SECTION 08 30 00

BULLET RESISTANT DOORS AND FRAMES

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\*\* NOTE TO SPECIFIER \*\* AMBICO LIMITED; bullet resistant doors and frames, specialized doors and door frames.
This section is based on the products of AMBICO LIMITED, which is located at:1120 Cummings Ave.Ottawa, ON, Canada K1J 7R8Toll Free Tel: 888-423-2224Tel: 613-746-4663Fax: 800-465-8561Email: [request info (specialized@Ambico.com)](https://arcat.com/rfi?action=email&company=AMBICO%252BLIMITED&message=RE%253A%2520Spec%2520Question%2520(08395abl)%253A%2520&coid=40356&spec=08395abl&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. Bullet resistant steel doors and frames.
		2. Bullet resistant wood doors and hollow metal frames.
		3. Bullet resistant steel overhead doors.
		4. Sliding bullet resistant doors.
		5. Bullet resistant pressed steel frames and pressed wood doors and panels.
	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 91 23 - Backer Rods.
		3. Section 08 71 00 - Door Hardware.
		4. Section 08 11 00 - Metal Doors and Frames.
		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 A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
		3. 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.
		4. Canadian Steel Door Manufacturers Association (CSDMA), Selection and Usage Guide for Steel Doors and Frames
		5. HMMA 802 - Manufacturing of Hollow Metal Doors and Frames.
		6. HMMA 840 - Installation and Storage of Hollow Metal Doors and Frames.
		7. HMMA 841 - Tolerances and Clearance for Commercial Hollow Metal Doors and Frames.
		8. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.
		9. ULC 752 - Standard for Bullet-Resisting Equipment.
		10. 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 ballistic requirement; otherwise, specify individual performance for door types in Part 2 or in a schedule. AMBICO wood bullet resistant doors and frames can be manufactured to meet the bullet resistant requirement of handguns as well as high powered rifles.

* + 1. Ballistic Resistance: Conform to UL 752.

\*\* NOTE TO SPECIFIER \*\* Delete bullet resistance level not required.

* + - 1. Level 1.
			2. Level 2.
			3. Level 3.
			4. Level 4.
			5. Level 5.
			6. Level 6.
			7. Level 7.
			8. Level 8.
			9. Level 9.
			10. Level 10.
	1. REGULATORY REQUIREMENTS

\*\* NOTE TO SPECIFIER \*\* Include the following article only if fire rated doors are specified. AMBICO can supply steel doors with 45 or 90 minute fire rating label. Fire ratings are available on levels 1 through 8 steel swing doors only. Delete if not required.

* + 1. Installed Door and Frame Assembly: Conform to NFPA 80 and UL 10C for fire rated class as scheduled or as 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, internal reinforcement, anchor types, closure methods, finishes, location of cut-outs for hardware, and cut outs for glazing louvers.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Test Data: Submit independent test data from a recognized licensed laboratory indicating compliance with ballistic performance requirements.
		2. Installation Instructions: Submit manufacturer's installation instructions.
	1. QUALITY ASSURANCE

\*\* 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) Window & Door Manufacturers Association (WDMA) standards.
		2. Manufacturer: Minimum five years documented experience manufacturing security door assemblies.
		3. Installer Qualifications: Minimum 2 years experience installing similar products.

\*\* 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 WDMA I.S. 1A for doors and HMMA 840 for frames.
			3. Comply with HMMA 840.
			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.

\*\* NOTE TO SPECIFIER \*\* Wood door requirement. Delete if not required.

* + - 1. Store 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 to metal on frames and wood on doors caused by shipping or handling.
			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 swing doors or one year overhead door 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 7R8Toll Free Tel: 888-423-2224Tel: 613-746-4663Fax: 800-465-8561Email: [request info (specialized@Ambico.com)](https://arcat.com/rfi?action=email&company=AMBICO%252BLIMITED&message=RE%253A%2520Spec%2520Question%2520(08395abl)%253A%2520&coid=40356&spec=08395abl&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. BULLET RESISTANT STEEL DOORS AND FRAMES
		1. Manufacture doors and frames to bullet resistance rating in accordance with UL 752.

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

* + 1. Sheet Steel: Galvanized steel to ASTM A653/A653M, ZF75 (galvaneal).
		2. Sheet Steel: Stainless Steel to ASTM A480.
			1. Type 304.
			2. Type 316.
		3. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		4. Steel Door Fabrication::
			1. Sheet steel faces, thickness, design, and core suitable to achieve specified ballistic performance.

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

* + - 1. Construction: Longitudinal edges mechanically inter-locked.

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

* + - * 1. Visible edge seams.
				2. No visible edge seams.
			1. Construction: Longitudinal edges welded, filled and sanded.

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

* + - * 1. Visible edge seams.
				2. No visible edge seams.
			1. Top and Bottom Channels: Inverted, recessed, welded steel channels.

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

* + - 1. Astragals: 2 inches (51 mm) wide flat overlapping bullet resistant astragal for double doors. Two astragals may be required for some swing and hardware configurations.
			2. Weld hardware reinforcement plates in place.
			3. Fabrication Tolerances: To HMMA 841.
		1. Steel Frame Fabrication:
			1. Sheet steel, metal thickness and appropriate to maintain ballistic door ratings, mitred corners.
			2. Factory assembled and welded frames.

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

* + - 1. Mullions for Double Doors: Fixed type.
			2. Mullions for Double Doors: Removable type.
			3. Reinforce frames wider than 48 inches (1200 mm) with steel channels welded tightly into frame head, flush with top.
			4. Provide three single silencers for single doors and mullions of double doors on strike side, and two single silencers on frame head at double doors without mullions.
		1. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO steel bullet resistant doors and frames are prepared for heavy weight builders hardware to be supplied by Section 08 71 00 - Door Hardware. All other accessories specified in this section shall be supplied by the door and frame supplier. Delete accessories not required.

* + - 1. Hinges: Heavy weight butt type by section 08 71 00 - Door Hardware or super heavy weight by door manufacturer for levels 9 and 10
			2. 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 ballistic ratings.
			2. Primer: Rust inhibitive zinc chromate.
			3. Astragal: To be factory welded to doors.
			4. Mullion: To be provided at paired and multiple leaf openings, where occasional access is required. Mullion to comply with the bullet resistant rating of the entire assembly.
			5. Affix permanent metal nameplates to door and frame, indicating manufacturer's name and ballistic rating.

\*\* 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 had been welded and ground smooth.

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

* + 1. Stainless Steel:

\*\* NOTE TO SPECIFIER \*\* Delete stainless steel finish not required.

* + - 1. Finish: #2B Mill Finish.
			2. Finish: #4 Satin.
			3. Finish: #6 Matte.
			4. Finish: #8 Mirror.
			5. Finish: Colored.
			6. Finish: Hairline.

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

* 1. BULLET RESISTANT WOOD DOORS AND HOLLOW METAL FRAMES
		1. Manufacture doors and frames to bullet resistance rating in accordance with UL 752.
		2. Sheet Steel: Galvanized steel to ASTM A653/A653M, ZF75 (glavaneal).
		3. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		4. Wood Door Panel: Bullet-resistant 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.
		1. Wood Door Fabrication:
			1. Wood veneer faces, door thickness, design and core suitable to achieve specified ballistic performance.
			2. Reinforce doors where surface-mounted hardware is required.
			3. Drill and tap for mortised, templated hardware.

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

* + - 1. Astragals: .2 inches (51 mm) wide flat overlapping bullet resistant astragal for double doors. Two astragals maybe required for some swing and hardware configurations.
		1. Steel Frame Fabrication:
			1. Sheet steel, metal thickness and appropriate to maintain ballistic door ratings, mitred corners.
			2. Factory assemble and weld frames.

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

* + - 1. Mullions for Double Doors: Fixed type.
			2. Mullions for Double Doors: Removable type.
			3. Reinforce frames wider than 48 inches (1200 mm) with roll formed steel channels welded tightly into frame head, flush with top.
			4. Provide three single silencers for single doors and mullions of double doors on strike side, and two single silencers on frame head at double doors without mullions.
		1. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO wood bullet resistant doors and steel frames are prepared for heavy weight builders hardware to be supplied by Section # 08 71 10. All other accessories specified in this section shall be supplied by the door and frame manufacturer.

* + - 1. Hinges: Heavy weight butt type by section 08 71 00 - Door Hardware or super heavy weight by door manufacturer for levels 9 and 10 .
			2. 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 ballistic ratings. Glazing to be factory supplied and pre-installed.
			2. Primer: Rust inhibitive zinc chromate.
			3. Astragal: To be factory welded to doors.
			4. Mullion: To be provided at paired and multiple leaf openings, where occasional access is required. Mullion to comply with the bullet resistant rating of the entire assembly.
			5. Affix permanent metal nameplates to door and frame, indicating manufacturer's name and ballistic 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 shall 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: Prime painted.

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

* 1. BULLET RESISTANT STEEL OVERHEAD DOORS
		1. Manufacture doors and frames to bullet resistance rating in accordance with UL 752.

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

* + 1. Sheet Steel: Galvanized steel to ASTM A653/A653M.
			1. Coating designation Z275 ZF75 (G90) (A25) for exterior door assemblies.
		2. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		3. Structural Plate: Hot rolled steel to ASTM A1011.
		4. Steel Overhead Door Fabrication:
			1. Sheet steel faces, thickness, design, and core suitable to achieve specified ballistic performance.
			2. Bullet Resistant 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.
			6. Primer: Rust inhibitive zinc chromate.
			7. Affix permanent metal nameplates to door and frame, indicating manufacturer's name and ballistic performance rating.

\*\* NOTE TO SPECIFIER \*\* Electrical operators shall be supplied by the Bullet Resistant steel door manufacturer and shall be an integral part of the Bullet Resistant Steel Overhead Door Assembly.

* + 1. Electric Operator: The electric operator shall have the following characteristics:
			1. The unit shall be UL approved.
			2. The unit shall be environmentally rated at Class I, Division II, Group C. Installation shall be in conformance with NEC.
			3. The unit shall have a heavy duty worm-gear reducer with a standard NEMA "C" flange. 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 to 10 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: Electrical wiring, conduit and disconnects.
			3. The door controls shall be housed in a Class I, Division II metal box.
			4. The controls shall include a heavy duty reversing starter.
			5. Thermal overload relays.
			6. Control relays.
			7. Time delay on reversing.
			8. Timer to close the door.
			9. Miller reversing safety bar on the bottom of the door.
			10. Additional protective urethane rubber hood over the Miller safety bar.
			11. 16 gage SOW coiled cord for revering safety bar.
			12. Control interface and interlock with auxiliary third-party system.
		3. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO Bullet Resistant 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.

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

* + - 1. Glazing to be factory supplied and preinstalled.
			2. Glazing to be factory supplied and field installed.
			3. 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.
			4. 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.
			5. 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.
			6. 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.
			7. Insulation of Weight boxes and Guides: Exposed surfaces of the weight boxes and guides shall be insulated with 1 inch (25 mm) thick polyurethane insulation and shall be back sheeted with 18 gage galvanized steel sheet.
			8. Weather stripping: The vertical weather stripping shall be combination aluminum retainer and nylon brush set over insulation of the weight box and guides cover.
			9. Multi-blade model # 45 Drive and Counterbalancing Mechanism: positive frictionless drive will consist of machined cable sheaves and steel sprockets mounted on a solid cold rolled steel shaft. All rotating elements will rotate on a heavy duty, grease-packed-for life, self-aligning flange bearing. The drive unit will be modular and will 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 will be seated and bolted to the weight box and door guide assemblies for easy servicing. Counterweight sets will 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 will ensure smooth and silent operation. Roller chain and cables will be selected to provide 7:1 safety factor and shall be equipped with blade leveling screws.
			10. Safety Catches: in the case of a cable failure the upper blades will be equipped with heavy duty factory welded catches. The safety catches will prevent the upper sections from falling further than the section immediately below.
			11. 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.
				4. Eliminates the need for side locks.

\*\* 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 finishing per Section 09 91 23 - Interior Painting.

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

* 1. SLIDING BULLET RESISTANT DOORS
		1. Manufacture doors and frames to bullet resistance rating in accordance with UL 752.

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

* + 1. Sheet Steel: Galvanized steel to ASTM A653/A653M, ZF75 (galvaneal).
		2. Sheet Steel: Stainless Steel to ASTM A480.
			1. Type 304.
			2. Type 316.
		3. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		4. Steel Door Fabrication:
			1. Sheet steel faces, thickness, design, and core suitable to achieve specified ballistic performance.

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

* + - 1. Construction: Longitudinal edges mechanically inter-locked.

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

* + - * 1. Visible edge seams.
				2. No visible edge seams.
			1. Construction: Longitudinal edges welded, filled and sanded.

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

* + - * 1. Visible edge seams.
				2. No visible edge seams.
			1. Top and Bottom Channels: Inverted, recessed, welded steel channels.
			2. Weld hardware reinforcement plates in place.
			3. Fabrication Tolerances: To HMMA 841.
		1. Steel Frame Fabrication:
			1. Sheet steel, metal thickness and appropriate to maintain ballistic door ratings, mitred corners.
			2. Factory assembled and welded frames.
		2. Accessories:
			1. Door Hardware: Manufacturer's standard.
				1. Sliding door hardware including track, brackets, hangers, and guides.
			2. 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. Glazing: Type as tested to achieve ballistic ratings.

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

* + - * 1. Supply glazing factory pre-installed.
			1. Primer: Rust inhibitive zinc chromate.
			2. Affix permanent metal nameplates to door and frame, indicating manufacturer's name and ballistic rating.

\*\* 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 had been welded and ground smooth.

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

* + 1. Stainless Steel:

\*\* NOTE TO SPECIFIER \*\* Delete stainless steel finish not required.

* + - 1. Finish: #2B Mill Finish.
			2. Finish: #4 Satin.
			3. Finish: #6 Matte.
			4. Finish: #8 Mirror.
			5. Finish: Colored.
			6. Finish: Hairline.

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

* 1. BULLET RESISTANT PRESSED STEEL FRAMES AND PRESSED WOOD DOORS AND PANELS
		1. Manufacture pressed steel frames and doors to bullet resistance rating in accordance with UL 752.
		2. Steel Frame Material:
			1. Sheet Steel: Galvanized steel to ASTM A653/A653M, ZF75 (galvaneal).
			2. Reinforcement Channel: To CSA G40.20/G40.21, coating designation to ASTM A653/A653M, ZF75 (A25).
		3. Steel Frame Fabrication:
			1. Sheet steel, metal thickness and appropriate to maintain ballistic door ratings, mitred corners.
			2. Factory assembled and welded frames.

\*\* NOTE TO SPECIFIER \*\* Delete mullion option not required. Delete both if specifying a single door.

* + - 1. Mullions for Double Doors: Fixed type.
			2. Mullions for Double Doors: Removable type.
			3. Reinforce frames wider than 48 inches (1200 mm) with roll formed steel channels welded tightly into frame head, flush with top.
			4. Provide three single silencers for single doors and mullions of double doors on strike side, and two single silencers on frame head at double doors without mullions.
			5. Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, model number, and ballistic rating.
			6. Glazing: shall be in conformance with bullet resistant rating of door and frame assembly. Supply glazing loose, ready for ready for field assembly by others.
		1. Wood Door Panel Material: Bullet-resistant core and facing.

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

* + - 1. Facing: Wood Veneer. Species: \_\_\_\_\_\_\_\_. Cut: \_\_\_\_\_\_\_\_. Where door face is wood face veneer, the minimum thickness before sanding is to be 0.6 mm (.024 inch).
				1. Door Edging: Matching wood stiles and rails

\*\* NOTE TO SPECIFIER \*\* Delete either or both of the following two options if not required.

* + - * 1. FSC certified.
				2. Urea-formaldehyde free.
			1. Facing: Plastic Laminate. Selected from manufacturer's standard colors and patterns.
				1. Door Edging: Hardwood stiles and rails.
		1. Wood Door Panel Fabrication:
			1. Wood veneer faces, door thickness, design and core suitable to achieve specified ballistic performance.
			2. Reinforce doors where surface-mounted hardware is required.
			3. Drill and tap for mortised, templated hardware.

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

* + - 1. Astragals: Metal Z shaped astragals for double doors.
			2. Astragals: Metal T shaped astragals for double doors.
			3. Glass: Type as tested to achieve ballistic ratings.

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

* + - * 1. Glazing to be factory supplied and pre-installed.
		1. Accessories:

\*\* NOTE TO SPECIFIER \*\* AMBICO wood bullet resistant doors and steel frames are prepared for heavy weight builders hardware to be supplied by Section 08 71 00 - Door Hardware. All other accessories specified in this section shall be supplied by the door and frame manufacturer.

* + - 1. Hinges: Heavy weight butt type as specified in Section 08 71 00 - Door Hardware.
			2. 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 ballistic ratings. Glazing to be factory supplied and pre-installed.
			2. Primer: Rust inhibitive zinc chromate.
			3. Astragal: To be factory welded to doors.
			4. Mullion: To be provided at paired and multiple leaf openings, where occasional access is required. Mullion to comply with the bullet resistant rating of the entire assembly.

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

* + - * 1. Mullions are to be removable.
		1. Finishes:

\*\* 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 shall be supplied unfinished by the factory and finished in the field by others.

* + - 1. Frames: Factory applied zinc phosphate primer to be applied to all exposed surfaces. Touch-up where product had been welded and ground smooth.
			2. Factory Wood Door Panels: 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: Prime painted.
			1. Top and Bottom Rails: Factory sealed with wood sealer.
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 doors and frames to specified standards.

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

* + 1. Install wood doors and frames to ANSI/WDMA IS 1A standards.
		2. Coordinate with wall construction for anchor placement.
		3. Set frames plumb, square, level and at correct elevation.
		4. Allow for deflection to ensure that structural loads are not transmitted to frame.
		5. Adjust operable parts for correct clearances and function.
	1. ERECTION TOLERANCES
		1. Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than plus or minus 1/16 inch (1.5 mm) in compliance with HMMA 841.
	2. 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 and frames.
	3. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION