

Electronic Hinge Preparations



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STEEL DOOR INSTITUTE

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1 Purpose

It is the intention of this document to furnish users of standard steel frames with practical information regarding an acceptable method for preparing frames for 4-½", 5" or continuous electric hinges. This document will allow frame manufacturers to provide frames prior to having knowledge of the specific electric hinge being used.

2 Scope

The information contained herein pertains to frames manufactured in accordance with ANSI/SDI A250.8. The preparation as defined herein will accommodate the majority of electric hinges sold. It is the responsibility of the hardware specifier to assure compatible hinges are used.

3 Reference Documents

ANSI/SDI A250.6 *Recommended Practice for Hardware Reinforcings on Standard Steel Doors and Frames*

ANSI/SDI A250.8 *SDI 100 Specifications for Standard Steel Doors & Frames*

ANSI/BHMA A156.7 *Template Hinge Dimensions*

ANSI/BHMA A156.115 *Hardware Preparation in Steel Doors and Steel Frames*

4 Tolerances

All values which do not carry specific tolerances or are not marked maximum or minimum shall have the following tolerances: Linear dimensions shall be $\pm 1/16$ in. (1.6 mm). Weight or force shall be $\pm 2\%$. Angles shall be ± 2 degrees. Where only minus tolerances are given, the dimensions are permitted to be exceeded at the option of the manufacturers.

5 Location

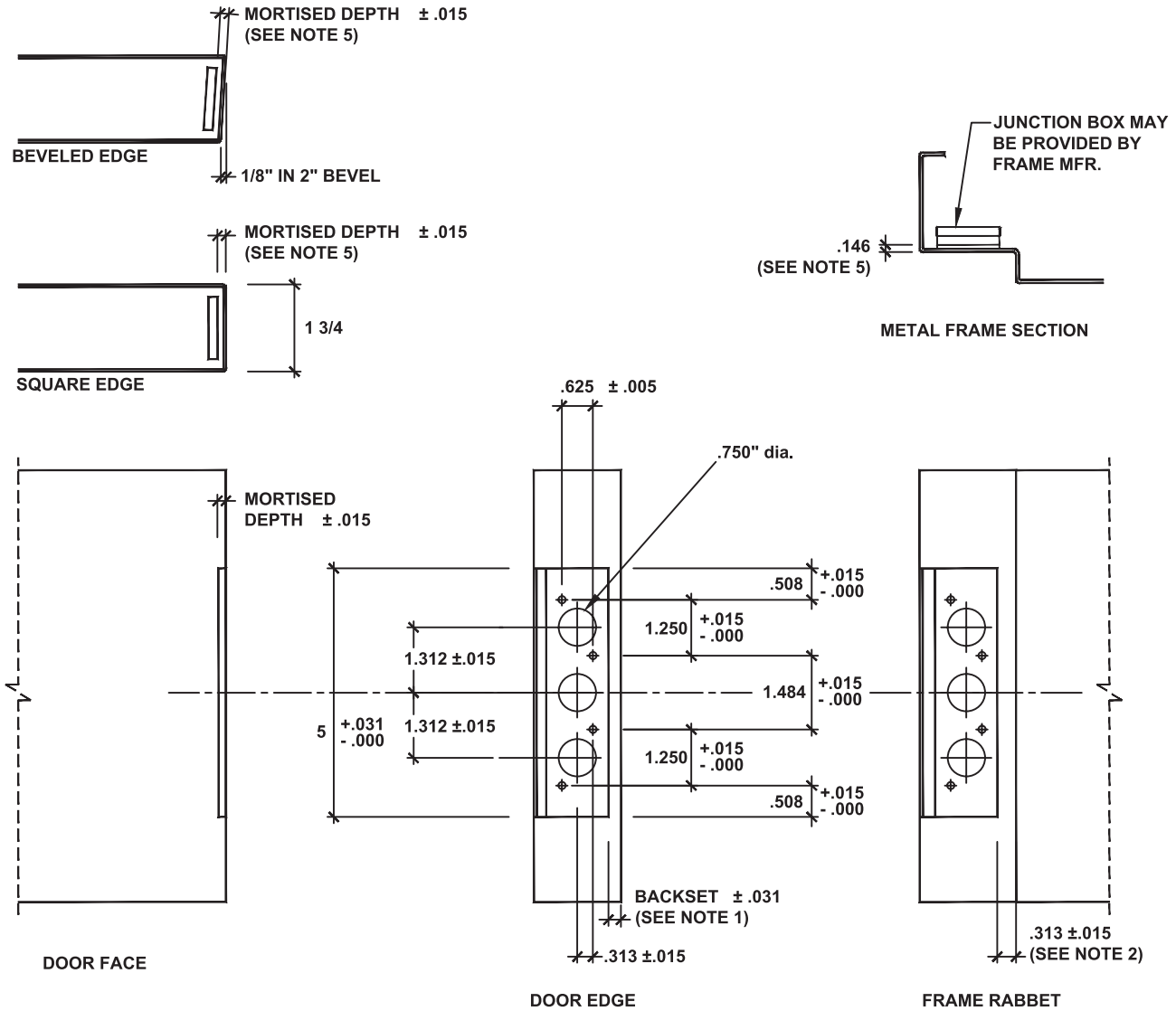
The preparation for electric hinges is intended to be non-load bearing. Therefore it shall be located in the center hinge preparation on frames with 1-½ pair of hinges, and on the second hinge from the bottom on frames with 2 pair of hinges.

6 Hinge Reinforcement

The hinge reinforcement shall comply with ANSI/SDI A250.6 and ANSI/SDI A250.8, and shall incorporate cutouts as shown in Figures 1, 2, 3 and 4.

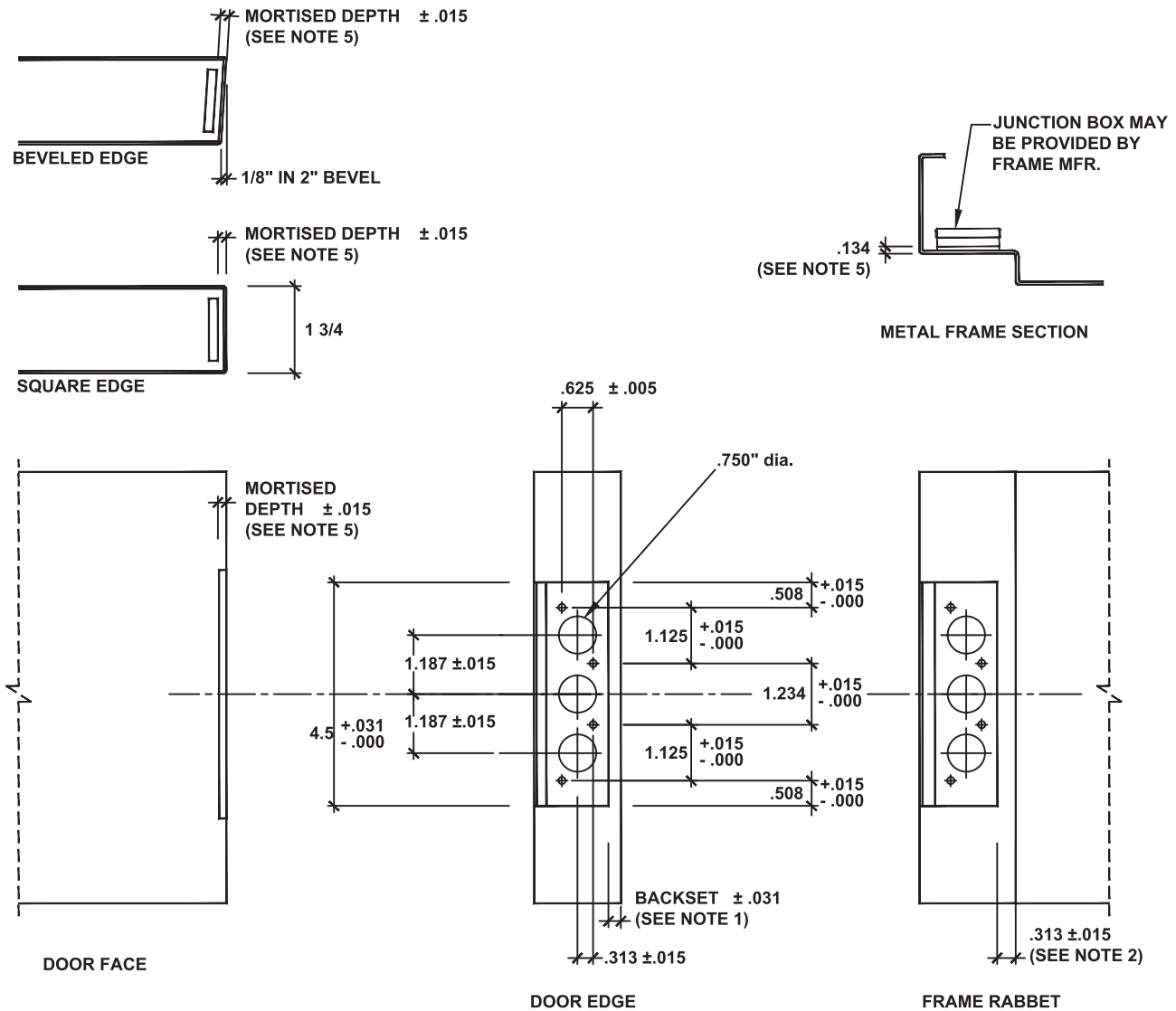
7 Junction Box

A junction box may be provided to facilitate wiring and connector installation. In addition, a hole shall be provided at the top and bottom of the junction box to facilitate conduit (see Figure 4). It is the responsibility of the electrical contractor to plug any unused holes.



- Note 1:** The hinge backset on the door varies by hollow metal door manufactures from $3/16''$ to $1/4''$
- Note 2:** The hinge backset on the frame varies by hollow metal frame manufactures from $5/16''$ to $3/8''$
- Note 3:** Extra holes may occur in the reinforcement for tooling and installation fixturing.
- Note 4:** Some manufacturers offer a removable feature (e.g. - wire, shim, standoff projection) to allow conversion of a standard weight preparation for use with heavy weight hinge butt.
- Note 5:** The most common mortise depths are in accordance with ANSI/BHMA A156.1 as follows:
 Standard Weight butt $0.146''$
 Heavy weight butt $0.190''$

Figure 1 – Preparation of 1 3/4" Steel Doors & Frames for 5" Full Mortise Electric Hinge



Note 1: The hinge backset on the door varies by hollow metal door manufactures from 3/16" to 1/4"

Note 2: The hinge backset on the frame varies by hollow metal frame manufactures from 5/16" to 3/8"

Note 3: Extra holes may occur in the reinforcement for tooling and installation fixturing.

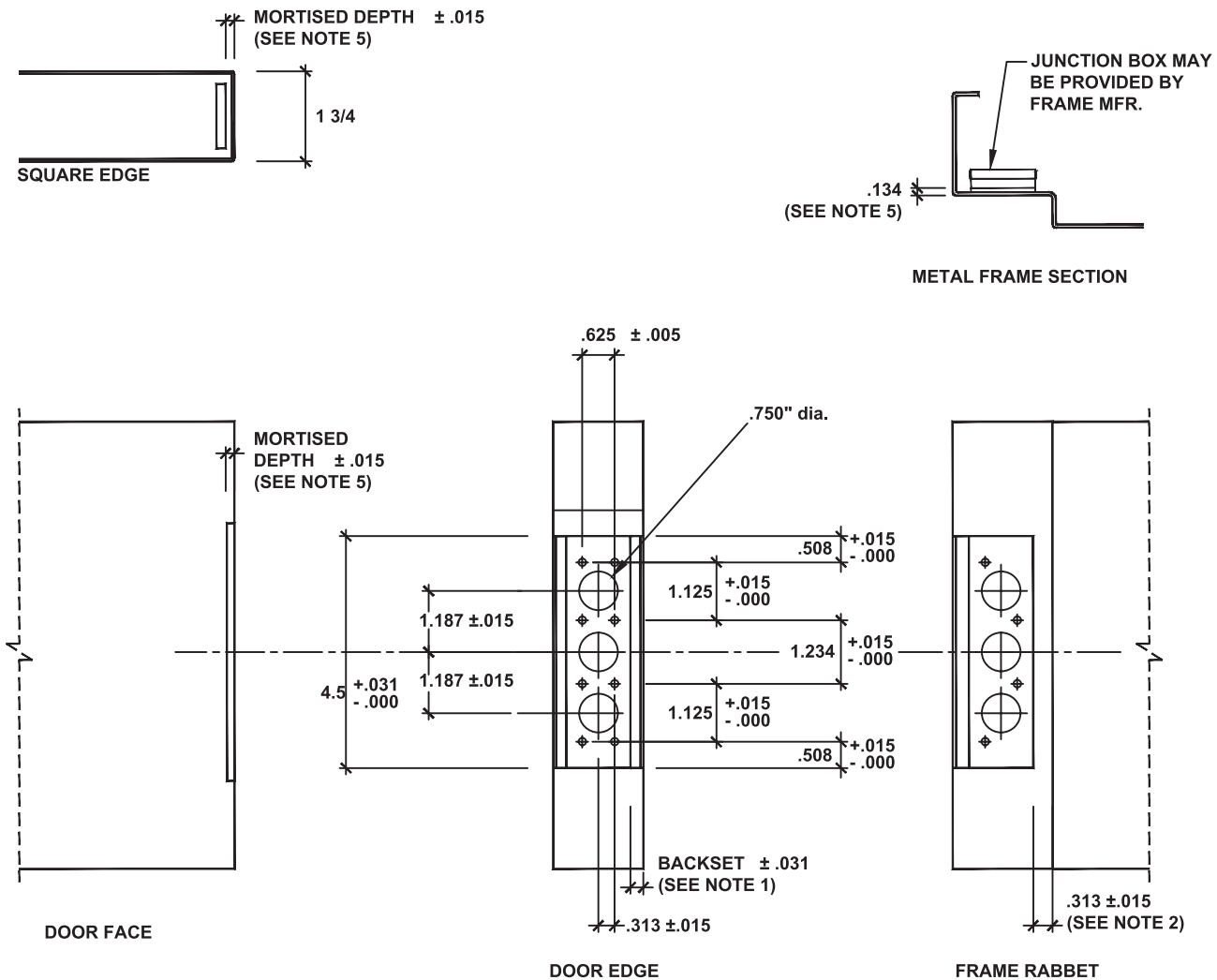
Note 4: Some manufacturers offer a removable feature (e.g. - wire, shim, standoff projection) to allow conversion of a standard weight preparation for use with heavy weight hinge butt.

Note 5: The most common mortise depths are in accordance with ANSI/BHMA A156.1 as follows:

Standard Weight butt 0.134"

Heavy weight butt 0.180"

Figure 2 – Preparation of 1 3/4" Steel Doors & Frames for 4 1/2" Full Mortise Electric Hinge



Note 1: The hinge backset on the door varies by hollow metal door manufactures from 3/16" to 1/4" when hinge filler is in place.

Note 2: The hinge backset on the frame varies by hollow metal frame manufactures from 5/16" to 3/8"

Note 3: Extra holes may occur in the reinforcement for tooling and installation fixturing.

Note 4: Some manufacturers offer a removable feature (e.g. - wire, shim, standoff projection) to allow conversion of a standard weight preparation for use with heavy weight hinge butt.

Note 5: The most common mortise depths are in accordance with ANSI/BHMA A156.1 as follows:

- Standard Weight butt 0.134"
- Heavy weight butt 0.180"

Figure 3 – Preparation of 1 3/4" Steel Doors & Frames for 4 1/2" Full Mortise Electric Hinge Non-handed

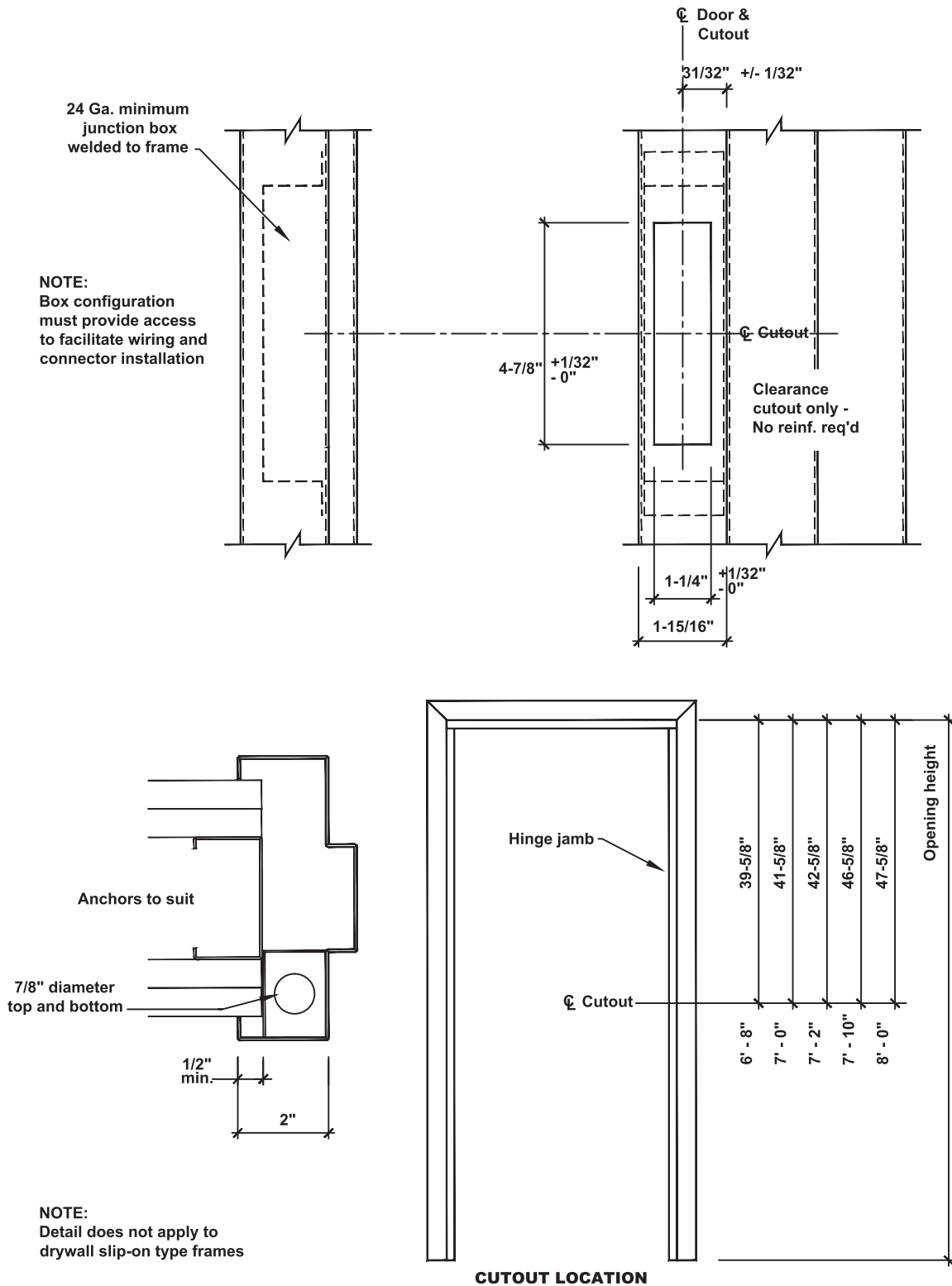


Figure 4 – Electrified Continuous Hinge Preparation on Standard Steel Frame

AVAILABLE PUBLICATIONS

Specifications

- ANSI/SDI A250.6** Recommended Practice for Hardware Reinforcing on Standard Steel Doors and Frames
- ANSI/SDI A250.8** Specifications for Standard Steel Doors and Frames (SDI-100)
- ANSI/SDI A250.14** Hardware Preparation in Steel Doors and Steel Frames
- SDI-108** Recommended Selection & Usage Guide for Standard Steel Doors
- SDI-118** Basic Fire Door, Fire Door Frame, Transom/Sidelight Frame, and Window Frame Requirements
- SDI-128** Guidelines for Acoustical Performance of Standard Steel Doors and Frames
- SDI-129** Hinge and Strike Spacing
- SDI-133** Guideline for Specifying Steel Doors & Frames for Blast Resistance
- SDI-136** Guideline for Specifying Windstorm Products

Test Procedures

- ANSI/SDI A250.3** Test Procedure & Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames
- ANSI/SDI A250.4** Test Procedure & Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors
- ANSI/SDI A250.10** Test Procedure & Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- ANSI/SDI A250.13** Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies for Protection of Building Envelopes (Not applicable for FEMA 320/361 or ICC-500 Shelters)
- SDI-113** Standard Practice for Determining the Steady-State Thermal Transmittance of Steel Door and Frame Assemblies
- SDI-131** Accelerated Physical Endurance Test Procedure for Steel Doors

Construction Details

- ANSI/SDI A250.11** Recommended Erection Instructions for Steel Frames
- SDI-110** Standard Steel Doors & Frames for Modular Masonry Construction
- SDI-111** Recommended Details for Standard Steel Doors, Frames, Accessories and Related Components
- SDI-122** Installation Troubleshooting Guide for Standard Steel Doors & Frames

Miscellaneous Documents

- SDI-112** Zinc-Coated (Galvanized/Galvannealed) Standard Steel Doors and Frames
- SDI-117** Manufacturing Tolerances for Standard Steel Doors and Frames
- SDI-124** Maintenance of Standard Steel Doors & Frames
- SDI-127** Industry Alert Series (A-L)
- SDI-130** Electronic Hinge Preparations
- SDI-134** Glossary of Terms for Hollow Metal Doors and Frames
- SDI-135** Guidelines to Measure for Replacement Doors in Existing Frame Openings

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2/14/2025

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