*This section includes AMBICO Acoustic Wood Doors and Steel Frames as well as perimeter and bottom acoustic seals, and glazing if required all of which can be fire rated or non-rated. The aforementioned items are an integral part of a laboratory-tested assembly that must be supplied by a single manufacturer. This section relies on both the Canadian Steel Door Manufacturers Association (CSDMA.org) industry standard, the Hollow Metal Manufacturers Association (NAAMM.org) industry standard for steel frames, and the 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 [Non-rated] [fire rated] acoustic pressed steel frames.

.2 [Non-rated] [fire rated] acoustic wood doors [and panels].

.3 [Glazed lite acoustic steel frames.]

.4 [Glass and glazing.]

.5 Perimeter and bottom acoustic seals, threshold, [and astragal].

.6 [TR-6 Finish for Clear Coat] [TR-6 Finish for Stain][TR-6 Finish for Paint]

### 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 09 81 16 - Acoustic Blanket Insulation: Insulation inside door frames.

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

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

.5 Section 09 91 15 - Painting: Field painting of [doors] [frames] [doors and frames].

### 1.3 REFERENCES

*When edited for a project specification, only list reference standards below that are included within the text of this section. Delete references that do not apply to this project.*

.1 ASTM A480/A480M-06b - General Requirements for Flat-Rolled Stainless Heat-Resisting Steel Plate, Sheet, and Strip.

.2 ASTM A653/A653M-06 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM E90-04 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

.4 ASTM E413-04 - Classification for Rating Sound Insulation.

.5 CSDMA Selection and Usage Guide for Steel Doors and Frames, 1990.

.6 HMMA 802-92 - Manufacturing of Hollow Metal Doors and Frames.

.7 HMMA 840-99 - Installation and Storage of Hollow Metal Doors and Frames.

.8 NFPA 80-07 - Standard for Fire Doors and Other Opening Protectives.

.9 UL 10C-98 - Standard for Positive Pressure Fire Tests of Door Assemblies.

.10 ANSI/WDMA I.S. 1A-2004 - Industry Standard for Architectural Wood Flush Doors.

.11 ANSI/ICC A117.1-2003 - Standard for Accessible and Usable Buildings and Facilities

## 1.4 PERFORMANCE REQUIREMENTS

*Include this article if all doors should meet the same STC requirement; otherwise, specify individual STC for door types in Part 2 or in a schedule. AMBICO wood doors can provide minimum Sound Transmission Class (STC) 33 and maximum STC 51.*

.1 Acoustic Performance: Minimum Sound Transmission Class (STC) [31] [51] [__] tested to ASTM E90.

## 1.5 REGULATORY REQUIREMENTS

*Include the following article only if fire rated doors are specified. AMBICO can supply acoustic wood door and frame assemblies with 45 or 90 minute fire rating labels.*

.1 Installed Door and Frame Assembly: Conform to [NFPA 80] [UL 10C] [_____] for fire rated class [as scheduled.] [as indicated.].

*AMBICO acoustic wood door and frame assemblies conform to national handicap codes.*

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

## 1.6 SUBMITTALS.

.1 Section [01 33 00]: Submission procedures.

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

.3 Samples: Submit manufacturer's door finish samples, showing range of colour variation, manufacturer’s frame corner sample, as well as perimeter acoustic gasket.

.4 Test Data:

.1 Submit test data indicating compliance with the Sound Transmission Class (STC) requirements. Include laboratory name, test report number, and date of test.

.2 Submit certification from test laboratory qualified under the National Voluntary Accreditation Program (NVLAP) of the U.S. Bureau of Standards.

.5 Installation Instructions: Submit manufacturer's installation instructions.

**1.7 QUALITY ASSURANCE**

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

.2 Manufacturer: Minimum 5 years documented experience manufacturing acoustic wood door and frame assemblies.

.3 Pre-installation Meeting: Convene a pre-installation meeting [2] [ ____ ] weeks before start of installation of door and frame assemblies. Require attendance of parties directly affecting work of this section, including contractor, architect, installer, and manufacturer's representative. Review installation and coordination with other work.

**1.8 DELIVERY, STORAGE AND PROTECTION**

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

.2 Comply with WDMA I.S. 1A for wood doors.

.3 Comply with HMMA 840 for steel frames.

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

.5 Remove frames from wrappings or coverings upon receipt on site and inspect for damage. Leave doors covered for protection until hung.

.6 Store doors in horizontal position, frames in vertical position, spaced with blocking to permit air circulation between components.

.7 Store materials out of water and covered to protect from damage. Use covering that allows air circulation and does not permit light to penetrate.

.8 Store doors between 50 to 90 degrees F (10 to 32 degrees C) and 25 to 55 percent relative humidity.

.9 Clean and touch up scratches or disfigurement to metal surfaces on frame or wood surfaces on door.

**1.9 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:

.1 Galvanized steel to ASTM A653/A653M, ZF180, ZF75

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

.3 Wood Door Panel: Acoustic core with [wood veneer] [plastic laminate] facing.

.1 Door Facing:

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

[OR]

.2 Plastic Laminate: to be selected from manufacturers standard colors and patterns

.2 Door Edging:

.1 Where door face is wood face veneer, door edges shall be supplied with matching stiles and rails

[OR]

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

## 2.3 ACCESSORIES

*AMBICO acoustic wood door and frame assemblies are prepared for hinges supplied by Section 08 71 10. All other accessories specified in this section are to be supplied by door and frame manufacturer in order to assure the acoustic integrity of the assembly.*

.1 Hinges: Heavy weight butt type by section #08 71 10

.2 Glazing stops for frames: Formed [galvanized] [stainless] steel channel, [butted] [mitred] corners; prepared for countersink [tamperproof] screws for side lite and borrowed lite frames.

.3 Glazing stops for doors: Formed [galvanized] [stainless] blade stops, mitred corners; prepared for countersink [tamperproof] screws.

.4 Glass: Type as tested to achieve STC and fire ratings. Glazing to be factory supplied and pre-installed.

.5 Primer: Rust inhibitive zinc chromate on frames.

.6 Threshold: To provide a seal for door in closed position.

.7 Astragal: To be supplied loose ready for field assembly by others

.8 Perimeter and bottom acoustic seals: to provide an acoustic seal for door is closed position.

.9 [Removable] Mullion: To be provided at [paired ][multiple leaf] openings, where occasional access is required. Mullions with perimeter seals to be supplied by door and frame manufacturer.

## 2.4 FABRICATION

.1 Manufacture doors and frames to STC rating of [31] [51] [__], measured in accordance with ASTM E90.

*Specify door thickness and other values with caution as they may vary in order to meet the STC ratings available. Higher STC ratings may require thicker doors. AMBICO doors are typically lighter in weight than other manufacturers' doors for the same STC rating; ensure that door hardware considers this impact.*

.2 Wood Doors:

.1 Fabricate doors to ANSI/WDMA IS1A. Provide suitable thickness, design, and core to achieve specified STC and fire performance ratings.

.2 Reinforce doors where surface-mounted hardware is required.

.3 Drill and tap for mortised, templated hardware.

.4 Astragals: Metal acoustic astragals with integral acoustic seals for double doors.

*Note that where concealed vertical rod exit devices are required, the door thickness will be 2 1/4" (55mm) to accommodate the acoustic structure necessary for reinforcement of the door hardware.*

.5 Exit Device Vertical Rods: [Surface] [Concealed] mounted; coordinate with exit hardware devices specified in Section 08 71 10.

.3 Steel Frames:

.1 Sheet steel, metal thickness and appropriate to maintain door STC and fire ratings, mitred corners, fully welded seams.

.2 Factory assemble and weld frames.

.3 Mullions for Double Doors: [Fixed] [Removable] type.

.4 Factory install glazing.

.5 Affix permanent metal nameplates to door and frame, indicating manufacturer's name, and STC rating. Note that where concealed vertical rod exit devices are required, the door thickness will be 2 1/8" (53mm) to accommodate the acoustic structure necessary for reinforcement of the door hardware.

## 2.5 FINISHES

*This article may require a more elaborate identification of expected finishes. Edit the following paragraphs for special finishes other than those for galvanized steel frames. Wood doors may be factory finished, or may be supplied unfinished by the factory and finished in the field by others.*

.1 Metal Frame Finish: [factory applied zinc chromate primer]

.2 Factory Door Finish: Catalyzed polyurethane, premium grade, TR-6 finish to WDMA I.S. 1A. [Clear Coat only] [Stain and Clear Coat] [Paint and Clear Coat]

.3 Top and Bottom Rails: Factory sealed with wood sealer.

# Part 3 Execution

## 3.1 INSTALLATION

.1 Install components to manufacturer's written instructions.

.2 Install wood doors and frames to ANSI/WDMA IS 1A standards, and in accordance with [NFPA 80] [UL10C], and local authority having jurisdiction.

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

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

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

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

.7 Adjust operable parts for correct clearances and function.

.8 Install and adjust perimeter and bottom acoustic seals.

.9 [Finish paint in accordance with Section 09 91 15.]

## 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 then ± 1/16in (1.5mm).

## 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 five (5) cycles of operation. Correct any deficient door and frame assemblies.

## 3.4 SCHEDULE

*Include this article to identify variations of products or installation requirements specified. If door and/or frame schedules are listed on drawings or on separate schedule sheets, do not repeat statements in this article.*

.1 Acoustic Wood Door and Frame Assembly Schedule:

| Tag | Room | Nominal Size | Thickness | Frame Material | Glazing | Fire Rating | STC Rating | Door Face Veneer | Door Finish | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| D-1 | 100 | 750mm x 2100mm | 44mm | GS | B | NFR | 33 | Oak | CC | |
| D-2 | 101 | 750mm x 2100mm | 55mm | SS | A | FR | 51 | Maple | S | |
| D-3 | 102 | 3’0” x 7’0” | 1 ¾” | GS | C | NFR | 51 | Birch | P | |
| | | | | | | | | | | |

- Frame material types: GS = Galvanized Steel, SS = Stainless Steel
- Glazing types: A = Halflite, B = Fulllite, C = Narrowlite D=Flush
- Fire Label types: FR= Fire rated to 90 minutes, NFR= Non-fire rated
- Door Finishes: CC = Clear Coat, S = Stain, P = Paint

**END OF SECTION**