

This section includes AMBICO acoustic wood doors and steel frames, fire rated and non-rated, and relies on both Canadian Steel Door Manufacturers Association (CSDMA) and the Hollow Metal Manufacturers Association (HMMA) industry standard requirements for steel frames, as well as the Window & Door Manufacturer's Association (WDMA) standards for wood doors. This section includes proprietary and performance type specification requirements. 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-fire rated] [Fire rated] acoustic pressed steel frames.
- .2 [Non-fire rated] [Fire rated] acoustic wood doors [and panels].
- .3 Acoustic steel frames [and side/transom lites] [and side/transom panels].
- .4 [Acoustic glass and glazing.]
- .5 Perimeter and bottom acoustic seals, threshold [and astragal].
- .6 Factory finishing.

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

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 ANSI/WDMA I.S. 1A-13 - Interior Architectural Wood Flush Doors.
- .2 ASTM A653/A653M-15e1 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3 ASTM E90-09(2016) - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

- .4 ASTM E413-16 - Classification for Rating Sound Insulation.CSDMA, Selection and Usage Guide for Steel Doors and Frames, 2009.
- .5 FSC – Forest Stewardship Council Standard for Chain of Custody Certification.
- .6 HMMA 802-07 - Manufacturing of Hollow Metal Doors and Frames.
- .7 HMMA 840-16 - Installation and Storage of Hollow Metal Doors and Frames.
- .8 NFPA 80-16 - Standard for Fire Doors and Other Opening Protectives.
- .9 ANSI/ICC A117.1-2003 - Accessible and Usable Buildings and Facilities (Standard and Commentary).
- .10 UL 10C-16 - Standard for Positive Pressure Fire Tests of Door Assemblies.
- .11 USGBC LEEDv4.

1.4 REGULATORY REQUIREMENTS

Include this article only if fire rated doors are specified. AMBICO can supply acoustic wood door and steel frame assemblies with 45 or 90 minute fire rating labels. Maximum size of AMBICO fire rated wood openings vary based on acoustic rating, single or paired configurations. Consult AMBICO for specifics.

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

Include the following paragraph requiring national handicap codes when doors are supplied with heavy weight butt hinges. AMBICO wood door and frames assemblies with sound ratings up to STC 50 and heavy weight butt hinges can qualify for this standard.

- .2 Conform to ICC/ANSI A117.1.

1.5 SUBMITTALS

Include this article to identify particular submission items.

- .1 Section [01 33 00]: Submission procedures.
- .2 Product Data: Provide product data on door construction and [_____].
- .3 Shop Drawings: Indicate door and frame elevations, anchor types and spacing, closure methods, [finishes] location of cut-outs for hardware [, and cut outs for glazing].
- .4 Samples: Submit manufacturer's door finish samples, frame corners, and perimeter acoustic gaskets.
- .5 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.
- .6 Installation Instructions: Submit manufacturer's installation instructions.

Include the following ONLY if specifying for a LEED project. Specify only the technical requirements necessary to achieve the credits desired for this project. The Type 3 EPD is normally required for LEED v4 certification. AMBICO STC products offer significant advantages to firms interested in supporting LEED certification. In particular, AMBICO products comply with both LEED for Schools as well as LEED for Healthcare.

- .7 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 Submit Chain-of-Custody Certificates certifying that doors [and frames] comply with FSC certification requirements.
 - .5 Manufacturer's Certificate: Certify that Products meet or exceed [specified requirements].

1.6 QUALITY ASSURANCE

Include this article to identify a quality reference source affecting the work of this section; only one reference should be selected to avoid potential conflicts.

- .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 Provide Products of this section from a single manufacturer, unless components are referenced specifically in other sections.
- .3 Manufacturer: Minimum five (5) years documented experience manufacturing sound control door assemblies.
- .4 Pre-installation Meeting: Convene a pre-installation meeting [2] [__] weeks before installation of acoustic door and frame assemblies. Require attendance of relevant subcontractors, consultants, and manufacturer's representative. Review installation and coordination with other work.

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 wood doors.
- .3 Comply with HMMA 840 for steel frames, and manufacturer written instructions.
- .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.

- .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 enables air circulation and does not permit light to penetrate.
- .8 Store doors between 10 to 32 degrees C (50 to 90 degrees F) and 25 to 55 percent relative humidity.
- .9 Clean and touch up scratches or disfigurement to wood and metal 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 016000.] [Not permitted.]

2.2 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 doors can provide a range of wood door and steel frame assemblies with acoustic ratings from STC 33 to STC 54.

- .1 Acoustic Performance: Minimum Sound Transmission Class (STC) [31] [54] [___] tested to ASTM E90.

2.3 MATERIALS

Include this article to identify the base materials comprising this section.

- .1 Sheet Steel:

- .1 Galvanized steel to ASTM A653/A653M, ZF75 (A25), minimum 1.5 mm (16 ga) thick.
- .2 Recycled Content: Minimum [____]%.
 - .2 Reinforcement: Same material as sheet steel.
- .3 Wood door panel: [FSC Certified,] [Urea-formaldehyde free] acoustic core with [wood veneer] [plastic laminate] facing.
 - .1 Door facing:
 - .1 Wood face veneer: [____] species, [____] cut; minimum thickness before sanding 0.6 mm (1/42 inch).

OR

 - .2 Plastic laminate: selected from manufacturer's standard range.
 - .2 Door edging:
 - .1 For wood faced doors, provide hardwood stiles with stiles to match wood face and hardwood rails.
 - .2 For plastic laminate doors, provide hardwood stiles and rails.
 - .3 Bottom rail may be omitted if required to meet acoustic performance requirements.
- .4 Glass: Type as tested to achieve STC and fire ratings [factory installed].

2.4 FABRICATION

If more than one type of acoustic door rating is required, include the STC in a door schedule and delete the paragraph below. Consider maximum sizes when selecting STC requirements for doors.

- .1 Manufacture doors and frames to STC rating of [33] [54] [____], measured in accordance with ASTM E90.

Specify door thickness and other values with caution; they may vary in order to meet the STC and fire ratings available. Higher STC ratings may require thicker doors and fire ratings may limit door sizes and the STC rating. 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 acoustic core to achieve specified STC and fire performance ratings.
 - .2 Reinforce doors where surface-mounted hardware is required.
 - .3 Drill and tap steel acoustic core for mortised, templated hardware.
 - .4 Astragals: Metal acoustic, with integral acoustic seals for double doors. [Standard overlapping active/inactive.] [Meeting stile both active for vertical rod devices.]

Concealed vertical rod/cable devices must be specified as top latch only / less bottom rod. Where concealed vertical rod exit devices are required, the door thickness will be 2-1/4" to accommodate the acoustic structure necessary for reinforcement of the door hardware.

- .5 Exit Device Vertical Rods: Surface mounted [, with concealed top rod]; coordinate with exit hardware devices specified in Section 08 71 10.
- .6 Factory installed glazing.
- .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 Install and adjust perimeter and bottom acoustic seals around frames and mullions.
- .4 Mullions for Double Doors: [Fixed] [Removable] type

Removable mullions are not recommended over STC45. Acoustic glazing in frames is recommended to be supplied as an integral part of the door and frame assembly.

- .5 Supply glazing loose, ready for field assembly.
- .4 Affix permanent nameplates to door and frame, indicating manufacturer's name and STC rating.

2.5 FINISHES

This article may be a simple statement of a finish or may require a more elaborate identification of expected finishes. Edit the following paragraphs for special finishes.

- .1 Metal Frame: Factory applied zinc phosphate primer.
- .2 Factory Door Finish: Catalyzed lacquer, premium grade finish to WDMA I.S. 1A, , [clear coat only] [stain and clear coat] [paint] [as selected].
- .3 Top and Bottom Rails: Factory sealed with wood sealer.

2.6 ACCESSORIES

AMBICO acoustic assemblies rely on a range of hinges; coordinate hinge types identified here with Section 08 71 10. Specify heavy weight butt hinges for assemblies up to and including STC 52, and cam lift hinges for STC 53 – 59.

- .1 Hinges: [Cam lift type, by door manufacturer] [Heavy duty butt type, refer to Section 08 71 10]. Glazing stops for frames: Formed galvanized steel channel, [butted] [mitred] corners; prepared for countersink style [tamperproof] screws for side lite and borrowed lite frames.
- .2 Glazing stops for doors: Formed galvanized blade stops, mitred corners; prepared for countersink [tamperproof] screws.
- .3 Primer: Rust inhibitive zinc phosphate on frames. [VOC compliant with local indoor air quality regulations].
- .4 Threshold: To provide a seal for door in closed position.
- .5 Astragal: Overlapping or meeting stile, supplied loose for field installation. Overlapping astragal to be minimum 2 mm (14 ga) thick.
- .6 Acoustic seals: Provide perimeter and bottom seals, manufacturer standard.

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] [UL 10C], and local authority having jurisdiction.
- .3 Utilize welders certified by [Canadian Welding Bureau (CWB)] [American Welding Society (AWS)] for field welding.
- .4 Install factory supplied glazing to frames.
- .5 Coordinate with [masonry] [gypsum board] [concrete] [_____] wall construction for anchor placement.
- .6 Set frames plumb, square, level at correct elevation, in accordance with Section 05 50 00.
- .7 Allow for deflection to ensure that structural loads are not transmitted to frame.
- .8 Adjust operable parts for correct clearances and function.
- .9 Install and adjust perimeter and bottom acoustic seals.

Include finish paint requirements only if factory painting is not specified.

- .10 Finish paint in accordance with Section 09 91 15.
- .11 Touch up finishes where damaged.

3.2 ERECTION TOLERANCES

- .1 Section 01 73 00: Tolerances.
- .2 Maximum deviation from square, alignment, twist and plumb: +/- 0.75 mm (1/32").

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 doors.

END OF SECTION