations, support and guide connections, ladder location details, and ladder clearances for side step and through ladder types.

The intention of this Practice is to inform structure/platform engineers of *OSHA* regulations regarding fixed ladders and discuss some practical issues that may arise. Interpretations of the *OSHA* regulations are the responsibilities of the owner and engineer of record.

2. References

Applicable parts of the following Practices, industry codes and standards, and government regulations 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 ADG009 - *Guideline for Increasing Global Application of Practices*
- PIP CVC01017 - *Plant Site Data Sheet*
- PIP CVC01018 - *Project Data Sheet*
- PIP STC01015 - *Structural Design Criteria*
- PIP STE05520 - *Guards and Handrails Design Guide*
- PIP STF05501 - *Fixed Ladders Fabrication Details*
- PIP STF05520 - *Pipe Guards and Handrails Fabrication Details*
- PIP STF05521 - *Angle Guards and Handrails Fabrication Details*
- PIP STF05535 - *Vessel Circular Platform Fabrication Details*
- PIP STI03310 - *Concrete Typical Details*
- PIP STS05120 - *Structural and Miscellaneous Steel Fabrication Specification*

2.2 Industry Codes and Standards

- American Institute of Steel Construction (AISC)
 - ANSI/AISC 303-16 - *Code of Standard Practice for Steel Buildings and Bridges*
- American National Standards Institute, Inc. (ANSI)
 - ANSI-ASC A14.3-2008 - *American National Standard for Ladders – Fixed – Safety Requirements*
- American Society of Civil Engineers (ASCE)
 - ASCE/SEI 7-10 - *Minimum Design Loads for Buildings and Other Structures*
- National Fire Protection Association (NFPA)
 - NFPA 101-12 - *Life Safety Code*
 - NFPA 101-15 - *Life Safety Code*