

*This section includes Lead-Lined Wood Doors and Steel Frames manufactured by AMBICO Limited.. 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 frames, as well as Window & Door Manufacturer's Association (WDMA.com) standard for wood 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      Pressed steel, lead-lined steel frames.
- .2      Wood, lead-lined doors [and panels].
- .2      Glazed lite lead-lined, steel frames.
- .3      [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 14 16 – Wood Doors and Frames
- .4      Section 08 34 49-Lead lined Steel Doors and Frames
- .5      Section 08 71 10 - Door Hardware - General.
- .6      [Section 08 81 00 - Glass Glazing: Lead lined glazing for installation in doors.]
- .7      Section 09 91 00 - Painting: Field painting and/or staining 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-15e1 - 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 ANSI/WDMA I.S. 1A-2013 - Industry Standard for Architectural Wood Flush Doors.
- .8 ICC A117.1-2017 Standard for Accessible and Usable Buildings and Facilities
- .9 USGBC – LEED v4.

#### **1.4 REGULATORY REQUIREMENTS**

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

- .1 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 wood door and steel 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 WDMA I.S. 1A for doors.
- .3 Comply with HMMA 840 for frames.

- .4 Weld minimum two temporary jamb spreaders per frame prior to shipment.
- .5 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.
- .6 Store in vertical position, spaced with blocking to permit air circulation between components.
- .7 Store materials out of water and covered to protect from damage.
- .8 Clean and touch up scratches or disfigurement to metal and wood surfaces.

## 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].
- .4 Wood door panel: Radiation resistant core [with FSC Certified,] [Urea-formaldehyde free] [wood veneer] [plastic laminate] facing.
  1. Door Facing:

- a) Wood Face Veneer: [\_\_\_\_\_] species, [\_\_\_\_\_] cut; minimum thickness before sanding 0.6 mm (1/4 inch).

[OR]

- b) Plastic Laminate: to be selected from manufactures standard colors and patterns

2. Door Edging:

- a) Where door face is wood face veneer, door edges shall be supplied with matching stiles and rails

[OR]

- a) Where door face is plastic laminate, door edges shall be supplied with hardwood stiles and rails.

### 2.3 ACCESSORIES

*AMBICO lead lined wood doors and steel frames are prepared for heavy weight builders hardware to be supplied by door manufacturer. Balance of builders hardware to be supplied by Section # 08 71 10.*

- .1 Glass: [In accordance with Section [08 81 00]] [\_\_\_\_\_]. Glazing to be supplied by others.
- .2 Glazing Stops: Formed galvanized steel channel, [butted] [mitred] corners; prepared for countersink style [tamperproof] screws.
- .3 Hinges: Heavy weight butt type [by this section] or offset pivots [by hardware section].
- .4 Primer: Rust inhibitive zinc phosphate.
- .5 Astragal: To be supplied loose as an integral part of the door and frame assembly and ready for field assembly by others.
- .6 [Removable] Mullion: To be provided at [paired] [multiple leaf] openings, where occasional access is required. Mullion to comply with the radiation resistant rating of the entire assembly.

### 2.4 FABRICATION:

- .1 Lead-Lined Wood Doors:
  - .1 Wood veneer faces, door thickness, design and core suitable to achieve specified radiation resistant performance.
  - .2 Doors shall be laminated with lead sheet [1.5mm (1\16")] [3 mm (1/8")] [6 m (1/4")] [9mm (3\8")] [\_\_\_\_\_] thick of X-ray quality.
  - .3 Reinforce doors where surface-mounted hardware is required.
  - .4 Drill and tap for mortised, templated hardware.
  - .5 Astragals: Metal [Z] [T] shaped astragals for double doors.
  - .6 [Factory install glazing.]

- .2 Lead-Lined Steel 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 Metal Frame: Factory applied zinc phosphate primer [to be applied to all exposed surfaces] [touch-up only, where product had been welded and ground smooth] [as scheduled].
- .2 Factory Wood Door Finish: Catalyzed lacquer, premium grade finish to WDMA I.S. 1A, [clearcoat only] [stain and clear coat] [paint] [as selected].
- .3 Top and Bottom Rails: Factory sealed with wood sealer.

## Part 3 Execution

### 3.1 INSTALLATION

- .1 Install doors and frames to [CSDMA] [HMMA 840] [ANSI/WDMA IS 1A] 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 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  $\pm 1/16$ in (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**