This section includes Lead-Lined Steel Doors and Frames manufactured by AMBICO Limited that can be fire rated or non-rated. This section relies on both the Canadian Steel Door Manufacturers Association (CSDMA.org) industry standard, as well as on the Hollow Metal Manufacturers Association (NAAMM.org) industry standard for steel doors. This section includes proprietary, descriptive and performance type specifications. Edit to avoid conflicting requirements.

Part 1 General

1.1 SECTION INCLUDES

This article includes a summary of the content of this section which will not be included in other sections. This article is NOT intended to be used as a trade or other form of jurisdictional content.

.1 [Non-rated] [fire rated] pressed steel, lead-lined steel frames.

.2 [Non-rated] [fire rated] hollow metal, lead-lined doors [and panels].

.3 Glazed lite lead-lined, steel frames.

.4 [Glass and glazing.]

1.2 RELATED SECTIONS

This article references other specification sections that inter-rely on this section. This listing should include those sections that describe subjects or products that affect this section directly.

.1 Section [_____-_____]: Masonry mortar fill of metal frames.

.2 Section 07 92 00 - Joint Sealing: Caulking between doors and adjacent construction.

.3 Section 08 11 13 – Hollow Metal Doors and Frames

.4 Section 08 71 10 - Door Hardware - General.

.5 [Section 08 81 00 - Glass Glazing: Lead lined glazing for installation in doors.]

.6 Section 09 91 00 - Painting: Field painting of [doors] [frames] [doors and frames].

1.3 REFERENCES

Edit this article after editing the rest of this section. Only list reference standards below that are included within the text of this section, when edited for a project specification. Delete references that do not apply to this project.

.1 ASTM A653/A653M-15el - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM B749-14 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.

.3 Canadian Steel Door Manufacturers Association (CSDMA), Selection and Usage Guide for Steel Doors and Frames, 2009.

.4 HMMA 802-07 - Manufacturing of Hollow Metal Doors and Frames.

.5 HMMA 840-07 - Installation and Storage of Hollow Metal Doors and Frames.

.6 HMMA 841-07 - Tolerances and Clearance for Commercial Hollow Metal Doors and Frames.

.7 ICC A117.1-2017 Standard for Accessible and Usable Buildings and Facilities

.8 NFPA 80-16 - Standard for Fire Doors and Other Opening Protectives.

.9 UL 10C-16 - Standard for Positive Pressure Fire Tests of Door Assemblies.

.10 USGBC – LEED v4.

1.4 REGULATORY REQUIREMENTS

Include the following article only if fire rated assemblies are specified. AMBICO can supply steel lead-lined doors and frames with 45, 90 or 180 minute fire rating label.

.1 Installed Door and Frame Assembly: Conform to [NFPA 80] [_____] for fire rated class [as scheduled.] [as indicated.].

Ambico lead-lined steel door and frame assemblies conform to national handicap codes when supplied with heavy weight butt or continuous hinges.

.2 Installed Door and Frame Assembly: Conform to [ANSI/ICC A117.1]

1.5 SUBMITTALS

.1 Product Data: Provide product data on standard door construction and [_____].

.2 Shop Drawings: Indicate door and frame elevations, internal reinforcement, anchor types, closure methods, [finishes] location of cut-outs for hardware, and cut outs for [glazing].

1.6 QUALITY ASSURANCE

.1 Perform Work to requirements of [CSDMA (Canadian Steel Door Manufacturers Association)] [HMMA (Hollow Metal Manufacturers Association)] standards.

.2 Manufacturer: Minimum 5 years documented experience manufacturing hollow metal door assemblies.

.3 Sustainable Design:

.1 Section 01 35 18: LEED documentation procedures.

.2 Provide required LEED documentation for Product.

.3 Submit Type 3 Environmental Product Declaration (EPD) for Products of this Section.

.4 Manufacturer's Certificate: Certify that Products meet or exceed [specified requirements].

1.7 DELIVERY, STORAGE AND PROTECTION

.1 Section [01 61 00]: Transport, handle, store, and protect products.

.2 Comply with HMMA 840.

.3 Weld minimum two temporary jamb spreaders per frame prior to shipment.

.4 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.

.5 Store in vertical position, spaced with blocking to permit air circulation between components.

.6 Store materials out of water and covered to protect from damage.

.7 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc phosphate primer.

1.8 WARRANTY

.1 Manufacturer's Limited Warranty: Five (5) years from date of supply, covering material and workmanship.

Part 2 Products

2.1 MANUFACTURERS

List the manufacturers acceptable for this project. Edit the subsequent descriptive specifications of Part 2, to identify project requirements and to eliminate any conflict with specified manufacturer's products.

.1 AMBICO Limited
1120 Cummings Avenue
Ottawa, Ontario, Canada K1J 7R8

Toll Free Phone	888-423-2224
Phone	613-746-4663
Toll Free Fax	800-465-8561
Fax	613-746-4721

.2 Other Acceptable Manufacturers:

.1 [_____].

.2 [_____].

.3 Substitutions: [Refer to Section 01 60 00.] [Not permitted.]

2.2 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653/A653M. Coating designation [ZF001] ([A01])

Lead thickness must be specified per shielding study recommendations.

.2 Lead Core: Rolled pure sheet lead, to ASTM B749, thickness [as indicated] [____].

.3 Reinforcement [Channel]: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, [ZF75] [A25].

2.3 ACCESSORIES

Accessories specified in this section shall be supplied by the door and frame manufacturer.

.1 Glazing Stops: Formed galvanized steel channel, minimum 16 mm (0.625 inch) high,

.2 Glass: [In accordance with Section [08 81 00]] [_____]. Glazing to be supplied by others.

2.4 FABRICATION:

.1 Lead-Lined Doors:

.1 Steel sheet faces [1.6] [___] mm thick, [flush] [_____] design,

.2 Doors shall be laminated with lead sheet [1.5mm (1\16")] [3 mm (1/8")] [6 mm (1/4")] [9mm (3\8")] [____] thick of X-ray quality.

.3 Core: Insulated steel-stiffened core.

.4 Top and Bottom Channels: Inverted, recessed, welded steel channels.

.5 Astragals: Lead-lined steel flat astragals for double doors.

.6 Fabricate doors with hardware reinforcement plates welded in place.

.2 Lead-Lined Frames:

.1 Frames: [1.6] [___] mm thick base metal thickness, welded type construction, mitred corners.

.2 Frames shall be laminated with lead sheet [1.5mm (1\16")] [3 mm (1/8")] [6 mm (1/4")] [9mm (3\8")] [____] thick of X-ray quality.

.3 Factory assemble and weld frames.

.4 Mullions for Double Doors: Lead-lined [fixed] [removable] type.

.5 Fabricate frames with hardware reinforcement plates welded in place.

.6 Reinforce frames wider than 1200 mm (48 inches) with roll formed steel channels fitted tightly into frame head, flush with top.

2.5 FINISHES

.1 Factory Finish: Factory applied zinc phosphate primer [to be applied to all exposed surfaces] [touch-up only, where product has been welded and ground smooth]

Part 3 Execution

3.1 INSTALLATION

.1 Install doors and frames to [CSDMA] [HMMA 840] standards [and in accordance with NFPA 80, and local authority having jurisdiction].

.2 Coordinate with [masonry] [gypsum board] [concrete] [_____] wall construction for anchor placement.

.3 Utilize welders certified by [Canadian Welding Bureau (CWB)] [American Welding Society (AWS)] for field welding.

.4 Set frames plumb, square, level and at correct elevation.

.5 Allow for deflection to ensure that structural loads are not transmitted to frame.

.6 Adjust operable parts for correct clearances and function.

.7 Install [glazing and] door silencers.

.8 Finish paint in accordance with Section 09 91 00.

.9 Touch up painted finishes where damaged.

3.2 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than ± 1/16in (1.5mm) in compliance with HMMA 841.

3.3 FIELD QUALITY CONTROL

.1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of door assemblies.

.2 Provide manufacturer's representative to inspect door installation, and test minimum ten (10) cycles of operation. Correct any deficient doors.

END OF SECTION