This section includes AMBICO Bullet Resistant Steel Window Frame assemblies and relies on applicable industry standards. This section includes proprietary, descriptive 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 Bullet-resistant steel window frames. Items shall be fixed-in-place and shall be designed to be inoperable.

.2 Glazed lite bullet resistant steel frames.

.3 Factory supplied [and installed] glass and glazing.

1.2 RELATED SECTIONS

This article references other specification sections that inter-rely on this section. This listing should include those sections that describe subjects or products that affect this section directly.

.1 Section [_____-_____]: Masonry mortar fill of metal frames.

.2 Section 07 92 00 - Joint Sealing: Caulking between window frame assemblies and adjacent construction.

.3 Section 08 34 54-Bullat Resistant Steel Door and Frames Assemblies

.4 Section 09 91 00 - Painting: Field painting of window frames.

1.3 REFERENCES

Edit this article after editing the rest of this section. List reference standards below that are included within the text of this section, when edited for a project specification. Delete references that do not apply to this project.

.1 ASTM A36/A36M-14 - Standard Specification for Carbon Structural Steel.

.2 ASTM A653/A653M-15el - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.3 ASTM A1011/A1011M-18 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 ASTM C1172 - 14 Standard Specification for Laminated Architectural Flat Glass

.5 ASTM C1036 - 16 Standard Specification for Flat Glass

.6 ULC 752-05 republished 12\2015 - Standard for Bullet Resisting Equipment.

.7 AWS D1.1/D1.1M:2015, Structural Welding Code - Steel.

.8 Canadian Steel Door Manufacturers Association (CSDMA), Selection and Usage Guide for Steel Doors and Frames, 2009.

.9 HMMA 840-16 - Installation and Storage of Hollow Metal Doors and Frames.

.10 HMMA 841-17 Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames

.11 USGBC – LEED v4.

1.4 PERFORMANCE REQUIREMENTS.

Include this article if all windows should meet the same ballistic requirement; otherwise, specify individual performance for window types in Part 2 or in a window schedule. AMBICO windows can be manufactured to meet the bullet resistant requirement of handguns as well as high powered rifles- Underwriters' Levels One through Eight.

.1 Ballistic Resistance: Conform to UL 752, Level [1] [8] [ ].

1.5 Submittals

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

.2 Product Data: Provide product data on bullet resistant steel window frame assembly construction.

.3 Shop Drawings: Indicate bullet resistant steel window frame assembly elevations, internal reinforcement, anchor types, closure methods and cut-outs [for glazing] [for louvers].

.4 Samples: Submit manufacturer's frame corner sample.

.5 Test Data:

.1 Submit independent test data from a recognized licensed laboratory indicating compliance with the bullet-resistance requirements.

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 are normally required for LEED v4 certification. AMBICO Bullet Resistant products offer significant advantages to firms interested in supporting LEED certification.

1.6 SUSTAINABLE DESIGN

.1 Section 01 35 18: LEED documentation procedures.

.2 Provide required LEED documentation for product.

.3 Submit Type 3 Environmental Product Declaration (EPD) for products of this section.

.4 Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.7 QUALITY ASSURANCE

.1 Manufacture blast resistant window frame assemblies in compliance with [CSDMA] [HMMA 841] standards.

.2 Provide Products of this section from a single manufacturer, unless components are referenced specifically in other sections.

.3 Manufacturer: Minimum 5 years documented experience manufacturing bullet resistant, steel window frame assemblies.

.4 Pre-installation Meeting: Convene a pre-installation meeting [2] [____] weeks before start of installation of bullet resistant, steel, window 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 HMMA 840 and manufacturer’s written instructions.

.3 Remove window frames from wrappings or coverings upon receipt on site and inspect for damage. Store in vertical position, spaced with blocking to permit air circulation between components.

.4 Store in vertical position, spaced with blocking to permit air circulation between components. Store materials out of water and covered to protect from damage.

.5 Clean and touch up scratches or disfigurement of frames caused by shipping or handling with zinc-rich primer.

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 [_____].

.3 Substitutions: [Refer to Section 016000.] [Not permitted.]

2.2 MATERIALS

.1 Sheet Steel: Galvanized steel to ASTM A653/A653M.

.1 Coating designation [Z275] ([G90]) for exterior bullet resistant steel window frame assemblies.

.2 Coating designation [ZF001] ([A01]) for interior bullet resistant steel window frame 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 Glass in conformance with ASTM C1172 and as tested to achieve bullet resistance in conformance with UL 752.

2.3 ACCESSORIES

AMBICO bullet resistant steel, window frame assemblies may be supplied with glazing as an integral part of the tested assembly. All accessories in this section shall be supplied by the window frame manufacturer.

.1 Glazing Stops: Formed galvanized steel channel, [butted] [mitred] corners; prepared for countersink style [tamperproof] screws.

.2 Glass: Type as tested to achieve bullet resistant performance ratings. Glazing to be factory supplied loose ready for site installation by others.

.3 Primer: Rust inhibitive zinc phosphate primer.

2.4 FABRICATION

Steel window frames and glazing are provided as an integral part of the bullet resistant, window frame assembly.

.1 Manufacture bullet resistant steel window frames assemblies in accordance with UL 752.

.2 Bullet Resistant Steel Window Frames: Fixed in-place Inoperable

.1 Sheet steel and metal thickness appropriate to maintain bullet resistant ratings.

.2 Frame members shall be fabricated with mitred corners.

.3 Factory assemble and weld frames.

.4 Affix permanent metal nameplates to window frame, indicating manufacturer's name, tag, model number, and performance rating.

2.5 SUPPLY OF GLAZING

.1 Glazing shall be designed in conformance with Performance Requirements.

.2 Glazing shall be factory supplied and shipped loose ready for site installation by others.

2.6 FINISHES

.1 Factory Finish: Factory applied zinc phosphate primer [to be applied to all exposed surfaces] [touch-up only, where product has been welded and ground smooth].

Part 3 Execution

3.1 INSTALLATION

.1 Install components including bullet resistant steel window frames and glazing in accordance with manufacturer's written instructions.

.2 Install window frames to [CSDMA] [HMMA 840] standards.

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

.4 Set window frame assemblies plumb, square, level in accordance with Section 05 50 00.

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

.6 Finish paint in accordance with Section 09 91 00.

3.2 ERECTION TOLERANCES

.1 Section 01 73 00: Tolerances.

.2 Installation tolerances of installed frame for squareness, alignment, twist and plumbness are to be no more than ± 1/16in (1.5mm) in compliance with HMMA 841.

3.3 FIELD QUALITY CONTROL

.1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of bullet resistant, window frame assemblies.

.2 Provide manufacturer's representative to inspect bullet resistant window frame installation. Correct any deficient assemblies.

END OF SECTION