RECOMMENDED SPECIFICATIONS FOR STAINLESS STEEL DOORS AND FRAMES

Edition 2025-04

PURPOSE

The purpose of this publication is to establish basic requirements for the specification, manufacture and installation of stainless steel doors, frame products and related items, for the guidance of Architects, Specifiers, users and producers.

SCOPE

Members of the Canadian Steel Door Manufacturer's Association (CSDMA) utilize this Specification as the minimum manufacturing standard for commercial, industrial, institutional stainless steel doors and frame products.

This publication contains information regarding materials, fabrication, handling and other related work, in accordance with Construction Specifications Canada's format for the National Master Specification (NMS), except where otherwise indicated.

This Specification contains certain options and items not applicable to every project. Therefore, it is not intended to be duplicated verbatim, but to be selectively edited and compiled, after due consideration of all factors relating to performance, function and architectural requirements.

The first two (2) pages of this document are provided as reference material only, and should not appear in project specifications.

All dimensions indicated are nominal. Requirements are stated in both imperial and corresponding hard metric values. Each is considered the standard for its measurement system. Specifiers are advised not to mix measurement systems.
All products, constructions and options included in this Specification are not necessarily available from each member manufacturer. Architects and Specifiers are encouraged to contact member manufacturers to assist in product selection to meet their project requirements.

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SPECIFICATIONS - SECTION 08 11 19
STAINLESS STEEL DOORS AND FRAMES

SPEC NOTE: Coordinate design and drawing requirements and Related Work of other Sections with the following CSDMA publications:
- *"Recommended Dimensional Standards for Commercial Steel Doors and Frames"*
- *"Selection and Usage Guide for Steel Doors and Frames"*
- *"Canadian Fire Labeling Guide"*

PART 1 - GENERAL

SPEC NOTE: Stainless steel clad door and frame product are not recommended for exterior applications. Edit Section 08 11 19 references to "manufactured from" versus "clad with" stainless steel, as appropriate.

1.1 Work Included

As detailed or scheduled in the contract documents, supply only of:

.1 Stainless steel [clad] frame products including frames, transom frames (glazed or paneled), sidelight and window assemblies, fire-rated and non-rated.

.2 Stainless steel [clad] panels, fixed or removable, flush or rabbetted, similar in construction to stainless steel doors, for use in stainless steel frame product.

SPEC NOTE: 'Flush' doors are defined as those without visible seams on faces of doors.

.3 Stainless steel [clad] doors, swing type, flush, with or without glazed or louvered openings, fire-rated, with or without temperature rise ratings, and non-rated.

1.2 Related Sections

.1	Building-in [and grouting] frame product into masonry	04 05 00
.2	Building-in frame product in [wood] [steel] stud walls	[06 10 00] [09 20 00]
.3	Installation of doors and hardware	06 20 00
.4	Drilling and tapping of doors and frame product for surface mounted hardware	06 20 00
.5	Caulking of joints between frame product and other building components	07 90 00
.6	Steel doors and frame product	08 11 13
.7	Sound retardant steel door and frame assemblies	08 34 73
.8	Lead-lined steel doors and frames	08 34 49
.9	Blast retardant steel door and frame assemblies	08 39 53
.10	Builders hardware	08 71 00
.11	Weather stripping and seals	08 71 00
.12	Glass and glazing materials	08 80 00
.13	Louvers and vents	[08 90 00] [08 91 26]
.14	Wiring and/or conduit for electronic hardware	[ ]
.15	Assembly of knocked-down or slip-on frames	[ ]
16	Field measurements	[ ]
.17	Insulation of exterior frame product perimeter members	[ ]
.18	Fasteners for frame product in previously placed concrete, masonry or structural steel	[ ]
.19	Lintels, posts, columns, or other load bearing elements	[ ]

1.3 Defining Opening Sizes

SPEC NOTE: See the CSDMA publication, "Recommended Dimensional Standards for Commercial Steel Doors and Frames", for detailed listings of standard Metric (SI) and Imperial sizes. Non-standard (custom) metric and imperial sizes are available. Metric and imperial sizes should not be mixed.

.1 Width - Widths of openings shall be measured from inside to inside of frame jamb rabbets. (Referred to as "frame rabbet width" or "nominal door width").

.2 Height - Heights of openings shall be measured from the finished floor (exclusive of floor coverings) to the head rabbet of the frame. (Referred to as "frame rabbet height" or "nominal door height").

.3 Door Sizes - Doors shall be sized so as to fit the above openings and allow a 3 mm (0.125") nominal clearance at jambs and head of frame. A clearance of 19 mm (0.75") maximum shall be allowed between the bottom of the door and the finished floor (exclusive of floor coverings).

.4 Tolerances - Doors and frame product shall be manufactured and installed in accordance with the CSDMA's, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".

1.4 References

SPEC NOTE: The publications listed in Section 1.4 form part of this Specification to the extent referenced. The publications are referenced in the text by basic designation only. When a more recent Standard is available, the Specifier must verify its applicability to the Specification prior to its inclusion.

.1 ANSI/NFPA 80, Standard for Fire Doors and Fire Windows

.2 ASTM A653/A653M, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process

.3 ASTM A666, Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar

.4 ASTM C553, Specification for Mineral Fiber Blanket Insulation for Commercial and Industrial Applications

.5 ASTM C578, Specification for Rigid, Cellular Polystyrene Thermal Insulation

.6 ASTM C591, Specification for Un-Faced Pre-formed Rigid Cellular Polyisocyanurate Thermal Insulation

.7 ASTM C 592, Specification for Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction

.8 ASTM C1289, Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board

.9 CAN4-S104, Standard Method for Fire Tests of Door Assemblies

.10 CAN4-S106, Standard Method for Fire Tests of Window and Glass Block Assemblies

.11 CGSB 41-GP-19MA , Rigid Vinyl Extrusions for Windows and Doors

.12 CSDMA, Recommended Dimensional Standards for Commercial Steel Doors and Frames,

.13 CSDMA, Selection and Usage Guide for Steel Doors and Frames,

.14 CSDMA, Recommended Specifications for Commercial Steel Door and Frame Products,

SPEC NOTE: The approved submittal drawings and the approved hardware schedule are the versions that have been provided to the contractor responsible for supply of steel door and frame products at the time of release for fabrication. These drawings and schedules are considered part of the contract documents.

1.5 Submittals

.1 Submit shop drawings in accordance with Section 01 33 23.

.2 Indicate each type of door, frame, steel, construction and core.

.3 Indicate material type, finish and thickness, mortises, reinforcements, anchorages, locations of exposed fasteners, openings (glazed, paneled or louvered) and arrangement of standard hardware.

.4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule of the Architect.

.5 Contractor responsible for coordination and installation of products provided under this Section shall;

.1 Verify and provide to the contractor responsible for the supply of steel door and frame products, actual opening sizes and field conditions by field measurement before fabrication. Submittal drawings shall reflect measurements and conditions provided, and product manufactured accordingly. Coordinate field measurements with fabrication and construction schedules to avoid delays.

.2 Verify that substrate conditions, whether existing or installed under other Sections, are as detailed in the Architect's drawings, and are acceptable for product installation in accordance with the manufacturer's instructions.

.6 Manufacturer shall not proceed with fabrication without receipt of approved submittal drawings and approved hardware schedule.

1.6 Warranty

Materials and workmanship shall be warranted by the manufacturer for a period of one (1) year from date of shipment, when stored and installed in accordance with the manufacturer's recommendations, and Sections 3.1 and 3.2 of this Specification.

PART 2 - PRODUCTS

2.1 Materials

.1 Acceptable Materials

Steel doors and frame product manufactured in accordance with this Specification by CSDMA members, are eligible for use on this project.

SPEC NOTE: Doors and frame product are manufactured from two type of stainless steel. Type 304, with galvanneal internal components, is recommended for most typical commercial applications where aesthetics is the primary design consideration. Include 2.1.2.1 for this application. Type 316, with Type 316 internal components, should be specified where corrosion resistance is the primary concern, as in areas such as public swimming pools, which are highly chlorinated. Include 2.1.2.2 only in such instances. Stainless steel Types and Finishes are specified independent of each other. Both Types are available in 2B (mill) up to 'Excelsior' XL Buff (mirror) finishes. Clad construction should only be used for interior, aesthetic applications.

.2 Steel

[.1 Door face [sheets] [cladding], frame [members] [cladding], glazing trim and stops shall be stainless steel to ASTM A666, Type 304, [2B] [4] ['Excelsior' XL Blend S] ['Excelsior' XL Buff] Finish. Balance of components[, base door face sheets and base frame members for stainless steel clad product] shall be commercial grade steel to ASTM A653, CS, Type B, coating designation ZF75 (A25) minimum.]

[.2 Door face sheets, frame members, internal components, glazing trim and stops shall be stainless steel to ASTM A666, Type 316. Door face sheets, frame members, glazing trim and stops shall be [2B] [4] ['Excelsior' XL Blend S] ['Excelsior' XL Buff] Finish. Internal components shall be 2B (mill) Finish.]

.3 Minimum steel thicknesses shall be in accordance with Appendix 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".

.3 Door Core Materials - Standard

.1 Honeycomb

Structural small cell 25.4 mm (1") maximum kraft paper 'honeycomb'. Weight: 36.3 kg (80 lb.) per ream minimum, density: 16.5 kg/m^3 (1.03 pcf) minimum, sanded to required thickness.

.2 Fiberglass
Loose batt type, density 24 kg/m3 (1.5 pcf) minimum, conforming to ASTM C553 or ASTM C592.

.3 Polystyrene
Rigid extruded fire retardant, closed cell board. Density; 16 to 32 kg/m^3 (1 to 2 pcf), thermal values; RSI 1.0 (R 6.0) minimum, Type 1, in accordance with ASTM C578.

.4 Door Core Materials - Optional

.1 Polyisocyanurate
Rigid, modified polyisocyanurate, closed cell board. Density; 32 kg/m^3 (2.0 pcf) minimum, thermal values; RSI 1.9 (R 11.0) minimum, in accordance with ASTM C591 (un-faced) or C 1289 (faced).

SPEC NOTE: 2.1.5 is applicable to base door and frame of stainless steel clad product only. Delete for doors and frame product manufactured from stainless steel.

.5 Primers
Rust inhibitive touch-up only.

.6 Miscellaneous

.1 Door Silencers
Single stud rubber/neoprene type.

.2 Exterior Top Caps
Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.

.3 Frame Thermal Breaks
Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.

2.2 Fabrication - Frame Products

SPEC NOTE: "Frame Products" include steel frames, transom frames, sidelight and window assemblies. Section 2.2.1 applies to all construction 'types', unless indicated otherwise.

.1 General

SPEC NOTE: Frame product manufactured from 'Excelsior' XL Buff (mirror) Finish stainless steel is not available in face welded type construction due to limitations in re-finishing welded areas. Refer to the CSDMA, "Selection and Usage Guide for Steel Doors and Frames", for guidance on the selection of appropriate frame gauges.

.1 Exterior frame product shall be 16 gauge. Exterior frames shall be [welded] [knocked-down] type construction [, thermally broken]. Exterior transom frames, sidelight and window assemblies shall be welded type construction [, thermally broken]. [Sub-frame for] stainless steel [clad] interior frame product shall be 16 gauge. [Sub-frame for] stainless steel [clad] interior frames and window assemblies shall be [welded] [knocked-down] [slip-on] type construction. Interior transom frames shall be [welded] [knocked-down] type construction. Interior sidelight assemblies shall be welded type construction. [Cladding for all frame product shall be 18 gauge.]

.2 Frame product shall be mortised, blanked, reinforced, drilled and tapped at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.

.3 Mortised cutouts shall be protected with steel guard boxes (may be omitted on dry wall

applications).

.4 Frame product shall be reinforced only, where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.

.5 Provide anchorage appropriate to floor, wall and frame construction. Each wall anchor shall be located immediately above or below each hinge reinforcement on the hinge jamb and directly opposite on the strike jamb. For rebate opening heights up to and including 1520 mm (60") provide two (2) anchors, and an additional anchor for each additional 760 mm (30") of height or fraction thereof, except as indicated below. Frames in previously placed concrete, masonry or structural steel shall be provided with anchors located not more than 150 mm (6") from the top and bottom of each jamb, and intermediate anchors at 660 mm (26") on centre maximum. Fasteners for such anchors shall be provided by others.

.6 Minimum reinforcing, anchor and other component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".

.7 Each door opening shall be prepared for single stud rubber door silencers, three (3) for single door openings, two (2) for double door openings, except on gasketed frame product.

.8 Direction of stainless steel grain shall be vertical on frame faces.

SPEC NOTE: The following are not generally available as fire-rated product: thermally broken frame product, or louvers or dampers in transoms, sidelights or windows. Fire-rated transom frames, sidelight and window assemblies are generally available only as welded type product.

.9 Fire-rated frame products shall be provided for those openings requiring fire protection as determined and scheduled by the Architect. Frames, transom and sidelight assemblies shall be listed for conformance with CAN4-S104. Window assemblies shall be listed for conformance with CAN4-S106. All fire-rated frame products shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service. Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer. Fire-rated frame products shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers.

2.2.2 Welded Type

.1 Frame product shall be accurately mitered or mechanically jointed.

SPEC NOTE: Edit 2.2.2.2 to include either product fabricated from or clad in stainless steel.

[.2 Perimeter corner joints of stainless steel frame product:

[.1 Fabricated from other than 'Excelsior' XL Buff (mirror) finish stainless steel shall be continuously welded on the profile faces, with exposed faces ground to a smooth, uniform, seamless surface.]

[.2 Fabricated from 'Excelsior' XL Buff (mirror) finish stainless steel shall be provided with internal reinforcing gussets or plates securely attached to each section, or integral tabs and slots. Gussets, plates or tabs and slots shall be internally welded to the mating section with visible hair-line joints.]

or

[.2 [As defined in Appendix 2 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products", perimeter corner joints of sub-frame for stainless steel clad frame product shall be:

[.1 Profile welded; punch mitered - continuously welded on the profile faces, rabbets, returns and soffit intersections, or saw mitered - continuously welded on the

profile faces, rabbets, returns, stops and soffit intersections. Punch or saw-mitered, at the manufacturer's discretion. All profile welded frame product sub-frame exposed faces shall be ground to a smooth, uniform, seamless surface.]

[.2 Face welded; continuously welded on the profile faces, with sub-frame exposed faces ground to a smooth, uniform, seamless surface.]

[.3 Tack welded; welded on the faces and returns, with exposed hairline joint intersections.]

.4 Stainless steel cladding shall be securely attached to each section, presenting visible hair-line joints.]]

.3 Joints at mullions, sills and center rails shall:

.1 Be coped accurately, butted and tightly fitted.

.2 At intersecting flush profile faces, match corner joints when assembled.

.3 At intersecting recessed profile faces, be securely welded to concealed reinforcements, with exposed hairline face seams.

.4 At all other intersecting profile elements, have exposed hairline face seams.

.4 Where frame product is to be installed prior to the adjacent partition, a floor anchor shall be securely attached to the inside of each jamb profile. Each floor anchor shall be provided with two (2) holes for securing to the floor. For conditions that do not permit the use of a floor anchor, an additional wall anchor, located within 150 mm (6") of the base of the jamb, shall be substituted.

.5 Weld in two (2) temporary jamb spreaders per door opening to maintain proper alignment during shipment and handling, which shall not be used for installation.

.6 Glazing stops shall be formed channel, matching the Type and Finish of the frameproduct, minimum 16 mm (0.625") height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.

.7 When required due to site access, when advised by the contractor responsible for coordination or installation, as specified on the Architect's drawings or due to shipping limitations, frame product for large openings shall be fabricated in sections as designated on the approved submittal drawings, with splice joints for field assembly and welding by others.

.8 Prior to shipment, mark each frame product with an identification number as shown on the approved submittal drawings.

2.2.3 Knocked-Down Type

SPEC NOTE: Include 2.2.3 only if referenced in 2.2.1.1. Components for knocked-down type frames are intended to be assembled as a complete unit prior to installation.

.1 Knocked-down type frames shall be shipped unassembled.

.2 Frames shall have mechanical joints which inter-lock securely and provide functionally satisfactory performance when assembled and installed in accordance with the manufacturer's published instructions.

.3 Where frame product is to be installed prior to the adjacent partition, a floor anchor shall be securely attached to the inside of each jamb profile. Each floor anchor shall be provided with two (2) holes for securing to the floor. For conditions that do not permit the use of a floor anchor, an additional wall anchor, located within 150 mm (6") of the base of the jamb, shall be substituted.

.4 Prior to shipment, components shall be designated with an identifier corresponding to the numbering on the approved submittal drawings.

2.2.4 Slip-On Type

SPEC NOTE: Include 2.2.4 only if referenced in 2.2.1.1. Components for slip-on type frames are intended for installation in a rough stud opening after drywall has been applied. Slip-on type construction is not generally available for transom, sidelight or other than 4-sided window assemblies. Vertically stiffened and TRR doors are not recommended for use in slip-on type construction frames.

.1 Slip-on type frames shall be shipped unassembled.

.2 Frames shall have mechanical joints which inter-lock securely and provide functionally satisfactory performance when installed in accordance with the manufacturer's published instructions.

.3 Slip-on frames shall be provided with manufacturer's proprietary design of wall anchorage comprising single, adjustable tension type per jamb and provision for secure attachment of each jamb base to stud runners.

.4 Prior to shipment, components shall be designated with an identifier corresponding to the numbering on the approved submittal drawings.

2.3 Fabrication - Doors

SPEC NOTE: Section 2.3.1 applies to all construction 'types', unless otherwise indicated.

.1 General

.1 Doors shall be laminated core construction.

SPEC NOTE: Specify longitudinal edge seams as either visible or not visible.

.2 Longitudinal edges [of base door, when clad] [doors fabricated from stainless steel] shall be [[mechanically inter-locked] [mechanically inter-locked, adhesive assisted] with visible edge seams. [Clad doors shall have visible hair-line butted joints at door edges.]] [continuously welded and finished to match face sheets, with no visible edge seams.]

.3 Doors shall be mortised, blanked, reinforced, drilled and tapped at the factory for templated hardware only, in accordance with the approved hardware schedule and templates provided by the hardware supplier.

.4 Holes 12.7 mm (0.5") diameter and larger shall be factory prepared, except mounting and through-bolt holes, which are by others, on site, at time of hardware installation. Holes less than 12.7 mm (0.5") diameter shall be factory prepared only when required for the function of the device (for knob, lever, cylinder, thumb or turn pieces) or when these holes over-lap function holes.

.5 Doors shall be reinforced only, where required, for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware. Drilling and tapping is by others, on site, at time of installation.

.6 Top and bottom of doors shall be provided with inverted, recessed, welded steel channels. Exterior doors, and where otherwise scheduled by the Architect, shall be provided with flush [PVC] [steel] top caps.

.7 Minimum reinforcing and component gauges shall be in accordance with Table 1 of the CSDMA, "Recommended Specifications for Commercial Steel Door and Frame Products".

SPEC NOTE: 2.3.1.8 is applicable to the base door of stainless steel clad product only.

.8 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

.9 Fire-rated doors shall be provided for those openings requiring fire protection and temperature rise ratings, as determined and scheduled by the Architect. Such products shall be listed for conformance with CAN4-S104. All fire-rated doors shall bear the label of, and be listed by a nationally recognized testing agency having a factory inspection service.

Labeling shall be in accordance with NFPA 80, the listing authority's policies and label materials, and shall identify the manufacturer. Fire-rated doors shall be constructed as listed for labeling in the Follow-Up Service Procedures/Factory Inspection Manuals issued by the listing agency to individual manufacturers.

.10 Prior to shipment, mark each door with an identification number as shown on the approved submittal drawings.

2.3.2 Laminated Core Construction

SPEC NOTE: Refer to the CSDMA publication, "Selection and Usage Guide for Steel Doors and Frames", for guidance on the selection of appropriate face sheet gauges. For core materials, 'Honeycomb' or 'Polystyrene' are standard (ref 2.1.3). For insulated doors specify polystyrene or polyisocyanurate cores (ref 2.1.4.1 or 2.1.4.2). ***Laminated vertical stiffener core doors are not considered to be thermally insulated.*** *Thermally broken doors are not available.*

.1 Both face sheets for exterior doors shall be formed from a sheet of [16] [18] gauge stainless steel with [honeycomb] [polystyrene] [polyisocyanurate] [vertical steel stiffener] core, laminated under pressure to face sheets.

.2 [Both face sheets for interior doors shall be formed from a sheet of [16] [18] gauge stainless steel.] [Both face sheets for interior doors to be clad in stainless steel shall be formed from a sheet of [16] [18] gage steel. Cladding shall be 18 gage stainless steel.] Construct interior doors with [honeycomb] [polystyrene] [vertical steel stiffener] core, laminated under pressure to face sheets.

SPEC NOTE: 2.3.2.3 and 2.3.2.4 are applicable for laminated, vertical steel stiffener core construction doors only.

.3 Vertical steel stiffeners shall be securely laminated to each face sheet at 150 mm (6") on center maximum.

.4 Voids between vertical stiffeners shall be filled with fiberglass batt type insulation.

.5 Direction of stainless steel grain shall be vertical on door faces and edges.

PART 3 - EXECUTION

3.1 Site Storage and Protection of Materials

SPEC NOTE: Site storage and the protection of materials are not the responsibility of the steel door and frame manufacturer. The following is provided for the direction of the contractor responsible for site storage and protection of materials.

.1 Doors and frame product shall be removed from their wrappings or coverings upon receipt on site, be stored in a vertical position, and be spaced with blocking to permit air circulation between them.

.2 All materials shall be thoroughly inspected upon receipt and all discrepancies, deficiencies and/or damages shall be immediately reported, in writing, to the supplier.

.3 All damages incurred during shipment shall be noted on the carrier's Bill of Lading and immediately reported, in writing, to the supplier.

.4 Any scratches or disfigurement of doors or frame product caused by shipping or handling shall be refinished to their original state.

.5 All materials shall be properly stored on planks or dunnage, out of water and covered to protect from damage from any cause.

3.2 Installation

SPEC NOTE: Refer to the manufacturer's installation instructions for Slip-On type frames for detailed recommendations. Installation is not the responsibility of the steel door and frame manufacturer. The following is provided as recommendations for the contractor responsible for installation of these products.

.1 Prior to installation, remove temporary shipping spreaders.
.2 Prior to installation, the area of floor on which the frame is to be installed, and within the path of the door swing, shall be checked and corrected for flatness.
.3 Door and frame product shall be checked for correct size, swing, rating and opening number.
.4 The supplier shall be advised of any discrepancies prior to installation.
.5 Set frames plumb, square, level and at correct elevation.
.6 Fire-rated door and frame product shall be installed in accordance with the terms of their listings, NFPA-80, or the local Authority Having Jurisdiction (AHJ).
.7 Secure anchorages and connections to adjacent construction.
.8 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1200 mm (48") in width.
.9 During the setting of frame product, check and correct as necessary for opening width, opening height, square, alignment, twist and plumb, in accordance with the CSDMA, "Recommended Dimensional Standards for Commercial Steel Doors and Frames".
.10 Remove wood spreaders after frames have been built-in.

SPEC NOTE: The use of water based masonry grout, with or without antifreeze agents, should be carefully weighed during the specification process. The grouting of mullions and other closed sections is not recommended, and plaster based grouts should not be used. Grouting is not required for fire-rated frame product.

.11 Make allowance for deflection to ensure structural loads are not transmitted to frame product.
.12 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.
.13 Adjust operable parts for correct clearances and function.
.14 Install louvers, glazing and door silencers.

END OF SECTION 08 11 19