CSI–SECTION 08130

STAINLESS STEEL DOORS AND FRAMES SPECIFICATIONS

This section is based on products manufactured by Next Door Company, at the following address:

1840 North Commerce Parkway
Suite 1
Weston, FL 33326-3200
tel. (954) 772-6666 or (888) 791 – 4450
fax (954) 772-8466
www.nextdoorco.com

Next Door manufactures standard and custom stainless steel doors and frames with a variety of polished surface finishes, decorative electro-plate finishes, textured, abraded, etched and embossed patterns, as well as multiple vision and louver options. Doors can be fire-rated up to Class A 3-hour, sound rated up to STC 51, and built with bullet-resistant construction.

An electronic copy of this CSI 3 part specification is available upon request, or visit our Web site.

PART I GENERAL

1.1 SECTION INCLUDES

Delete items below not required for project.

A. Stainless steel doors.

B. Stainless steel frames.

C. Fixed stainless steel panels.

D. Stainless steel sidelight, borrowed light & transom frames.

E. Stainless steel vision lights and/or louvers installed in stainless steel doors.

F. Bullet resistant construction.

G. Stainless steel storefront.

1.2 RELATED SECTIONS

Delete any sections below not relevant to this project; add others as required.

A. Section 03300 - Cast-in-place concrete.

B. Section 04200 - Unit masonry.

C. Section 6200 - Finish carpentry.

D. Section 07900 - Joint sealers

E. Section 8200 - Wood doors and frames

F. Section 08710 - Door hardware.

G. Section 08800 - Glass and glazing.

H. Section 09260 - Gypsum board systems.

I. Section 09200 - Lath and plaster.

J. Section 09900 - Painting.

K. Section 08417 – Stainless steel storefront.

L. Section 08116 – Bullet-resistant construction.

1.3 REFERENCES

Delete references from the list below that are not actually required by the text of the edited section.

A. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.

B. ASTM A 240 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

C. ASTM E 90-90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.

D. ASTM E 413 - Classification for Rating Sound Insulation.

E. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

F. UBC 7-2-97 - Fire Tests of Door Assemblies, Parts I and II.

G. UL10b - Fire Test of Door Assemblies.

H. UL10c - Positive Pressure Fire Test of Door Assemblies.

I. ASTM E 152 - Standard Methods of Fire Tests of Door Assemblies.

J. AWS D9.1 - Sheet Metal Welding Code.

K. NAAMM HMMA 866 - Guide Specifications for Stainless Steel Doors and Frames.

L. NAAMM Metal Finishes Manual.

M. ANSI A250 SDI 100 - Recommended Specifications standard Steel Doors and Frames.

N. NFPA 80 - Fire Doors and Windows.

O. SDI 105 - Recommended Erection Instructions for Steel Frames.

P. UL 752 'Levels 1 thru 8' - Standard for Bullet-Resistant Equipment and Construction.

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1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Provide manufacturer's standard details and catalog data demonstrating compliance with referenced standards.

C. Shop Drawings: Submit for approval the followings:

1. Shop drawings for the fabrication and installation of stainless steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location, installation requirements of finished hardware and reinforcements, and details of joints and connections, and vision lite requirements.
2. Schedule of doors and frames shall use the same reference numbers for details and openings as those on the contract drawings.

Delete item #3 below if no grained finish is specified.

3. Show all graining details.

D. Samples: (only when required with submittals)

1. Door: 12-inch square corner section with hinge preparation, and top and internal construction.
2. Door Frames: 12-inch by 12-inch corner section with hinge reinforcement and plaster guard.
3. Finishes and patterns: 10-inch square sheets of each finish and pattern.

E. Advise the Architect in writing should any doors be ineligible for standard fire resistance labels due to door size, hardware, vision openings, or other features required by the Contract Documents.

F. Submit manufacturer's recommended cleaning and maintenance instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store products indoors and protect from moisture, construction traffic, and damage.

B. Store doors and frames on non-metal skids a minimum of 4 inches off the ground, with minimum 1/4-inch spacers between adjacent units, doors and/or frames. Cover to permit air circulation.

C. All material to be fully crated such that it would survive any distance of transportation to the job site or storage location.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Provide Stainless Steel Doors And Frames fabricated by Next Door Company;
1840 N. Commerce Parkway, Suite 1,
Weston, Florida 33326;
Telephone (954)772-6666, Fax (954)772-8466.

B. Provide both doors and frames from a single manufacturer who has specialized (dedicated facility, tooling, equipment, etc.) in the manufacture of commercial stainless steel entry doors and frames for not less than 5 years.

C. Provide Doors and Frames from a single manufacturer who has a dedicated facility for the assembly, welding, and polishing of stainless steel. The manufacturer should have dedicated tooling, fixtures, and machine tools, for the manufacture of stainless steel products. Dedicated is defined as exclusively used for the use on stainless steel materials. This is to avoid contamination with other metals, especially carbon steel.

2.2 MATERIALS

Delete one of the two following paragraphs. Type #304 stainless steel is standard. Type #316 stainless steel may be specified for extremely corrosive environments.

A. Steel: ASTM A 167, commercial quality type #304 stainless steel.

B. Steel: ASTM A 167, commercial quality type #316 stainless steel.

2.3 FABRICATION

A. General:

1. Door shall be integrally manufactured using face sheets of prime stainless steel. No cladding or substrate will be allowed.
2. All internal components, reinforcements and anchors shall be fabricated from stainless steel.
3. Fabricate in compliance with referenced standards, except where exceeded by the requirements of this Specification.

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Delete one of the following two paragraphs - either ANSI A250.8 (SDI 100) or HMMA 860 should be used as the basic standard, not both.

B. Door Construction, General: Comply with ANSI A250.8 - 2003. (SDI 100)

C. Door Construction, General: Comply with NAAMM HMMA 866.

Delete all but one of the following paragraphs, unless more than one type of core or construction style is required. In that case, edit the specification to indicate the types required and where each type is used. Consult the manufacturer's literature for more information on sound ratings and fire ratings.

1. Core: Construct doors with polystyrene insulation cores, permanently bonded to face skins.
2. Core: Construct doors with polyurethane insulation cores, permanently bonded to face skins. These doors will not be fire rated.
3. Core. Construct doors with honeycomb internal construction, permanently bonded to face skins
4. Core: Construct doors with vertical stainless steel stiffeners filled with mineral rock wool or fiberglass batt insulation between stiffeners. Vertical stiffeners can be welded or bonded in place; both options will have the same fire rating capability.
5. Core: Construct doors with a lead lined core, permanently bonded to adjacent support core material and face skins
6. Sound-rated Doors: Provide doors tested in accordance with ASTM E 90-90 and classified in accordance with ASTM E 413 as follows:
    a. STC 51.
7. Construction: seamless, fully and continuously welded edges, ground smooth, and re-polished to required finish. No visible edge seam is allowed.
8. Construction: completely seamless construction, where all sides, top, and bottom channels are fully and continuously welded flush, ground smooth and re-polished to required finish. No visible edge seam, top cap seam, or bottom cap seam is allowed.

Delete the following paragraph and its subparagraphs if fire-rated doors are not required.

1. Fire-Rated Doors: Provide assemblies labeled by Underwriters Laboratory or Warnock-Hersey, complying with NFPA 80, and tested in accordance with ASTM E 152.
    a. Stairwells: Temperature rise rating of 450 degrees F at 1-1/2 hours.
    b. Cores: In accordance with tested assemblies.
    c. Construction: seamless, fully and continuously welded edges, ground smooth, and re-polished to required finish. No visible edge seam is allowed.
    d. Construction: completely seamless construction, where all sides, top, and bottom channels are fully and continuously welded flush, ground smooth and re-polished to required finish. No visible edge seam, top cap seam, or bottom cap seam is allowed.

D. Thickness: 1-3/4 inches unless otherwise indicated.

E. Door Edge Construction: (Edge construction does not affect fire ratings)

1. Seamless; fully and continuously welded except at hardware cutouts; refinished and polished to match face surface. No exposed joints or seams.
2. Lock Seam; visible vertical edge seam on hinge and lock edges, except where hardware cut-out exist.

F. Door Gauge:

Delete all but one of the following five paragraphs.

1. 18 gauge (0.042" minimum).
2. 16 gauge (0.053" minimum).
3. 14 gauge (0.067" minimum).
4. 12 gauge (0.093" minimum).
5. As indicated on the door schedule.

Delete the following paragraph if no fixed panels, such as transoms, are required.

G. Fixed Panel Construction: Construct panels as specified for doors, above. Provide concealed means of attachment to frames.

H. Frame Construction, General: Comply with standards referenced for doors, above.

Delete one of the following as required.

1. All corners, joints, and intersections to be fully and continuously welded. Trim face welds to be ground smooth, and re-polished to achieve specified finish. Miter or butt stops.

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2. Door frames: Miter or butt trim faces and join with continuous trim face welds. Trim face welds to be ground smooth, refinished and re-polished to achieve specified finish. Miter or butt stops.

G. Frame Gauge:

Delete all but one of the following six paragraphs.

1. 16 gauge (0.053" minimum).
2. 14 gauge (0.067" minimum).
3. 12 gauge (0.093" minimum).
4. Interior frames, 16 gauge; exterior frames, 14 gauge.
5. Interior frames, 14 gauge; exterior frames, 12 gauge.
6. As indicated on the door schedule.

Delete the one of the first two lines if cut-off stops (hospital stops) are required. Indicate on the door schedule which frames require cut-off stops.

I. Cut-off / Hospital stops:

1. Where indicated, provide 45 degree stops.
2. Where indicated, provide 90 degree stops.
3. Seams to be fully welded, ground smooth and repolished to match vertical graining of jamb and trim face.

J. Floor Anchors: one per jamb, minimum 14-gauge angle with two 3/16-inch diameter holes in floor clip for bolting to floor; secured to back of frame. Weld or burn marks on the exposed faces will not be acceptable.

Delete the following paragraph if there are no doors in masonry partitions.

K. Jamb anchors in masonry partitions: Masonry tee anchors, minimum 16 gauge with 2 inch x 10-inch legs.

1. Up to 60 inches high: 2 jamb anchors.
2. Over 60 up to 90 inches high: 3 jamb anchors.
3. Over 90 up to 96 inches high: 4 jamb anchors.
4. Over 96 inches high: 4 jamb anchors plus 1 for each 24 inches or fraction thereof over 96 inches.

NOTE: Weld or burn marks on the exposed faces will not be acceptable.

Delete the following paragraph if there are no doors in existing masonry partitions.

5. At existing concrete and masonry partitions provide anchors suitable for the wall conditions.

Delete the following paragraph if no doors occur in stud partitions.

L. Jamb Anchors in Stud Partitions: Zee-shaped clip, minimum 16 gauge, secured to back of frame.

1. Up to 60 inches high: 2 jamb anchors.
2. Over 60 up to 90 inches high: 4 jamb anchors.
3. Over 90 up to 96 inches high: 5 jamb anchors.
4. Over 96 inches high: 5 jamb anchors plus 1 for each 24 inches or fraction thereof over 96 inches.

NOTE: Weld or burn marks on the exposed faces will not be acceptable.

M. Door and Frame Reinforcements for Builder' s Hardware:

1. Hinge reinforcements: 1-1/4 inch x. 10 inches long x 3/16-inch thick, stainless steel.
2. Strike reinforcements: 14 gauge stainless steel.
3. Closer reinforcements: 14 gauge stainless steel.
4. Surface hardware reinforcements: 14 gauge stainless steel.
5. Dust covers: At frame hinge preps, 1⁄4 inch thick closed cell polyurethane foam with acrylic self-adhesive backing or minimum 22 gauge stainless steel; minimum 22 gauge stainless steel provided behind all other mortised hardware cutouts.

NOTE: Weld or burn marks on the exposed faces will not be acceptable.

N. Fabricate all components for doors and frames from stainless steel. Other types of steel, or non-stainless steel will not be acceptable.

O. Welding: Execute weldments such that no weld marks are visible on any exposed surface, Comply with AWS D9.1. Perform welding with gas tungsten arc (TIG) equipment, alloyed 308 stainless welding rods. Maintain proper welding temperature to avoid discoloring adjacent metal. Clamp components in appropriate jigs to avoid distortion and warpage. Discolored, distorted, or warped work will not be accepted.

P. Carton or crate doors to prevent damage in shipping and handling. Apply PVC film or equivalent material to protect against damage after delivery and removal from shipping crates.

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2.4 FINISHES

The metal finishes and Design Groups, below, are standard order. The factory will assist with custom designs. Choose one of these finishes and/or Design Groups to suit project requirements. Custom designs or patterns will be provided by Novel Architectural Products, 3425 NW 167th Street, Miami, FL, 33056. (www.novelamerica.com)

The #2B Finish is intended for field painting. Specify field painting in Division 9.

A. Stainless Steel Finish:
   1. NAAMM #4 brushed (satin) finish.
   2. NAAMM #8 mirror (polished) finish.
   3. NAAMM #2B dull (mill) finish.

B. Embossed Design Group (Shapes) :
   1. Dome Series: 1/2-inch elliptical embossed shape.
   2. Orbital Series: 1-1/2-inch round embossed shape.
   3. Cubic Series: 1-1/2-inch square embossed shape.
   4. Custom

C. Textured Design Group. (Must be specified and samples submitted)
   1. Random Swirl
   2. Angel Hair / Non-directional
   3. Long grain satin
   4. Graffiti with highlights
   5. Beaded
   6. Other; please specify by name (see www.novelamerica.com)

D. Patterned Design Group. (Must be specified and samples submitted)
   1. Brushed Series.
   2. Raised / Embossed Series.
   3. Decorative Electroplating

E. Etched Design Group. (Must be specified and samples submitted)
   1. Custom.

Design Groups, above, are available in a variety of standard and custom patterns. The overall patterns on the door, as well as vision lights, should be outlined on the drawings.

Delete one of the following finishes. The decorative finishes can also be applied to frames.

F. Frames:
   1. NAAMM #4 brushed (satin) finish.
   2. NAAMM #8 mirror (polished) finish.
   3. NAAMM #2B dull (mill) finish (unprimed).

Delete the following two paragraphs if the direction of graining of brushed finish is not a concern. Otherwise, delete the one that is not applicable.

   4. Graining: Graining shall run in the direction of the longest dimension of the fabrication member (eg. head, jamb, mullion, bar) prior to assembly.
   5. Graining: All trim faces shall be re-polished to attain consistent vertical graining.

G. Weldments: Exposed spot welds or other weld marks on exposed surfaces are not acceptable. Grind exposed welds smooth, and re-polish to match specified and surrounding finishes.

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PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that dimensions are correct and project conditions are suitable for installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install doors and frames in accordance with manufacturers instructions and referenced standards.

B. Locate, secure, and brace frames prior to construction of adjacent walls and partitions.

1. Remove shipping spreader before installation of frame.
2. Provide temporary supports, and remove only after anchoring frames to permanent construction.

C. Ensure that doors and frames are installed plumb and true, free of warp or twist, within tolerances specified in referenced standards.

3.3 ADJUST AND CLEAN

A. Clean doors and frames in accordance with manufacturer's instructions.

B. Restore slight blemishes in finishes in accordance with manufacturer's instructions to match original finish. Remove and provide new doors and frames where repairs are not acceptable to the architect.

End of Section 08130