

This section includes Bullet Resistant, Steel, Overhead Door Assemblies, with integral electric operators and accessories. 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 overhead doors [and panels].
- .2 Factory supplied overhead door hardware and electric operator.
- .3 [Factory supplied and installed bullet resistant glass and glazing.]
- .4 [Bullet resistant 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 05 50 00 - Metal Fabrications: Steel channel frame to suit metal door and operator.
- .3 Section 07 92 00 - Joint Sealing: Caulking between frame and adjacent construction.
- .4 Section 08 34 54- Bullet Resistant Steel Doors and Frames
- .5 Section 09 91 00 - Painting: Field painting of doors and panels.
- .6 Section 26 05 20- Electrical: Electrical wiring, conduit, and disconnects for operator.

1.3 REFERENCES

List reference standards that are included within the text of this section. Delete references that do not apply to this project.

- .1 ASTM A36/A36M-14 - Standard Specification for Carbon Structural Steel.
- .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 AISC 325-17 - AISC Steel Construction Manual.
- .4 ULC 752-05-republished 12\2015 - Standard for Bullet Resisting Equipment.

1.4 SUBMITTALS

- .1 Section [01 33 00]: Submission procedures.
- .2 Product Data: Provide product data on door construction and [_____].
- .3 Shop Drawings: Indicate door elevations, internal reinforcement, operator and counterbalance, internal reinforcement, location of cut-outs for hardware [and glazing].
- .4 Test Data:
 - .1 Submit independent test data from a recognized licensed laboratory indicating compliance with the ballistic performance requirements.
- .5 Installation Instructions: Submit manufacturer's installation instructions.

1.5 QUALITY ASSURANCE

- .1 Provide Products of this section from a single manufacturer, unless components are referenced specifically in other sections.
- .2 Manufacturer: Minimum 10 years documented experience manufacturing Bullet Resistant Steel Overhead Door Assemblies.
- .3 Pre-installation Meeting: Convene a pre-installation meeting [2] [_] weeks before start of installation of overhead door, overhead door hardware and overhead door operator 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.

1.6 DELIVERY, STORAGE AND PROTECTION

- .1 Section [01 61 00]: Transport, handle, store, and protect products.
- .2 Remove overhead door panels, overhead door hardware and overhead door operators from wrappings or coverings upon receipt on site and inspect for damage.
- .3 Store in vertical position, spaced with blocking to permit air circulation between components.
- .4 Store materials out of water and covered to protect from damage.
- .5 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

1.7 WARRANTY

- .1 Manufacturer's Limited Warranty: One (1) year 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 PERFORMANCE REQUIREMENTS

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 overhead door assemblies can be manufactured to meet the bullet resistant requirement of handguns as well as high powered rifles.

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

2.3 MATERIALS

- .1 Sheet Steel: Galvanized steel to ASTM A653/A653M.
 - .1 Coating designation [Z275] [ZF75] ([G90]) ([A25]) ([]) for exterior door assemblies.
 - .2 Coating designation [ZF001] ([A01]) for interior 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 Core Insulation: Minimum U-value of 0.18.

- .5 Primer: Rust inhibitive zinc phosphate.

2.4 FABRICATION

- .1 Manufacture doors and frames to Level [1] [8] [] bullet resistance rating in accordance with UL 752.

- .2 Steel Doors, Overhead Door Type:
 - .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 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 1/4" thick steel plate. The guide assembly shall be braced at the building structure by the door erector. The weight box and guide assembly shall be braced at the building structure by the door erector on 48" (1200 mm) centers.
- .5 Guide Angles: Door blades will ride on a continuous vertical structural steel angle and guides and shall not be less than 1/4" in thickness. The guide angles will be welded to the to the weight box and guide assembly.
- .6 Section Guides: Provide each door section with a continuous member that mates with the guide angles. Bolt section guides to the door section for easy field installation or replacement.
- .7 Insulation of Weight boxes and Guides: Exposed surfaces of the weight boxes and guides shall be insulated with 1" thick polyurethane insulation and shall be back sheeted with 18 gage galvanized steel sheet.
- .8 Provide steel pick up members with rubber chock absorbing cushions on the top of each section will ensure smooth and silent operation.
- .9 Top and Bottom Channels: shall be full width and shall form a ship-lap joint between sections.
- .10 Weld hardware reinforcement plates in place.

2.5 ACCESSORIES

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.

- .1 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 levelling screws.

- .2 Drive System: Positive, with machined cable sheaves and steel sprockets.
 - .1 Shaft: Cold rolled steel.
 - .2 Bearings: Heavy duty, grease packed-for-life, self-aligning flange type.
 - .3 Housing: Removable, heavy gauge steel.
 - .4 Seat and bolt the drive and idler housings to the weight box and door guide assemblies for easy servicing.
- .3 Safety Cables and 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.
- .4 Counterweight sets: 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.
- .5 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.
- .3 [Glazing Stops: Formed galvanized steel channel, [butted] [mitred] corners; prepared for countersink style [tamperproof] screws.]
- .4 Weatherstripping: shall be combination aluminum retainer and nylon brush set over insulation of the weight box and guides cover
- .5 Nameplates: Affix permanent metal nameplates to door and frame, indicating manufacturer's name, door tag, model number and ballistic performance rating.

2.6 ELECTRICAL OPERATORS AND ACCESSORIES

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 Electric operator: UL approved.
 - 1 Heavy duty worm gear reducer with NEMA C flange.
 - .2 Power: [220] [____] volt, [3] [1] phase, 60 Hz, TEFC.

- .3 Electromechanical brake.
- .4 Rotary screw type limit switches.
- .5 Electrical interlock for manual operation.
- .2 Manual operator: Roller chain and cables, selected to provide 7:1 safety factor. Provide blade levelling screws.
- .3 Door Controls and Electrical Equipment:
 - .1 Integral piggyback control panel.
 - .2 Locate a separate control panel at the ground level, provided by others.
 - .3 Starter: Heavy duty reversing type.
 - .4 Thermal overload relays.
 - .5 Control interface and interlock with any third-party system.
 - .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 with additional protective urethane rubber hood.
 - .10 16 gage SOW coiled cord for reversing safety bar.
 - .11 The door shall have a separate control panel located at the ground level. This panel shall be provided by Section 26 05 20 –Wire and box connectors: Electrical wiring, conduit and disconnects.

2.7 GLAZING

- .1 Glazing shall be designed in conformance with 2.2.1
- .2 Glazing shall be factory supplied [and pre-installed] [and shipped loose ready for site installation by others].

2.8 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].
- .2 Finish Painting: finish painting shall be by Section 09 91 00

Part 3 Execution**3.1 INSTALLATION**

- .1 Install components in accordance with manufacturer's written instructions.
- .2 [Install factory supplied glazing to door panels.]
- .3 Brace weight box and guide assembly to the building structure at 1200 mm (48 inch) centres.
- .4 Adjust operable parts for correct clearances and function.
- .5 Finish paint in accordance with Section 09 91 00.
- .6 Touch up painted finishes where damaged.

3.2 FIELD QUALITY CONTROL

- .1 Provide qualified manufacturer's representative to instruct installers on the proper installation and adjustment of door assemblies. Field supervision to be conducted on-site by factory personnel during the initial installation period. Final commissioning of bullet resistant, steel overhead door assembly shall occur in the presence of factory personnel.
- .2 Provide manufacturer's representative to inspect door installation, and test minimum five (5) cycles of operation. Correct any deficient doors, accessories or operators.

END OF SECTION