SECTION 08 34 73

ACOUSTIC DOORS AND FRAMES

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\*\* NOTE TO SPECIFIER \*\* AMBICO LIMITED; specialized doors and door frames.
This section is based on the products of AMBICO LIMITED, which is located at:
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Ottawa, ON, Canada K1J 7R8
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Email: [request info (specialized@Ambico.com)](https://arcat.com/rfi?action=email&company=AMBICO%252BLIMITED&message=RE%253A%2520Spec%2520Question%2520(08347abl)%253A%2520&coid=40356&spec=08347abl&rep=&fax=800-465-8561)
Web: <https://www.ambico.com>
 [ [Click Here](https://arcat.com/company/ambico-limited-40356) ] for additional information.
AMBICO manufactures specialized doors and door frames. Located in Canada's capital city of Ottawa, Ontario, AMBICO LIMITED operates from an office and manufacturing facility covering one city block. The formula for AMBICO's success includes quality driven, laboratory tested, specially manufactured products.
Our decorative line of products includes recessed panel, brass clad, bronze clad, as well as stainless steel doors and door frames. AMBICO's exceptional line of engineered door and frame products include acoustic wood, acoustic steel, bullet resistant steel, blast resistant, lead lined, oversized and stainless steel.
AMBICO services our products with an expert team of engineers and sales personnel. Our selected network of manufacturer's representatives and independent distributors enhances our ability to provide dedicated client service across North America and throughout the world.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Acoustic pressed steel doors.
		2. Acoustic steel overhead doors.
		3. Acoustic wood doors and hollow metal frames.
		4. Sliding acoustic steel doors.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 05 50 00 - Metal Fabrications.
		2. Section 07 20 00 - Thermal Protection.
		3. Section 07 91 23 - Backer Rods.
		4. Section 08 71 00 - Door Hardware.
		5. Section 09 91 23 - Interior Painting.
		6. Section 26 05 00 - Common Work Results for Electrical.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
		2. ASTM A480/A480M - General Requirements for Flat-Rolled Stainless Heat-Resisting Steel Plate, Sheet, and Strip.
		3. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
		4. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
		5. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
		6. ASTM E413 - Classification for Rating Sound Insulation.
		7. AWS D1.1/D1.1M - Structural Welding Code - Steel.
		8. CSDMA Selection and Usage Guide for Steel Doors and Frames.
		9. HMMA 802 - Manufacturing of Hollow Metal Doors and Frames.
		10. HMMA 840 - Installation and Storage of Hollow Metal Doors and Frames.
		11. HMMA 865 - Guide Specifications For Swinging Sound Control Hollow Metal Doors and Frames.
		12. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
		13. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.
		14. ANSI/WDMA I.S. 1A - Industry Standard for Architectural Wood Flush Doors.
	1. PERFORMANCE REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* 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 steel doors and frame assemblies can provide minimum Sound Transmission Class (STC) 33 and maximum STC 59. AMBICO steel overhead doors can provide minimum Sound Transmission Class (STC) 33 and maximum STC 55. AMBICO wood doors can provide minimum Sound Transmission Class (STC) 33 and maximum STC 51.

* + 1. Acoustic Performance: Minimum Sound Transmission Class tested to ASTM E90. Label indicating sound transmission class shall be applied to the door and door frame.

\*\* NOTE TO SPECIFIER \*\* Rating between 33 and 59. Indicate STC required.

* + - 1. STC: \_\_\_\_.
	1. REGULATORY REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Include the following article only if fire rated assemblies are specified. AMBICO can supply steel doors and frames with 45 or 90 minute fire rating labels. Delete if not required.

* + 1. Installed Door and Frame Assembly: Conform to NFPA 80 and UL 10C as scheduled or required for fire rated class as scheduled or as indicated. Label indicating fire resistance shall be applied to the door and door frame.

\*\* NOTE TO SPECIFIER \*\* AMBICO Acoustic Steel Door and Frame Assemblies conform to national handicap codes when supplied with heavy weight butt hinges. Door and frame assemblies up to STC 52 are designed in conformance with national handicap codes. These assemblies are to be prepared for heavy weight hinges. Delete if not required.

* 1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Indicate door and frame elevations, anchor types and closure methods, finishes, location of cut-outs for hardware, and cut outs for glazing.
		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.
	2. QUALITY ASSURANCE
		1. Manufacturer: Minimum 5 years documented experience manufacturing acoustic steel door and frame assemblies.
		2. Installer Qualifications: Minimum 2 years experience installing similar products.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Perform work to requirements of CSDMA (Canadian Steel Door Manufacturers Association) standards.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Perform work to requirements of HMMA (Hollow Metal Manufacturers Association) standards.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship is approved by Architect.
			3. Rework mock-up area as required to produce acceptable work.
	1. PRE-INSTALLATION MEETINGS
		1. Convene minimum two weeks prior to starting work of this section. 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.
	2. DELIVERY, STORAGE, AND HANDLING
		1. Comply with manufacturer's recommendations including the following:
			1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification.
			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.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Store wood doors between 50 to 90 degrees F (10 to 32 degrees C) and 25 to 55 percent relative humidity.
			2. Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.
			3. Handle materials to avoid damage.
	1. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	2. SEQUENCING
		1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	3. WARRANTY
		1. Manufacturer's Limited Warranty: Five years from date of supply, covering material and workmanship.

\*\* NOTE TO SPECIFIER \*\* Overhead door warranty. Delete if not required.

* + 1. Manufacturer's Limited Warranty: One year from date of supply, covering material and workmanship.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: AMBICO LIMITED, which is located at:
		1120 Cummings Ave.
		Ottawa, ON, Canada K1J 7R8
		Toll Free Tel: 888-423-2224
		Tel: 613-746-4663
		Fax: 800-465-8561
		Email: [request info (specialized@Ambico.com)](https://arcat.com/rfi?action=email&company=AMBICO%252BLIMITED&message=RE%253A%2520Spec%2520Question%2520(08347abl)%253A%2520&coid=40356&spec=08347abl&rep=&fax=800-465-8561);Web: <https://www.ambico.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ACOUSTIC PRESSED STEEL DOORS
		1. Manufacture doors and frames to STC rating measured in accordance with ASTM E90.
		2. Sheet Steel:

\*\* NOTE TO SPECIFIER \*\* Delete sheet material not required.

* + - 1. Galvanized steel to ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			2. Stainless steel to ASTM A480, Type 304.
			3. Stainless steel to ASTM A480, Type 316.
		1. Reinforcement/ Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).

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

* + 1. Steel Door Fabrication:
			1. Sheet steel faces, thickness, design, and core suitable to achieve specified STC performance.

\*\* NOTE TO SPECIFIER \*\* Note that STC or fire ratings may dictate the details of oversize acoustic door or frame construction. Where door panels are larger than 4'0" in width, or 10'0" in height, specify the following construction details in consultation with the door manufacturer.

* + - 1. Acoustic core construction, longitudinal edges, mechanically inter-locked with visible edge seams.
			2. Reinforce doors where surface-mounted hardware is required.
			3. Drill and tap for mortised, templated hardware.
			4. Top and Bottom Channels: Inverted, recessed, welded steel channels.
			5. Astragals: Metal acoustic astragals with integral acoustic seals for double doors.

\*\* NOTE TO SPECIFIER \*\* Note that where concealed vertical rod exit devices are required, the door thickness will be 2-1/8 inches (53mm) to accommodate the acoustic structure necessary for reinforcement of the door hardware. Delete Exit Device not required.

* + - 1. Exit Device Vertical Rods: Surface mounted; co-ordinate with exit hardware devices specified in Section 08 71 00 - Door Hardware.
			2. Exit Device Vertical Rods: Concealed mounted; co-ordinate with exit hardware devices specified in Section 08 71 00 - Door Hardware.
		1. Steel Frame Fabrication:
			1. Sheet steel metal thickness appropriate to maintain door STC and fire ratings, mitred corners, fully welded seams.
			2. Factory assembled and welded frames.

\*\* NOTE TO SPECIFIER \*\* Delete mullion type not required.

* + - 1. Mullions for Double Doors: Fixed type.
			2. Mullions for Double Doors: Removable type.
			3. Mullion shall be provided at paired and multiple leaf openings as scheduled, where occasional access is required. Mullions with perimeter seals to be supplied by door and frame manufacturer.

\*\* NOTE TO SPECIFIER \*\* Acoustic Door and Frame Assemblies are to be provided with a factory glazed material in conformance with manufacturers tested assembly.

* + 1. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO acoustic steel door and frame assemblies are prepared for hinges supplied by Section 08 71 00 - Door Hardware. 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. AMBICO strongly recommends the use of heavy weight butt type hinges for assemblies up to and including STC 52. Cam lift hinges shall be used for STC 53 to STC 59. Delete hinges not required.

* + - 1. Hinges: Heavy weight butt type by section 08 71 00 - Door Hardware.
			2. Hinges: Cam lift type by section 08 71 00 - Door Hardware.
			3. Glazing Stops: Formed steel channel, corners; prepared for countersink screws.

\*\* NOTE TO SPECIFIER \*\* Delete steel material not required.

* + - * 1. Steel Material: Galvanized.
				2. Steel Material: Stainless.

\*\* NOTE TO SPECIFIER \*\* Delete corner construction not required.

* + - * 1. Butted corners.
				2. Mitred corners.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Tamperproof screws.
			1. Glass: Type as tested to achieve STC and fire ratings. Glass to be factory supplied and pre-installed.
			2. Primer: Rust inhibitive zinc chromate.
			3. Threshold: Smooth and flush, to provide a seal for door in closed position.
			4. Astragal: Supplied loose ready for field assembly.
			5. Perimeter and bottom acoustic seals: To provide a seal for door in closed position.
		1. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, and STC rating where it shall be clearly visible.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required.

* + 1. Factory Door Finish: Factory applied zinc chromate primer to be applied to all exposed surfaces.
		2. Factory Door Finish: Factory applied zinc chromate primer touch-up only, where product has been welded and ground smooth.
		3. Factory Door Finish: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete surface finish not required.

* + - 1. Surface Finish: 2B finish.
			2. Surface Finish: 4 finish.
			3. Surface Finish: 8 finish.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ACOUSTIC STEEL OVERHEAD DOORS
		1. Sheet Steel: Galvanized steel to ASTM A653/A653M.

\*\* NOTE TO SPECIFIER \*\* Delete galvanizing not required.

* + - 1. Coating designation Z275 (G90) for exterior door assemblies.
			2. Coating designation ZF001 (A01) for interior door assemblies.
		1. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		2. Structural Plate: Hot rolled steel to ASTM A1011.
		3. Fabrication:
			1. Manufacture doors and in accordance with ASTM E90.
			2. Steel Doors, Overhead Door Type.
				1. Sheet steel faces, thickness, design, and core suitable to achieve specified acoustic performance.
				2. Acoustic construction, mechanically inter-locked shall be welded, filled and sanded with visible edge seams.
				3. Top and bottom channels shall be full width and shall form a ship-lap joint between sections.
				4. Weld structural steel channels flush to top and bottom of door.
				5. Weld hardware reinforcement plates in place.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Install glazing.
			2. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, model number, and performance rating.
			3. Threshold and perimeter seals to be factory supplied.

\*\* NOTE TO SPECIFIER \*\* Delete glazing option not required.

* + - 1. Glazing shall be factory supplied and pre-installed.
			2. Glazing shall be factory supplied and shipped loose ready for site installation by others.
			3. Primer: Rust inhibitive zinc chromate.

\*\* NOTE TO SPECIFIER \*\* Delete factory finish not required.

* + - 1. Factory Finish: Factory applied zinc chromate primer to be applied to all exposed surfaces.
			2. Factory Finish: Factory applied zinc chromate primer touch-up only, where product has been welded and ground smooth.
			3. Finish Painting: Field finish painting as scheduled.

\*\* NOTE TO SPECIFIER \*\* Electrical operators shall be supplied by the acoustic door manufacturer and shall be an integral part of the Acoustic Steel Overhead Door Assembly

* + 1. The electric operator shall have the following characteristics:
			1. The unit shall be UL approved.
			2. The unit shall have a heavy duty worm-gear reducer with a standard NEMA "C" flange.
			3. The unit shall have a minimum 220 volt, 3 phase motor and shall be TEFC.
			4. Electromechanical brake.
			5. Rotary screw type limit switches.
			6. Manual operation chain hoist.
			7. Electrical interlock for manual operation.
			8. Door speed 8 inches to10 inches (203 mm to 254 mm) per second.
		2. Door Controls and Electrical Equipment:
			1. The door control shall have integral piggyback control panel.
			2. The door shall have a separate control panel located at the ground level. This panel shall be provided by Division 16.
			3. The controls will include a heavy duty revering starter.
			4. Thermal overload relays.
			5. Control relays.
			6. Time delay on reversing.
			7. Timer to close the door.
			8. Miller reversing safety bar on the bottom of the door.
			9. Protective urethane rubber hood over the Miller safety bar.
			10. 16 gage SOW coiled cord for reversing safety bar.
			11. Control interface and interlock with auxiliary locking and control system.
		3. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO acoustic steel overhead door assemblies are supplied with overhead door hardware and electric operators as an integral part of the tested assembly. All other accessories specified in this section shall be supplied by the door manufacturer. Delete accessories not required.

* + - 1. Glazing Stops: Formed galvanized steel channel, corner construction; prepared for countersink style screws.

\*\* NOTE TO SPECIFIER \*\* Delete corner construction not required.

* + - * 1. Butted corners.
				2. Mitred corners.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Tamperproof screws.
			1. Glass: Type as tested to achieve blast performance ratings.
			2. Weight Box shall be constructed from structural steel members. Counterweight shall have internal angle guides to enclose and guide the counterweights for the full travel. The weight box shall be braced at the building structure by the door erector.
			3. Guide Assembly shall be constructed from structural steel members with base and guide covered with 1inch (6 mm) thick steel plate. The guide assembly shall be braced at the building structure by the door erector.
			4. Guide Angles: Door blades will ride on a continuous vertical structural steel angle and guides and shall not be less than 1inch (6 mm) in thickness. The guide angles will be welded to the to the weight box and guide assembly. The weight box and guide assembly shall be braced at the building structure by the door erector on 48 inches (1200 mm) centers.
			5. Section Guides: Each door section shall have continuous member that shall mate with the guide angles. The section guides shall be bolted to the door section for easy field installation or replacement removal of the sections.
			6. Insulation of Weight boxes and Guides: Exposed surfaces of the weight boxes and guides shall be insulated with 1 inch thick polyurethane insulation and shall be back sheeted with 18 gage galvanized steel sheet.
			7. Weather Stripping: The vertical weather stripping shall be combination aluminum retainer and nylon brush set over insulation of the weight box and guides cover.
			8. Multi-blade model # 45 Drive and Counterbalancing Mechanism: Positive frictionless drive shall consist of machined cable sheaves and steel sprockets mounted on a solid cold rolled steel shaft. All rotating elements shall rotate on a heavy duty, grease-packed-for life, self-aligning flange bearing. The drive unit shall be modular and shall be mounted in a removable heavy gage drive housing. For maximum safety two cables shall be provided for each section as well as two roller chains for the bottom section. The drive and idler housings shall be seated and bolted to the weight box and door guide assemblies for easy servicing. Counterweight sets shall be suspended by heavy duty roller chains and preformed galvanized cables assuring the smooth travel of each door blade in both the upward and downward direction. Steel pick up members with rubber chock absorbing cushions on the top of each section shall ensure smooth and silent operation. Roller chain and cables shall be selected to provide 7:1 safety factor and shall be equipped with blade leveling screws.
			9. Safety Catches: In the case of a cable failure the upper blades shall be equipped with heavy duty factory welded catches. The safety catches shall prevent the upper sections from falling further than the section immediately below.
		1. Fail-Safety Device: The door will be equipped with a fail safety device that will provide the following features:
			1. Instantly locking bottom section into both weight box and guide when one or both counterweight chains are broken or slacked.
			2. Instantly cuts power to the motor preventing further damage.
			3. Maximum permissible engagement is 6 inches (152 mm).
			4. Eliminates the need for side locks.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ACOUSTIC WOOD DOORS AND HOLLOW METAL FRAMES
		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 adhered facing.

\*\* NOTE TO SPECIFIER \*\* Door facing not required.

* + - 1. Wood Door Facing:
				1. Wood Face Veneer: [\_\_\_\_\_] species, [\_\_\_\_\_] cut; minimum thickness before sanding 0.6 mm (.024 inch).
				2. Where door face is wood face veneer, door edges shall be supplied with matching stiles and rails
			2. Plastic laminate Facing:
				1. Plastic Laminate: shall be selected from manufacturer's standard colors and patterns.
				2. Where door face is plastic laminate, door edges shall be supplied with hardwood stiles and rails.

\*\* NOTE TO SPECIFIER \*\* 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.

* + 1. Wood Door Fabrication:
			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. Top and Bottom Rails: Factory sealed with wood sealer.
			5. Astragals: Metal acoustic astragals with integral acoustic seals for double doors.

\*\* NOTE TO SPECIFIER \*\* Note that where concealed vertical rod exit devices are required, the door thickness will be 2-1/4 inches (55 mm) to accommodate the acoustic structure necessary for reinforcement of the door hardware. Delete exit device not required.

* + - 1. Exit Device Vertical Rods: Surface mounted; coordinate with exit hardware devices specified in Section 08 71 00 - Door Hardware.
			2. Exit Device Vertical Rods: Concealed mounted; coordinate with exit hardware devices specified in Section 08 71 00 - Door Hardware.
		1. Steel Frame Fabrication:
			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.

\*\* NOTE TO SPECIFIER \*\* Delete mullion type not required.

* + - 1. Mullions for Double Doors: Fixed type.
			2. Mullions for Double Doors: Removable type.
		1. Accessories:

\*\* NOTE TO SPECIFIER \*\* 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. Delete accessories not required.

* + - 1. Glazing Stops for Frames: Formed steel channel, corner construction; prepared for countersink screws for side lite and borrowed lite frames.

\*\* NOTE TO SPECIFIER \*\* Delete steel material not required.

* + - * 1. Steel Material: Galvanized.
				2. Steel Material: Stainless.

\*\* NOTE TO SPECIFIER \*\* Delete corner construction not required.

* + - * 1. Butted corners.
				2. Mitred corners.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Tamperproof screws.
			1. Glazing stops for doors: Formed blade stops, corner construction; prepared for countersink screws.

\*\* NOTE TO SPECIFIER \*\* Delete steel material not required.

* + - * 1. Steel Material: Galvanized.
				2. Steel Material: Stainless.

\*\* NOTE TO SPECIFIER \*\* Delete corner construction not required.

* + - * 1. Butted corners.
				2. Mitred corners.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Tamperproof screws.
			1. Glass: Type as tested to achieve STC and fire ratings. Glazing to be factory supplied and pre-installed.
			2. Primer: Rust inhibitive zinc chromate on frames.
			3. Threshold: To provide a seal for door in closed position.
			4. Astragal: To be supplied loose ready for field assembly.
			5. Perimeter and bottom acoustic seals: to provide an acoustic seal for door is closed position.
			6. Mullion: To be provided at paired and multiple leaf openings, where occasional access is required. Mullions with perimeter seals to be supplied by door and frame manufacturer.
			7. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, and STC rating.

\*\* NOTE TO SPECIFIER \*\* 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.

\*\* NOTE TO SPECIFIER \*\* Delete system not required.

* + - 1. System: Clear Coat only.
			2. System: Stain and Clear Coat.
			3. System: Primed.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. SLIDING ACOUSTIC STEEL DOORS
		1. Manufacture doors and frames to STC rating measured in accordance with ASTM E90.
		2. Sheet Steel:

\*\* NOTE TO SPECIFIER \*\* Delete sheet material not required.

* + - 1. Galvanized steel to ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
			2. Stainless steel to ASTM A480, Type 304.
			3. Stainless steel to ASTM A480, Type 316.

\*\* NOTE TO SPECIFIER \*\* Specify door thickness and other values with caution as they may vary in order to meet the STC ratings required. Higher STC ratings may require thicker doors. AMBICO doors are typically lighter in weight than other manufacturers' doors for the same STC rating.

* + 1. Steel Door Fabrication:
			1. Sheet steel faces, thickness, design, and core suitable to achieve specified STC performance.

\*\* NOTE TO SPECIFIER \*\* Note that STC or fire ratings may dictate the details of oversize acoustic door or frame construction. Where door panels are larger than 4'0" in width, or 10'0" in height, specify the following construction details in consultation with the door manufacturer.

* + - 1. Acoustic core construction, longitudinal edges, mechanically inter-locked with visible edge seams.
			2. Reinforce doors where surface-mounted hardware is required.
			3. Drill and tap for mortised, templated hardware.
		1. Steel Frame Fabrication:
			1. Sheet steel metal thickness appropriate to maintain door STC and fire ratings, mitred corners, fully welded seams.
			2. Factory assembled and welded frames.
		2. Accessories:
			1. Door Hardware: Manufacturer's standard.
				1. Sliding door hardware including track, brackets, hangers, and guides.

\*\* NOTE TO SPECIFIER \*\* Electric operators should be considered when door panels weigh more than 350 pounds. Delete electric operator if not required.

* + - 1. Electric Operator and Safety Device: Manufacturer's standard.
			2. Perimeter Gasketing System: Manufacturer's standard for STC rating required.
				1. Supply perimeter seal, bottom seal, and threshold.
			3. Glazing: Factory installed type as tested to achieve STC rating required.
			4. Glazing Stops: Formed steel channel, corners; prepared for countersink screws.

\*\* NOTE TO SPECIFIER \*\* Delete steel material not required.

* + - * 1. Steel Material: Galvanized.
				2. Steel Material: Stainless.

\*\* NOTE TO SPECIFIER \*\* Delete corner construction not required.

* + - * 1. Butted corners.
				2. Mitered corners.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - * 1. Tamperproof screws.
			1. Primer: Rust inhibitive zinc chromate.
		1. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, model number, and performance rating.

\*\* NOTE TO SPECIFIER \*\* Delete door finish not required.

* + 1. Factory Door Finish: Factory applied zinc chromate primer to be applied to all exposed surfaces.
		2. Factory Door Finish: Factory applied zinc chromate primer touch-up only, where product has been welded and ground smooth.
		3. Factory Door Finish: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete surface finish not required.

* + - 1. Surface Finish: 2B finish.
			2. Surface Finish: 4 finish.
			3. Surface Finish: 8 finish.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install components to manufacturer's written instructions.
		2. Install steel doors and frames to CSDMA and HMMA 840 standards and in accordance with NFPA 80 and UL 10C as scheduled or required, and local authority having jurisdiction.
		3. Utilize certified welders.
		4. Coordinate with 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.
	4. ERECTION TOLERANCES
		1. Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more then plus or minus 1/16 inch (1.5 mm) in compliance with HMMA 841.
	5. 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 cycles of operation. Correct any deficient doors.
	6. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION