



PROCESS
INDUSTRY
PRACTICES

COMPLETE REVISION
July 2018

Structural

**PIP STE05501
Fixed Ladders Design Guide**

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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.

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PIP STE05501 Fixed Ladders Design Guide

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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 - *Angular Guards and Handrails Fabrication Details*
- PIP STF05535 - *Vessel Circular Platform Fabrication Details*
- PIP STI03310 - *Concrete Typical Details*
- PIP STS05020 - *Structural and Miscellaneous Steel Fabrication Specification*

2.2 Industry Codes and Standards

- American Institute of Steel Construction (AISC)
 - 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*