PIP ARS08112
Standard Steel Doors,
Frames and Related Hardware
Installation 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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PUBLISHING HISTORY
November 2006   Issued, formerly part of PIP ARS08111
November 2012   Complete Revision

Not printed with State funds
Table of Contents

1. Introduction ........................................ 2
   1.1 Purpose ......................................... 2
   1.2 Scope .......................................... 2

2. References ........................................ 2
   2.1 Process Industry Practices .................. 2
   2.2 Industry Codes and Standards ............. 2
   2.3 Government Regulations ..................... 3

3. Definitions ....................................... 3

4. Requirements ..................................... 3
   4.1 Quality Assurance ............................ 3
   4.2 Coordination ................................. 3
   4.3 Storage and Handling ....................... 4
   4.4 Government Regulations .................... 4
   4.5 Installation .................................. 4
   4.6 Adjusting and Cleaning .................... 5
1. Introduction

1.1 Purpose
This Practice provides the constructor with requirements for the installation of standard steel doors, frames and related hardware.

1.2 Scope
This Practice describes the requirements for installing standard steel doors, frames and related hardware. It applies the recommendations of the Steel Door Institute (SDI) of Westlake, Ohio and the Door and Hardware Institute (DHI) of Chantilly, Virginia.

This Practice does not include requirements for field-applied finish painting.

2. References
Applicable parts of the following Practices, industry codes and standards, 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 ARS08710 - Standard Steel Door Hardware Supplier Specification

2.2 Industry Codes and Standards
- American National Standards Institute, Inc. (ANSI) / Steel Door Institute (SDI) (Joint Publications)
  - ANSI/SDI A250.7 - Nomenclature for: Standard Steel Doors and Frames
  - ANSI/SDI A250.8 - SDI 100 Recommended Specifications for Standard Steel Doors and Frames
- Door and Hardware Institute (DHI)
  - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames
- National Fire Protection Association (NFPA)
  - NFPA 80 - Standard for Fire Doors and Other Opening Protectives
- Steel Door Institute (SDI)
  - SDI-118 - Basic Fire Door Requirements
  - SDI-122 - Installation and Troubleshooting Guide for Standard Steel Doors and Frames
2.3 Government Regulations

- U.S. Department of Labor (DOL) – Occupational Safety and Health Administration (OSHA)

3. Definitions

constructor: The party responsible for providing the materials, equipment, tools, supervision, and labor for the installation of the work in accordance with the contract documents. The term constructor shall apply also to the constructor’s subcontractor(s) and vendor(s).

contract documents: Any and all documents, including codes, studies, design drawings, specifications, sketches, practices, and data sheets, that the purchaser or engineer of record has transmitted or otherwise communicated, either by incorporation or reference, and made part of the legal contract agreement or purchase order between the purchaser and the constructor.

inspector: The party responsible for verifying the quality of all materials, installations, and workmanship provided by the constructor. Inspectors shall be qualified by training and experience and hold certifications or documentation of their qualifications.

owner: The party ultimately responsible for contract award. The owner will have authority over the site, facility, structure or project through ownership, lease, or other legal agreement.

purchaser: The party who awards the contract to the constructor. The purchaser may be the owner or the owner’s authorized agent.

Comment: For other definitions, see ANSI/SDI A250.7.

4. Requirements

4.1 Quality Assurance

4.1.1 Doors and frames shall be installed in accordance with ANSI/SDI A250.8, SDI-122, and this Practice.

4.1.2 The constructor shall have a minimum of three years of steel door and frame installation experience and be pre-qualified by the purchaser.

4.1.3 The purchaser or inspector shall have the right to inspect all materials and workmanship and shall have unrestricted access to work sites at all times during which the work is being performed.

4.2 Coordination

4.2.1 Any conflicts or inconsistencies between this Practice, the design drawings, or other contract documents shall be brought to the attention of purchaser for resolution.

4.2.2 The purchaser may call a pre-installation conference before the start of installation.
4.3 Storage and Handling

4.3.1 Examine doors, frames, and related hardware items for conditions that may prevent proper installation and operation. Do not proceed until defects have been corrected.

4.3.2 Constructor is liable for all damage that occurs after delivery through the completion of installation. Minor damage may be repaired provided refinished items are equal in all respects to new work and acceptable to owner; otherwise, remove and replace damaged items as directed.

4.3.3 Unpack and verify all hardware as to type and quantity upon receipt. Any shortage shall be corrected as soon a practical. All keys shall be identified and placed in a secure location.

4.3.4 Job site storage shall be provided in accordance with ANSI/SDI A250.8.

4.3.5 Doors, frames, and door hardware shall be protected from damage during construction operations.

4.4 Government Regulations

All work shall be in accordance with federal standards and instructions of OSHA, NFPA 101, and state and local codes, including any additional requirements by state or local agencies that have jurisdiction where doors and frames are to be installed.

For work done outside of the United States, the user shall determine if specific regulations and other country, regional, or local safety requirements apply for specific applications of this Practice.

4.5 Installation

4.5.1 Doors and frames shall be installed in accordance with ANSI/SDI A250.8, SDI-122, and the contract documents.

4.5.2 Fire-rated doors shall be installed in accordance with NFPA 80 and SDI-118.

4.5.3 Installation tolerances for doors and frames shall be in accordance with SDI-122.

4.5.4 Door hardware shall be installed in accordance with the following:

1. Mount the hardware as indicated by the DHI Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames, except as may be required by governing regulations due to project location.

2. Install each hardware item in compliance with the manufacturer’s instructions and recommendations, using any templates provided by the manufacturer, in a manner that will allow the door and the hardware to function properly. See PIP ARS08710 for the items that are required to be provided by the hardware manufacturer with the door hardware. Lubricate moving parts as recommended by the manufacturer.

3. When cutting and fitting are required to install hardware onto or into surfaces that are later to be painted or finished in another way, install each hardware item to ensure proper fit, then remove the item and store it
in a secure place. All surfaces shall be smooth and free of sharp edges and burrs. After the application of finishes, reinstall each hardware item.

4. Install the hardware level, plumb, and true to line and location. Substrates shall be adjusted and reinforced as required for proper installation and operation of the hardware.

5. Set exterior door thresholds in a full bed of butyl-rubber or polyisobutylene mastic sealant. Do not plug or block drain holes or weeps.

6. Install weatherstripping and seals according to the manufacturer’s instructions and recommendations.

7. Coordinate the installation of all electrically actuated hardware with the electrical contractor.

8. Mount closers on all corridor doors on the room side of the door.

### 4.6 Adjusting and Cleaning

4.6.1 After the doors and hardware have been installed, check and adjust the door and each hardware item to ensure that the door and hardware will function and operate correctly. Adjust door control devices to compensate for the normal operating level of heating, ventilation, and air-conditioning (HVAC) equipment.

4.6.2 Scratched surfaces shall be touched-up with primer and finish coat (if applicable) equivalent to original coating system.

4.6.3 Dented or otherwise damaged doors or frames shall be replaced at no cost to purchaser.

4.6.4 Hardware items that have been damaged or cannot be adjusted to operate as intended shall be replaced at no cost to purchaser.

4.6.5 After the door hardware has been installed, clean door surfaces and all hardware that has been soiled by installation of grease, oil, dirt, and other impurities.

4.6.6 Provide the owner with special tools and instructions to properly adjust and maintain the hardware and finishes at the beginning of the guarantee period.

4.6.7 Provide protection for the doors and all hardware items until the owner has accepted the project as complete.