

GENERAL INDEX

General Information1

Frames2

Doors3

Lights4

Elevations5

Storm Resistance6

Specialty Products7

Hardware Preparations8

Fire Rated Products9

Performance10

Architectural11

ERRORS AND OMISSIONS

Every effort has been made to ensure the accuracy and completeness of this Steelcraft Technical Manual. The information herein is subject to some interpretation, and from time to time, the data sheets will be updated whenever it is deemed necessary as new tests are conducted, new products and technologies are introduced and as specifications are revised. For these reasons, and because of the nature and scope of the subject, Steelcraft and its employees can assume no responsibility or liability for the absolute accuracy of the material contained herein or its use. The information in this Technical Manual is subject to change without notice and does not represent a commitment on the part of Steelcraft.

CONTACT INFORMATION

Please contact the Steelcraft Technical Service Department for information or, if you identify an error or an omission.

Phone: (800) 243-9780 e-mail: steelcraftsupport@irco.com

INDEX

General Information 1.1
Introduction
Standards
Dimensioning
Terminology
Literature
Errors and Omissions

Technical Publications: 1.2
SDI
HMMA
ANSI

Handing Procedures 1.7

Steelcraft Frame Nomenclature 1.8

Steelcraft Door Nomenclature. 1.9

Standard Steelcraft Hardware Locations: . . . 1.10
1-1/2 Pair of Hinges
2 Pair of Hinges
2-1/2 Pair of Hinges

Wood Door Machining Details 1.14
Standard Door Heights
Special Door Heights
Comparative Locations

Field Measurements 1.18

Competitive Hardware Locations 1.19

INTRODUCTION

After more than seven decades of quality, craftsmanship and service leadership, Steelcraft continues to be recognized as the world's leading manufacturer of steel doors and frames.

Steelcraft manufactures the most complete line of steel doors and frames. These products are produced from the highest quality of commercial carbon steel or galvanized steel as specified.

Steelcraft frames are designed for virtually all types of wall construction. The flush frame is primarily intended for installation as part of the wall framing system(s), while the drywall frames are specifically designed for drywall construction.

Steelcraft also offers the broadest line of labeled (Fire Rated) doors and frames for either Positive or Neutral fire test environments. Steelcraft continues to be very active in assisting building code officials in the adoption of more stringent and realistic codes for Fire Doors and Frames.

The Steelcraft Architectural Stick System consists of standard frame components that are pre-engineered for assembly and fabrication by the local Steelcraft distributor. This allows for unlimited opportunities to meet the architectural and aesthetic needs of extensive window wall, store front and entrance units.

Steelcraft is devoted to the manufacture, service and continuous improvement of steel doors, frames and their components. A measure of this commitment can be found in the great number of door and frame innovations that are now common in the industry – pioneered, designed, developed, and in certain products, patented by Steelcraft.

This Technical Manual is designed to provide Architects, Engineers, Specification Writers, End Users and Distributors with the necessary information to specify the correct Steelcraft product to meet the application and functional needs of the project. In addition to providing the industry with the highest quality of steel doors, frames and components, Steelcraft offers the widest selection of sizes, styles and designs to compliment virtually any architectural, aesthetic, security or safety requirement.

STANDARDS

Steelcraft is a long-standing and very involved member of several training and industry organizations, which are also dedicated to the continual improvement of the Commercial Door and Frame Markets. Some of the major trade associations of which Steelcraft is an active member include:

SDI	Steel Door Institute
HMMA	Hollow Metal Manufacturers' Association
DHI	The Door and Hardware Institute

DIMENSIONING

All dimensions shown in this manual are based on the imperial (feet and inches) dimensions system, with the equivalent metric (millimeters) shown in parentheses. Steelcraft has and does supply projects globally in both Imperial and Metric dimensioning. It is the responsibility of the architect, specifier and purchaser of the doors and frames to clearly indicate the dimensional system required to be met. With the multitude of building components interfacing with the door and frame installations, this is extremely critical and requires a clearly stated and understood dimensioning policy.

Steelcraft Metric Policy

Jobs ordered in metric dimensions will be supplied to the actual dimensions indicated on orders placed to Steelcraft. No dimensions will be considered nominal, unless they are clearly indicated and supported by a clearly stated metric dimensional standard. All critical, installation and functional tolerances will be in accordance with the industry tolerance published in and by the Steel Door Institute (SDI) and the Hollow Metal Manufacturers Association (HMMA).

TERMINOLOGY

The terms covered in this manual are in accordance with those published by:

SDI	ANSI A250.7 Nomenclature for: <i>Standard Steel Doors and Steel Frames</i>
HMMA	HMMA 801-05 Glossary of <i>Terms for Hollow Metal Doors and Frames</i>

LITERATURE

Literature or standards referenced in this manual can be obtained directly from the publisher of that literature. To obtain any standard referenced in this manual, refer to the organizations listed. Downloadable documents may be obtained by connecting to the organization's website.

ANSI	American National Standards Institute http://www.ansi.org
ASTM	American Society for Testing and Materials http://www.astm.org
CSI	Construction Specifications Institute http://csinet.org
DHI	Door and Hardware Institute http://www.dhi.org
HMMA	Hollow Metal Manufacturers' Association Division of NAAMM http://www.naamm.org
NAAMM	National Association of Architectural Metal Manufacturers http://www.naamm.org
NFPA	National Fire Protection Association http://www.nfpa.org
SDI	Steel Door Institute http://www.steeldoor.org
UL	Underwriters Laboratories, Inc. http://www.ul.com
WH	Warnock Hersey (Intertek ETL SEMKO) http://www.intertek-etlsemko.com

ERRORS AND OMISSIONS

Every effort has been made to ensure the accuracy and completeness of this Steelcraft Technical Manual. This manual is for use by qualified persons only. The information herein is subject to some interpretation, and from time to time, the data sheets will be updated whenever it is deemed necessary as new tests are conducted, new products and technologies are introduced and as specifications are revised. For these reasons, and because of the nature and scope of the subject, Steelcraft and its employees can assume no responsibility or liability for the absolute accuracy of the material contained herein or its use. The information in this Technical Manual is subject to change without notice and does not represent a commitment on the part of Steelcraft.

Please contact the Steelcraft Technical Service Department if you identify an error or omissions.

SDI Technical Publications

Listed here, and on the following page, are the current Technical Publications available from the Steel Door Institute.

All documents in this list are part of the **SDI Fact File**.

Free downloads of these documents are available from SDI's Website:

<http://www.steeldoor.org/html/tech.html>

SDI 106-99

Recommended Standard Door Type Nomenclature

This document contains standard door type nomenclature ranging from flush (Type F) to Dutch doors (Type D). The use of the standard nomenclature contained in the document will greatly simplify architectural drawing takeoff process and will do much to avoid confusion and errors which result from misinterpretation of these details.

SDI 108-04

Recommended Selection and Usage Guide For Standard Steel Doors

This document was developed to establish guide criteria for the selection and usage of standard steel doors in such building types as apartment, dormitory, hotel/motel, hospital/nursing home, industrial, office and school.

SDI 109-04

Hardware For Standard Steel Doors And Frames

This document contains a listing of hardware from various hardware manufacturers that is compatible for use on standard steel doors and frames. It covers various types of locks, exit devices, closers, holders, hinges, roller latches, flush bolts, and electric strikes.

SDI 110-84 (R2000)

Standard Steel Doors And Frames For Modular Masonry Construction

This document contains information in respect to, as the title indicates, the installation of standard steel doors and frames in modular masonry construction. The basic module covered in the document as developed by the industry is 4".

SDI 111-00

Recommended Selection and Usage Guide for Standard Steel Doors, Frames and Accessories (A through H):

SDI 111-A

Recommended Standard Steel Door Frame Details

Covers recommended steel door frame details as they are affected by common wall conditions.

SDI 111-B

Recommended Standard Details For Dutch Doors

Standard dimensions for dutch doors.

SDI 111-C

Recommended Louver Details For Standard Steel Doors

This document discusses, explains and details a variety of louver designs and size available for standard steel doors.

SDI 111-D

Recommended Door, Frame And Hardware Schedule For Standard Steel Doors And Frames

Contains a suggested door, frame and hardware schedule form and defines "handing".

SDI 111-E

Recommended Guidelines For The Use Of Gasketing And Thresholds For Standard Steel Doors And Frames

Contains details which represent the recommendations of the SDI in respect to weather-stripping of standard steel doors and frames.

SDI 111-F

Recommended Existing Wall Anchors For Standard Steel Doors And Frames

A guide for architects to aid them in recognizing available options to the traditional sub buck detail which has been widely used in the past. It illustrates anchoring systems which are available in regular and labeled frames.

SDI 111-G

Recommended Standard Preparation For Double Type (Interconnected) Locks On Standard Steel Doors And Frames

Dimensions for standard door and frame preparation for double type (interconnected) locks.

SDI 111-H

High Frequency Hinge Preparations For Frames

Specifications for steel frames used in extremely high frequency or high use areas which need to be supplied with additional reinforcing to eliminate potential door sag.

SDI 112-97

Zinc-Coated (Galvanized/Galvannealed) Standard Steel Doors And Frames

This document provides information regarding the galvanized sheet used in standard steel door and frame construction when a requirement for galvanized doors and frames is specified.

SDI 113-01

Standard Practice For Determining The Steady State Thermal Transmittance Of Steel Door And Frame Assemblies

This document establishes a minimum standard and a method of test for thermal effectiveness of steel door and frame assemblies under circumstances that might reasonably be considered normal field applications and conditions.

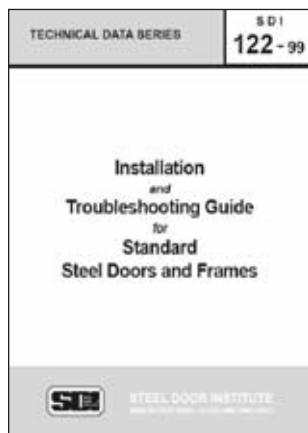
SDI 117-00

Manufacturing Tolerances Standard Steel Doors And Frames

This document is intended to furnish users and prospective users of standard steel doors and frames with practical information regarding mortise and manufacturing tolerances for both doors and frames.

SDI 118-02***Basic Fire Door Requirements***

This document contains rules and other information in a condensed simplified manner in respect to code requirements for the design and use of fire doors.

**SDI 122-99*****Installation And Troubleshooting Guide For Standard Steel Doors And Frames***

This document covers field installation problems most commonly experienced with standard steel door and frame installations. Most problems encountered are because of inappropriate application of the products and/or improper installation.

SDI 124-98***Maintenance Of Standard Steel Doors And Frames***

This document is intended to serve as a general outline of maintenance activities needed for hollow metal doors and frames.

SDI 127 Series – Industry Alerts (A through J):**SDI 127A-99*****End Closure Location***

Industry Alerts - End Closure

SDI 127B-99***Door Edge Cutouts***

Industry Alerts - Door Edge Cutouts

SDI 127C-99***Frame Cutout Limits***

Industry Alerts - Frame Cutout Limits

SDI 127D-99***Electric Strikes In Stud Walls***

Industry Alerts - Electric Strikes in Stud Walls

SDI 127E-01***Prime Painted Materials Alert***

Industry Alerts - Prime Painted Materials Alert

SDI 127F-02***Butted Frames Rough Opening Sizes***

Industry Alerts - Butted Frames Rough Opening Sizes

SDI 127G-02***Environmental Considerations Relating To Factory Painted Steel Doors And Frames***

Industry Alerts - Environmental Considerations Relating to Factory Painted Steel Doors and Frames

SDI 127H-02***Water Penetration***

Industry Alerts - Water Penetration

SDI 127I-04***Grouting Frames In Drywall***

Industry Alerts - Grouting Frames in Drywall

SDI 127J-04***Bituminous Back-Coating Of Frames***

Industry Alerts - Bituminous Back-Coating of Frames

SDI 128-97***Guidelines For Acoustical Performance Of Standard Steel Doors And Frames***

This document shall provide guidelines for the specifying, designing, installing, and adjusting of standard steel doors and frames in Sound Control applications.

SDI 129-04***Hinge And Strike Spacing***

A reference of standard locations used in the manufacture of steel door and frames by SDI member companies for a variety of door sizes.

SDI 130-05***Electronic Hinge Preparations***

Practical information regarding an acceptable method for preparing frames for 4-1/2" electric hinges. This document will allow frame manufacturers to provide frames prior to having knowledge of the specific electric hinge being used.

SDI 131-04***Accelerated Physical Endurance Test Procedure for Steel Doors, Frames and Frame Anchors***

This test procedure provides manufacturers with a method of quickly testing the performance of doors.

Drywall Slip-On Frames

This document illustrates step by step how to install drywall frames in less than 10 minutes. It also lists the many advantages of drywall slip-on frames.

HMMA Technical Publications

Listed here, and on the following page are the current Technical Publications available from the Hollow Metal Manufacturers Association, a Division of the National Association of Architectural Metal Manufacturers.

Free downloads of these documents are available from the HMMA/NAAMM Website:

<http://www.naamm.org/hmma/literature.php>

HMMA 800-96

Introduction To Custom Hollow Metal

It is the purpose of this manual to provide authoritative and unbiased technical information regarding the manufacture, design and use of custom hollow metal doors and frames.

ANSI/NAAMM HMMA 801-05

Glossary Of Terms For Hollow Metal Doors And Frames

Defines commonly used terms in connection with Hollow Metal Work as they specifically apply to hollow metal doors and frames. These terms may be defined differently by other industries.

HMMA 802-07

Manufacturing Of Hollow Metal Doors And Frames

This publication details the types of steel materials used and fabrication processes, including shearing, blanking, brake forming, limitations of break forming, welding and painting.

HMMA 803-97

Steel Tables

Values of minimum steel thicknesses taken from the Underwriters Laboratories, Inc. publication for gage number and equivalent thickness are shown. ASTM and ANSI do not list gage numbers in their standards which was the standard of referral prior to 1970.

HMMA 810-87

Hollow Metal Doors

This document reviews basic sizes, types, designs and construction of hollow metal doors.

HMMA 820-87

Hollow Metal Frames

This document details various elevation types, profiles, assembly and anchoring of Knock-Down (KD) and welded 3-sided and multiple opening hollow metal frames.

HMMA 830-02

Hardware Selection For Hollow Metal Doors And Frames

This publication is intended to acquaint the reader with commonly used door hardware that provides both aesthetic appeal and durable function.

HMMA 831-97

Hardware Locations For Hollow Metal Doors and Frames

Recommended locations for hardware on Custom Hollow Metal doors differ from those established for Standard Hollow Metal doors principally with respect to hinges, knobs and strikes.

HMMA 840-99

Guide Specifications For Installation And Storage of Hollow Metal Doors And Frames

A comprehensive review of the delivery, receiving, on-site storage and installation of Knock-Down (KD) and welded hollow metal frames and hanging of hollow metal doors .

HMMA 850-00

Fire Rated Hollow Metal Doors And Frames

Data on current practices within the industry are presented with emphasis on the requirements of the National Fire Protection Association (NFPA) and Model Codes. Fire testing, listing, labeling and certification services are thoroughly covered.

**HMMA 860-92*****Guide Specifications For Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to Apartment Buildings, Dormitories, Military Barracks and Motels.

HMMA 861-06***Guide Specifications For Commercial Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to Schools, Hospitals, Industrial Buildings, Office Buildings, Hotels, Nursing Homes, Airports and Convention Centers.

ANSI/NAAMM HMMA 862-03***Guide Specifications For Commercial Security Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to Exterior Doors to Schools, Warehouses, Industrial Buildings or Strip Stores.

ANSI/NAAMM HMMA 863-04***Guide Specifications For Detention Security Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to Jails, Prisons, Detention Centers and Secured Areas in Hospitals or Courthouses.

ANSI/NAAMM HMMA 865-03***Guide Specifications For Swinging Sound Control Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to Television, Radio, Recording and Sound Studios, Theaters and Music Rooms.

ANSI/NAAMM HMMA 866-01***Guide Specifications For Stainless Steel Hollow Metal Doors And Frames***

A CSI format specification intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to the use of Type 304 or 316 Stainless Steel for highly corrosive, moderately corrosive or aesthetic applications.

ANSI/NAAMM HMMA 867-06***Guide Specifications For Commercial Laminated Core Hollow Metal Doors And Frames***

This specification presents the 2004 CSI Format (for the new CSI location for hollow metal doors and frame products) Master Format 2004 Section 08 11 13 and is intended as a guideline for the development of, and editing of job specifications for the application of specific job requirements related to commercial, laminated core, steel doors, and appropriate frame products

A250.3-2007

Test Procedure And Acceptance Criteria For – Factory Applied Finish Coatings For Steel Doors And Frames

Prescribes the procedure to be followed in the selection of material, chemical preparation, painting, testing, and evaluation of factory applied finish painted steel surfaces for steel doors and frames.

A250.4-2001

Test Procedures And Accepted Criteria For – Physical Endurance For Steel Doors, Frames, Frame Anchors And Hardware Reinforcing

A standard method of testing the performance of a steel door mounted in a pressed steel or channel iron frame under condition that might be considered an accelerated field operating conditions.

A250.6-2003

Recommended Practice For Hardware Reinforcing On Standard Steel Doors And Frames

Provides users of standard steel doors and frames with practical information regarding accepted design methods for reinforcing, and recommended practices for proper field preparation and installation of builders hardware.

A250.7-1997 (R-2002)

Nomenclature For – Standard Steel Doors And Steel Frames

Detailed definitions of terms common to the Standard Steel Door and Steel Door Frame Industry.



A250.8-2003 (SDI-100)

Recommended Specifications For Standard Steel Doors And Frames

This specification for swinging steel doors and frames offers a number of choices in both regular and fire rated door and frame constructions. The user must select from the specification the specific grades of doors and frames that best apply to the project. This specification covers sizes, types, materials, general construction requirements and finishing of 1-3/4" extra heavy duty steel doors, 1-3/4" heavy duty steel doors, 1-3/4" and 1-3/8" standard duty steel doors, together with frames and accessories. They are intended to be standard items not subject to variations.

A250.10-1998 (R2004)

Test Procedure And Acceptance Criteria For – Prime Painted Steel Surfaces For Steel Doors And Frames

Procedures for the selection of material, chemical preparation, painting, testing and evaluation of prime painted steel surfaces for steel doors and frames.

A250.11-2001

Recommended Erection Instructions For Steel Frames

This document includes information in respect to storage of frames on the jobsite, grouting and back painting of frames and assembly of frames. It contains instructions in respect to bracing frames before wall construction and the installation of frames in masonry, steel stud wall construction, wood stud wall construction and drywall construction.

A250.13-2003

Testing And Rating Of Severe Windstorm Resistant Components For Swinging Door Assemblies

This standard provides procedures for testing and establishing load ratings (design load in pounds per square foot or pounds force) for components of exterior swinging door assemblies. It is the intent of this document to test the protection of openings during severe windstorm conditions, such as a hurricane, that produces sustained wind speeds or gusts in a range of 110 to 150 miles per hour as defined by ASCE 7-02. It is not intended to simulate wind forces generated by tornadoes.

ANSI Technical Publications

Listed on this page are the current Technical Publications available from the American National Standards Institute.

Free downloads of these documents are available from SDI's Website:

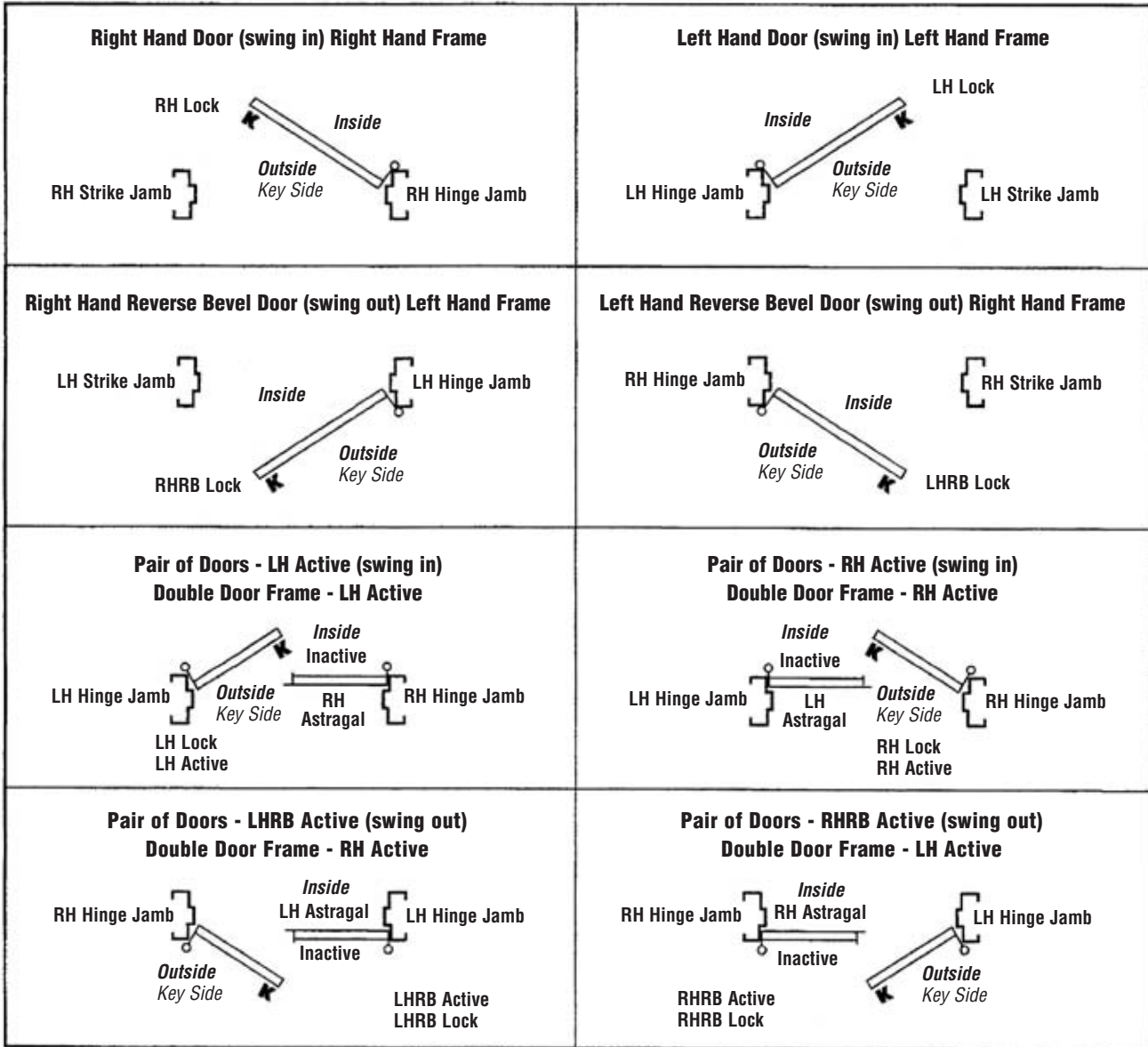
<http://www.steeldoor.org/html/ansi.html>

HANDING

To determine the hand of a door, view the door from the outside (the side that hinges are on is the hand of the door).

- If the door swings away from the viewer, the hand is regular hand, i.e., right or left hand.
- If the door swings to the viewer, the door is reverse swing, i.e., right hand reverse swing or left hand reverse swing.

All Steelcraft Doors and Frames are handed according to the following chart:



K - indicates Key side of the active door

FRAME NOMENCLATURE:

Steelcraft frames are described and marked with easy to follow product identification nomenclature. The markings identify the frames by frame series, gage (decimal and metric), fire rating, door thickness, overall depth, door opening height/width, hardware preps, component and handing.

The following is a brief guide to the nomenclature used by Steelcraft: **F 16 UL 4 5 3/4 70 SJ R ASA**

F 16 UL 4 5 3/4 70 SJ R ASA

STRIKE PREP

- ASA** = 4-7/8" (124mm) Strike With Lip
- CYL** = 2-3/4" (70 mm) Strike With Lip
- RPD** = Rim Exit Device Reinf.
- VPD** = Vertical Rod Exit Device Reinf.
- SPCL** = Special Strike Application

HANDING

- R** = Right Hand
- L** = Left Hand
- D** = Double Door
- DR** = Double Door, Right Hand Active
- DL** = Double Door, Left Hand Active

COMPONENT

- SJ** = Strike Jamb
- HJ** = Hinge Jamb
- HD** = Head

DOOR OPENING HEIGHT / WIDTH

Designated In Feet and Inches

- 68** = 6' 8" (2032 mm)
- 70** = 7' 0" (2134 mm)
- 30** = 3' 0" (914 mm)

JAMB DEPTH

5 3/4 = In 1/8" (3 mm) Increments

DOOR THICKNESS

- 4** = 1-3/4" (45 mm)
- 8** = 1-3/8" (35 mm)
- CO** = Cased Open Frame Profile

FIRE RATING

- UL** = Underwriters Laboratories, Inc.
- WH** = Warnock Hersey (Intertek ETL SEMKO)

GAGE OF STEEL

- 16** = 16 gage [0.053" (1.3 mm)]
- 14** = 14 gage [0.067" (1.7 mm)]
- 12** = 12 gage [0.093" (2.3 mm)]

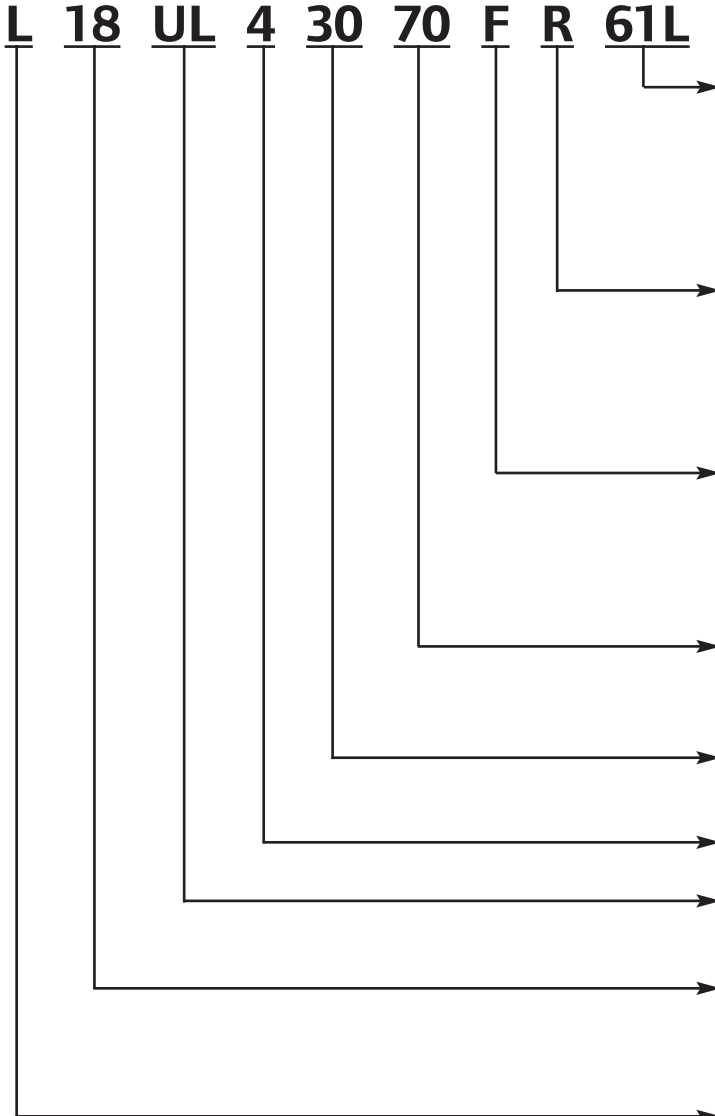
FRAME TYPE

- DE** = Double Egress – 2 step jambs
- DW** = Drywall (Adjustable Base Anchor)
- F** = Flush 2" (51 mm) face
- FE** = Double Egress – 3 step jambs
- FN** = Flush 1" (25 mm) face
- FP** = Paladin
- K** = Drywall (Screw Base Anchor)
- MU** = Multiple Use 2" (51 mm) face

DOOR NOMENCLATURE:

Steelcraft doors are described and marked with easy to follow product identification nomenclature. The markings identify the doors by door series, gage (decimal and metric), fire rating, door thickness, width, height, glass design, hand and lock preps.

The following is a brief guide to the nomenclature used by Steelcraft: **L 18 UL 4 30 70 F R 61L**



NOTE:

1. The nomenclature designation shown on this page is for education, example and reference only.
2. Refer to the individual Technical Data Manual sheets to develop options related to the specific frame series.
3. Refer to the hardware section of this manual for preps and nomenclature not covered on this sheet.
4. Refer to the lights and louvers section for additional information.

LOCK PREP

- 161** = Cylindrical Knob (Bored) Lock Prep
- 61L** = Cylindrical Lever (Bored) Lock Prep
- 86** = Mortise Lock Prep
- 86ED** = Mortise Lock Edge Prep
- RPD** = Rim Exit Device
- VRPD** = Vertical Rod Exit Device
- SPCL** = Special Lock Application

HANDING

- R** = Right Hand
- L** = Left Hand
- RHR** = Right Hand Reverse
- LHR** = Left Hand Reverse
- DR** = Double Door, Right Hand Active
- DL** = Double Door, Left Hand Active

DOOR TYPE

- F** = Full Flush – No Light
- G** = Half Glass Light
- V** = Vision Light
- N** = Narrow Light
- FG** = Full Glass
- FG2** = Full Glass 2 Lights

NOMINAL DOOR OPENING – HEIGHT

Designated In Feet and Inches

- 68** = 6' 8" (2032 mm)
- 70** = 7' 0" (2134 mm)

NOMINAL DOOR OPENING - WIDTH

Designated In Feet and Inches

- 30** = 3' 0" (914 mm)

DOOR THICKNESS

- 4** = 1-3/4" (45 mm)

FIRE RATING

- UL** = Underwriters Laboratories, Inc.
- WH** = Warnock Hersey (Intertek ETL SEMKO)

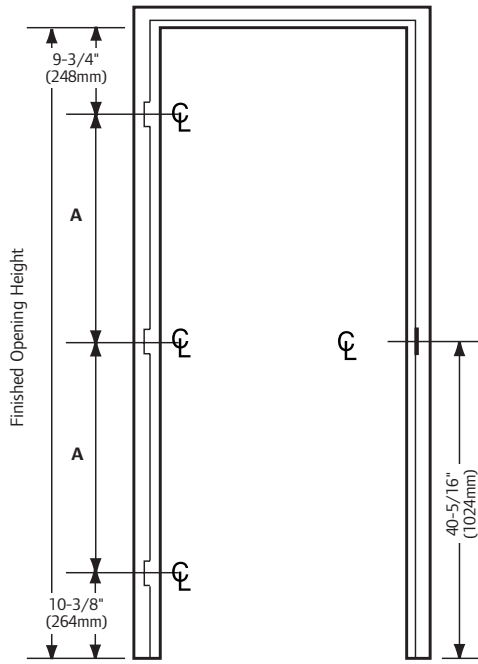
GAGE (Thickness of Metal Face Panel)

- 20** = 20 gage [0.032" (0.8 mm)]
- 18** = 18 gage [0.042" (1.0 mm)]
- 16** = 16 gage [0.053" (1.3 mm)]
- 14** = 14 gage [0.067" (1.7 mm)]

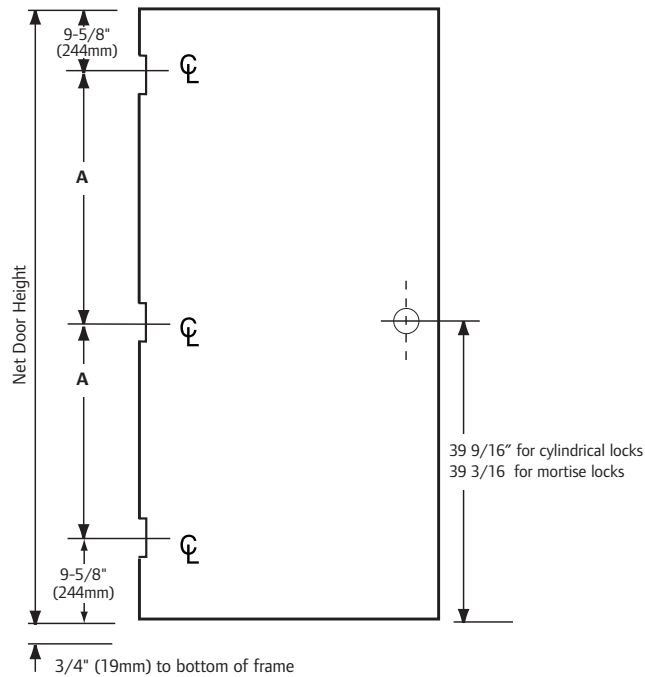
DOOR TYPE

- A** = Stile and Rail door construction
- B** = Steel stiffened door construction with edge seams
- CE** = Embossed door construction with edge seams
- H** = Hurricane door with edge seams
- L** = Laminated door construction with edge seams
- PW** = Paladin – tornado door construction with welded hinge and lock seams
- SL** = Laminated door construction with edge seams, non handed (square edge)
- T** = Temperature Rise Rated door construction with edge seams
- LF/BF/CF/TF/HF** = L, B, CE, T or H Series with filled hinge and lock edge
- LW/BW/TW/HW** = L, B, T or H Series with welded hinge and lock edge

TYPICAL HARDWARE LOCATIONS — Doors & Frames with 3 Hinges (1½ Pair)



TYPICAL FRAME ELEVATION



TYPICAL DOOR ELEVATION

TYPICAL HARDWARE PREPS

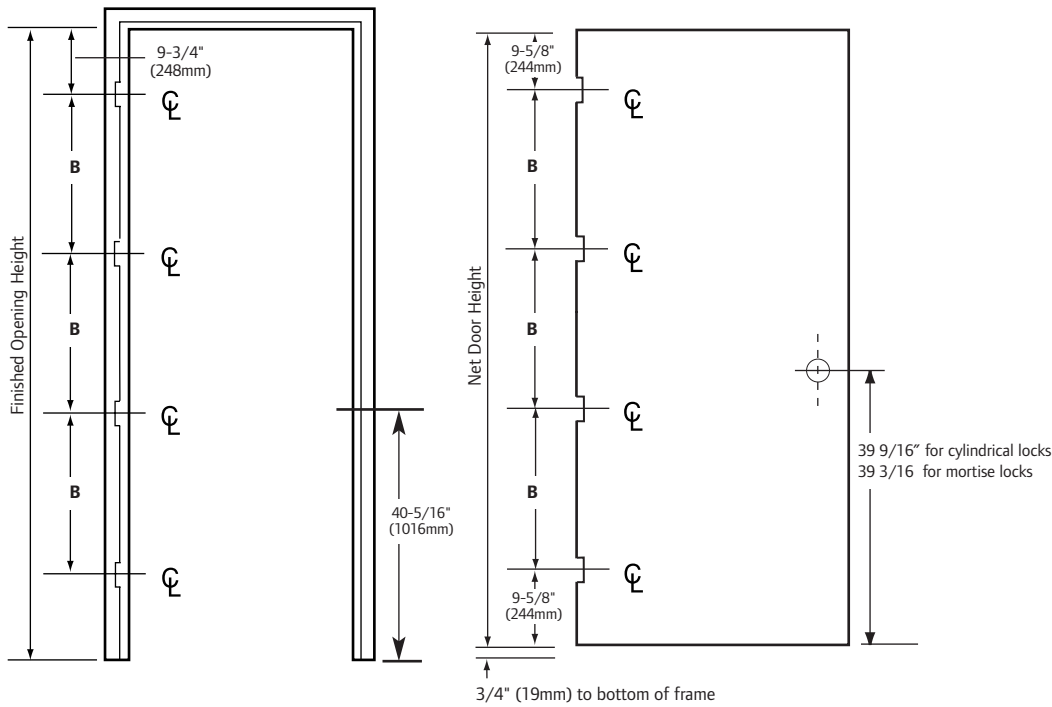
Chart 1

Door Opening Height	Dimension A
6'8" (2032mm)	29 ¹⁵ / ₁₆ " (760mm)
7'0" (2134mm)	31 ¹⁵ / ₁₆ " (811mm)
7'2" (2184mm)	32 ¹⁵ / ₁₆ " (837mm)
7'6" (2286mm)	34 ¹⁵ / ₁₆ " (887mm)

NOTES:

- 3 hinges (1 1/2 pair) are standard on 6'-8", 7'-0" 7'-2" and 7'-6" openings
- Steelcraft standard locations** - hardware preps (hinge and lock) with standard 3/4" undercut are located as illustrated above and as noted in chart 1.
- Special door undercuts** – hardware locations shown from the bottom of the door will be adjusted accordingly. Locations will be held from the top of the door.
- Special door heights** – Special door heights are available. Dimension "A" will vary accordingly.
- Refer to the hardware section of this manual for all hardware locations and most prep details.

HARDWARE LOCATIONS — Doors and Frames with 4 (2 Pair) Hinges



TYPICAL FRAME ELEVATION

TYPICAL DOOR ELEVATION

Chart 2

Door Opening Height	Dimension "B"
6'8" (2032mm)	19-61/64" (507mm)
7'0" (2134mm)	21-19/64" (541mm)
7'2" (2184mm)	21-61/64" (558mm)
7'6" (2286mm)	23-19/64" (592mm)
7'8" (2337mm)	23-61/64" (608mm)
7'10" (2388mm)	24-5/8" (625mm)
8'0" (2438mm)	25-19/64" (643mm)
8'2" (2489mm)	25-61/64" (659mm)
8'4" (2540mm)	26-5/8" (676mm)
8'6" (2591mm)	27-19/64" (693mm)
8'8" (2642mm)	27-61/64" (710mm)
8'10" (2692mm)	28-5/8" (727mm)
9'0" (2743mm)	29-19/64" (744mm)
9'2" (2794mm)	29-61/64" (761mm)
9'4" (2845mm)	30-5/8" (778mm)
9'6" (2896mm)	31-19/64" (795mm)
9'8" (2946mm)	31-61/64" (812mm)
9'10" (2997mm)	32-5/8" (829mm)
10'0" (3048mm)	33-19/64" (846mm)

NOTES:

- 4 hinges (2 pair) are standard on openings over 7'-6" in height and up to and including 10'-0" in height.
- Steelcraft standard locations** - hardware preps (hinge and lock) with standard 3/4" undercut are located as illustrated above and as noted in chart 2.
- Special door undercuts** – hardware locations shown from the bottom of the door will be adjusted accordingly. Locations will be held from the top of the door.
- Special door heights** – Special door heights are available. Dimension "B" will vary accordingly.
- Refer to the hardware section of this manual for all hardware locations and most prep details

HARDWARE LOCATIONS — Doors and Frames with 5 Hinges (2 1/2 Pair)

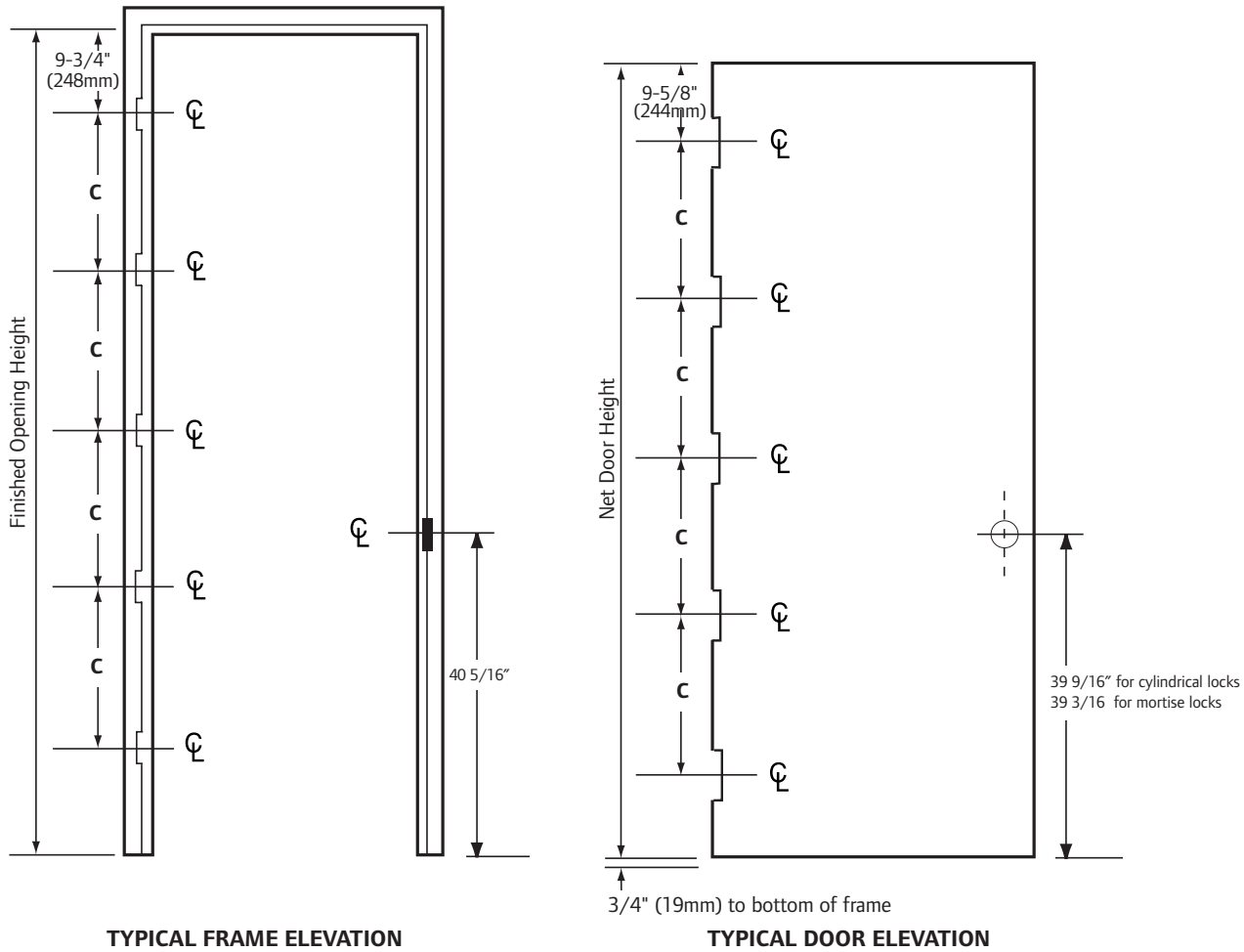


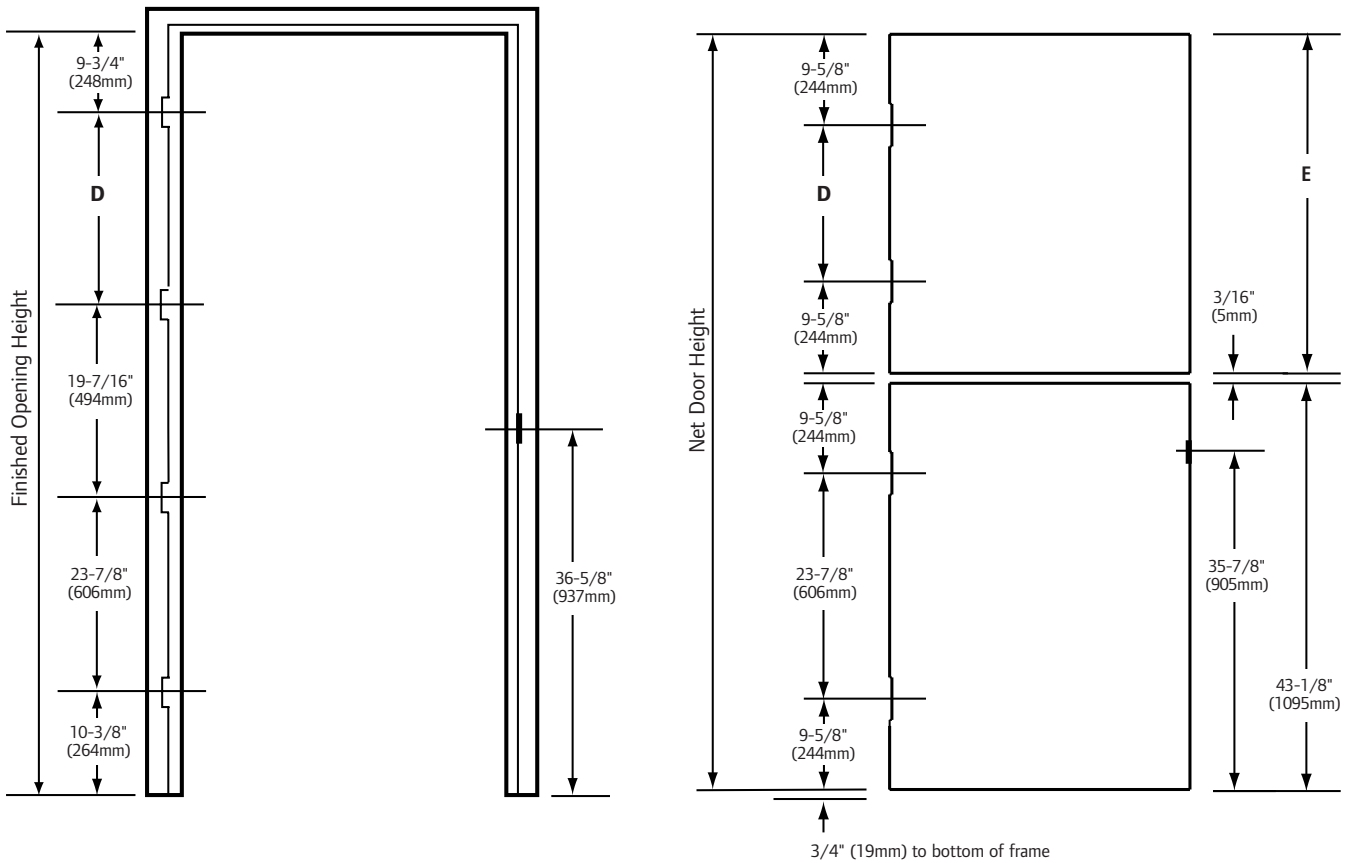
Chart 3

Door Opening Height	Dimension "C"
10'2" (3049mm)	25-15/32" (647mm)
10'4" (3154mm)	25-31/32" (660mm)
10'6" (3200mm)	26-15/32" (672mm)
10'8" (3251mm)	26-31/32" (685mm)
10'10" (3302mm)	27-15/32" (698mm)
11'0" (3353mm)	27-31/32" (710mm)

NOTES:

- 5 hinges (2 1/2 pair) are standard on openings over 10'- 0" in height.
- Steelcraft standard locations** - hardware preps (hinge and lock) with standard 3/4" undercut are located as illustrated above and as noted in chart 3.
- Special door undercuts** - hardware locations shown from the bottom of the door will be adjusted accordingly. Locations will be held from the top of the door.
- Special door heights** - Special door heights are available. Dimension "C" will vary accordingly
- Refer to the hardware section of this manual for all hardware locations and most prep details

HARDWARE LOCATIONS — Dutch Doors



DUTCH DOOR ELEVATION

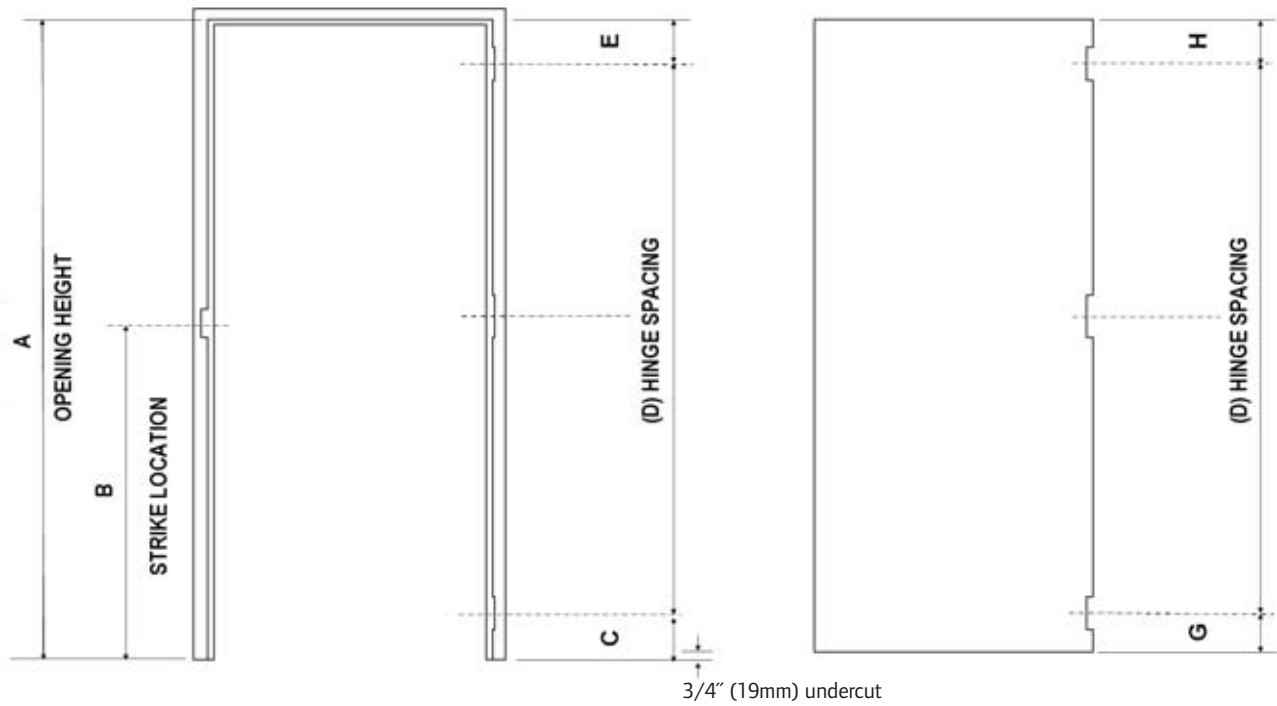
Chart 4

Door Opening Height	Dimension	
	D	E
6'8" (2032mm)	16 ⁹ / ₁₆ " (421mm)	35 ¹³ / ₁₆ " (910mm)
7'0" (2134mm)	20 ⁹ / ₁₆ " (522mm)	39 ¹³ / ₁₆ " (1011mm)
7'2" (2184mm)	22 ⁹ / ₁₆ " (573mm)	41 ¹³ / ₁₆ " (1062mm)

NOTES:

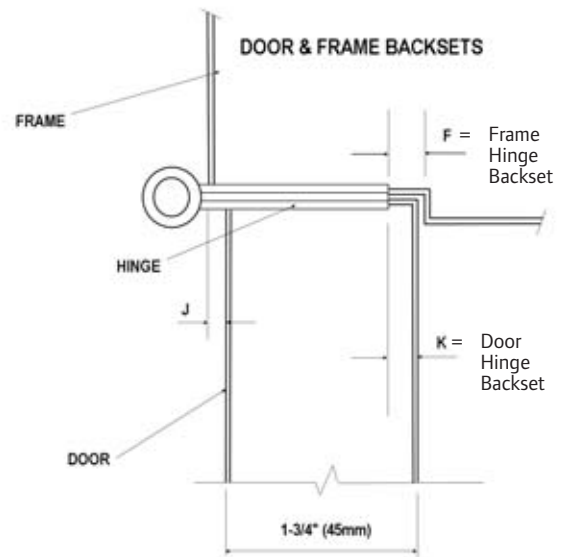
1. 4 hinges (2 pair) are standard on dutch door openings.
2. **Steelcraft standard locations** - hardware preps (hinge and lock) with standard 3/4" undercut are located as illustrated above and as noted in chart 4.
3. **Special door undercuts** – hardware locations shown from the bottom of the door will be adjusted accordingly. Locations will be held from the top of the door.
4. **Special door heights** – Special door heights are available. Dimensions "D and E" will vary accordingly.
5. **Fire Rated** dutch doors – additional locking hardware is required. Refer to the Fire Rated section of this manual
6. Refer to the hardware section of this manual for all hardware locations and most prep details

COMPARATIVE HINGE AND STRIKE LOCATIONS



NOTES:

- A. See page 1.15 for foot/inch Comparative Hinge and Strike Locations for 1-3/4" Doors and Frames with 4-1/2" x 4-1/2" Hinges.
- B. See page 1.16 for metric Comparative Hinge and Strike Locations for 45mm Doors and Frames with 114mm x 114mm Hinges.
- C. Dimensions for hinge and strike locations of the SDI Manufacturers shown on pages 1.19 and 1.20 are to the centerline of the preparation.



**COMPARATIVE HINGE AND STRIKE LOCATIONS FOR
1 3/4" DOORS AND FRAMES WITH 4-1/2" X 4-1/2" HINGES**

MANUFACTURER	A	B	C	D		E	F	G	H		J	K
	HEIGHT	STRIKE	BOTTOM HINGE	FRAME		TOP HINGE	HINGE BACKSET	BOTTOM HINGE	DOOR		HINGE BACKSET	
		CENTERLINE FROM FLOOR	CENTERLINE FROM FLOOR	HINGE SPACING		CENTERLINE FROM UNDERSIDE OF HEAD		CENTERLINE TO DOOR BOTTOM	TOP HINGE	INSET (REVEAL)		
		CENTERLINE FROM FLOOR	CENTERLINE FROM FLOOR	CENTERLINE TO CENTERLINE				CENTERLINE TO TOP OF DOOR				
STEELCRAFT	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	10 3/8"	2 @ 29 15/16" 2 @ 31 15/16" 2 @ 32 15/16" 3 @ 24 5/8" 3 @ 25 19/64"		9 3/4"	5/16"	9 5/8"	9 5/8"	1/8"	1/4"	
AMWELD	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	10 3/8" 10 3/8" 12 3/8" 8 5/16" 10 5/16"	2 @ 29 15/16" 2 @ 31 15/16" 2 @ 31 15/16" 3 @ 25 5/16" 3 @ 25 5/16"		9 3/4"	5/16"	9 5/8" 9 5/8" 11 5/8" 7 9/16" 9 9/16"	9 5/8"	1/16"	3/16"	
CECO	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	41 13/16"	9"	2 @ 31" 2 @ 33" 2 @ 34" 3 @ 25 21/64" 3 @ 26"		9"	5/16"	8 1/4"	8 7/8"	1/8"	1/4"	
CURRIES	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40"	12 1/4" 12 1/4" 12 1/4" 12 1/8" 12 1/4"	2 @ 30 1/4" 12 1/4" 2 @ 32 1/4" 2 @ 33 1/4" 3 @ 24 7/8" 3 @ 25 1/2"		7 1/4"	5/16"	11 5/8" 11 5/8" 11 5/8" 11 1/2" 11 5/8"	7 1/8"	1/8"	1/4"	
DEANSTEEL	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	12 1/4"	2 @ 30 1/4" 2 @ 32 1/4" 2 @ 33 1/4" 24 7/8" - 24 3/4" - 24 7/8" 3 @ 25 1/2"		7 1/4"	5/16"	11 1/2"	7 1/8"	1/8"	1/4"	
MESKER	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	12 1/4" 12 1/4" 12 1/4" 10 1/4" 12 1/4"	2 @ 30 1/4" 12 1/4" 2 @ 32 1/4" 2 @ 33 1/4" 3 @ 25 1/2" 3 @ 25 1/2"		7 1/4"	5/16"	11 1/2" 11 1/2" 11 1/2" 9 1/2" 11 1/2"	7 1/8"	1/8"	1/4"	
PIONEER	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	38"	12 1/4" 12 1/4" 12 1/4" 12 5/16" 12 1/4"	2 @ 30 1/4" 2 @ 32 1/4" 2 @ 33 1/4" 3 @ 24 13/16" 3 @ 25 1/2"		7 1/4"	5/16"	11 5/8" 11 5/8" 11 5/8" 11 11/16" 11 5/8"	7 1/8"	3/32"	7/32"	
REPUBLIC	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	10 3/8" 12 3/8" 12 3/8" 12 3/8" 12 1/4"	2 @ 29 15/16" 2 @ 29 15 16" 2 @ 30 15/16" 3 @ 24 7/8" 3 @ 25 1/2"		9 3/4" 11 3/4" 11 3/4" 7 1/4" 7 1/4"	5/16"	9 5/8" 11 5/8" 11 5/8" 11 5/8" 11 1/2"	9 5/8" 11 5/8" 11 5/8" 7 1/8" 7 1/8"	1/8"	1/4"	
SECURITY METAL PRODUCTS	6' 8" 7' 0" 7' 2" 7' 10" 8' 0"	40 5/16"	12 1/4"	2 @ 30 1/4" 2 @ 32 1/4" 2 @ 33 1/4" 3 @ 24 53/64" 3 @ 25 1/2"		7 1/4"	3/8"	11 1/2"	7 1/8"	1/16"	1/4"	

ALL DIMENSIONS ARE CURRENT AT THE TIME OF PUBLICATION.
REFER TO SDI-129 FOR UPDATED DIMENSIONS.

COMPARATIVE HINGE AND STRIKE LOCATIONS FOR 45MM DOORS AND FRAMES WITH 114MM X 114MM HINGES

METRIC DIMENSIONS

MANUFACTURER	A	B	C	D	E	F	G	H	J	K
	HEIGHT	FRAME					DOOR			
		STRIKE CENTERLINE FROM FLOOR	BOTTOM HINGE CENTERLINE FROM FLOOR	HINGE SPACING CENTERLINE TO CENTERLINE	TOP HINGE CENTERLINE FROM UNDERSIDE OF HEAD	HINGE BACKSET	BOTTOM HINGE CENTERLINE TO DOOR BOTTOM	TOP HINGE CENTERLINE TO TOP OF DOOR	INSET (REVEAL)	HINGE BACKSET
STEELCRAFT	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	264mm	2 @ 760mm 2 @ 811mm 2 @ 837mm 3 @ 625mm 3 @ 643mm	248mm	8mm	244mm	244mm	3.2mm	6.4mm
AMWELD	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	264mm 264mm 314mm 211mm 253mm	2 @ 760mm 2 @ 811mm 2 @ 811mm 3 @ 643mm 3 @ 643mm	248mm	8mm	244mm 244mm 295mm 192mm 243mm	244mm	1.6mm	4.7mm
CECO	2032mm 2134mm 2184mm 2388mm 2438mm	1062mm	229mm	2 @ 787mm 2 @ 838mm 2 @ 864mm 3 @ 643mm 3 @ 660mm	229mm	8mm	210mm	225mm	3.2mm	6.4mm
CURRIES	2032mm 2134mm 2184mm 2388mm 2438mm	1016mm	311mm 311mm 311mm 308mm 311mm	2 @ 768mm 2 @ 811mm 2 @ 845mm 3 @ 632mm 3 @ 648mm	184mm	8mm	295mm 295mm 295mm 292mm 295mm	181mm	3.2mm	6.4mm
DEANSTEEL	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	311mm	2 @ 768mm 2 @ 819mm 2 @ 845mm 632mm - 629mm - 632mm 3 @ 648mm	184mm	8mm	292mm	181mm	3.2mm	6.4mm
MESKER	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	311mm 311mm 311mm 260mm 311mm	2 @ 768mm 2 @ 819mm 2 @ 845mm 3 @ 648mm 3 @ 648mm	184mm	8mm	292mm 292mm 292mm 241mm 292mm	181mm	3.2mm	6.4mm
PIONEER	2032mm 2134mm 2184mm 2388mm 2438mm	965mm	311mm 311mm 311mm 313mm 311mm	2 @ 768mm 2 @ 819mm 2 @ 845mm 3 @ 630mm 3 @ 648mm	184mm	8mm	295mm 295mm 295mm 297mm 295mm	181mm	2.4mm	5.6mm
REPUBLIC	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	264mm 314mm 314mm 314mm 311mm	2 @ 760mm 2 @ 760mm 2 @ 786mm 3 @ 632mm 3 @ 648mm	248mm 298mm 298mm 184mm 184mm	8mm	244mm 295mm 295mm 295mm 292mm	244mm 295mm 295mm 181mm 181mm	3.2mm	6.4mm
SECURITY METAL PRODUCTS	2032mm 2134mm 2184mm 2388mm 2438mm	1024mm	311mm	2 @ 768mm 2 @ 819mm 2 @ 845mm 3 @ 630mm 3 @ 648mm	184mm	10mm	292mm	181mm	1.6mm	6.4mm

ALL DIMENSIONS ARE CURRENT AT THE TIME OF PUBLICATION.
REFER TO SDI-129 FOR UPDATED DIMENSIONS.