

SECTION 08 5653

BULLET-RESISTANT STEEL WINDOWS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Bullet-resistant [fixed] [operable] steel window assemblies.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. American Welding Society (AWS) D1.3/D1.3M - Structural Welding Code - Sheet Steel.
- B. ASTM International (ASTM) A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- C. Underwriters Laboratories (UL) 752 - Bullet Resisting Equipment.

1.3 SYSTEM DESCRIPTION

- A. Design Requirements: Provide window frames of "non-ricochet type" intended to permit capture and retention of attacking projectile, lessening potential of random injury or lateral penetration.

1.4 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Include window profiles and sizes, type and spacing of frame anchors, reinforcement size and locations, details of joints and connections, and welding details.
 - 2. Product Data: Include product description for window assemblies including bullet-resistant ratings.
 - 3. Samples: [2 x 2] [__ x __] inch coating samples [showing available colors.] [in specified color.]
- B. Closeout Submittals:
 - 1. Maintenance Data: Include instructions for cleaning of glazed panels.

1.5 QUALITY ASSURANCE

- A. Fixed Window Assemblies: Ballistic Level [1,] [2,] [3,] [4,] [5,] [6,] [7,] [8,] tested to UL 752.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store window assemblies upright in protected, dry area, off ground or floor, with at least 1/4 inch space between individual units.
- B. Do not cover with non-vented coverings that create excessive humidity.
- C. Remove wet coverings immediately.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on products by ARMORTEX, 5926 Corridor Parkway, Schertz, Texas, 800-880-8306, www.armortex.com.
- B. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

- A. Steel Sheet:
 - 1. ASTM A1008/1008M, cold rolled, free from scale, pitting, coil breaks, and other surface defects.
- B. Bullet-Resistant Composite: UL Listed Bullet Resistant Composite by ARMORTEX, of UL Ballistic Level equal to specified frame ballistic protection level.
- C. Ballistic Steel: Hi-Hard Ballistic Steel, of UL Ballistic Level equal to specified frame ballistic protection level.
- D. Glazing: UL Listed [laminated glass.] [glass/polycarbonate composite.] [Glass-clad polycarbonate.] [Multi-ply polycarbonate.] [Acrylic polycarbonate composite.] [_____.]

2.3 FABRICATION

- A. Frames:
 - 1. Fabricate from 16 gage steel lined with [bullet-resistant composite.] [ballistic steel.]
 - 2. Bullet-resistant rating equivalent to or greater than glazing.
 - 3. Weld frame corners; knock-down and mechanical joints not acceptable.
 - 4. Frame modules capable of being joined with other frame modules to form continuous line.
 - 5. Replacement of glazing from secure side of window, not requiring removal of frame from opening.
- B. Operable Units:
 - 1. Hinge vertically utilizing full-length continuous hinge.
 - 2. Sash secured by keyed positive locking latch. Where multiple operable windows occur, key all locks alike.
- C. Welding: In accordance with AWS D1.3/D1.3M. Grind exposed welds flush and smooth.
- D. Finish work neat and free from defects.
- E. Allowable Tolerances: Plus or minus 1/16 inch for frame opening width, height, diagonal dimensions, and overall width and height (outside to outside).

2.4 FINISHES

- A. Steel:
 - 1. Dress tool marks and surface imperfections to smooth surfaces.
 - 2. Clean and chemically treat steel surfaces.
 - 3. Apply manufacturer's standard rust inhibiting gray primer paint.

**** OR ****

 - 4. Apply manufacturer's standard polyester powder coat, sprayed and baked, [_____] [custom] color [to be selected from manufacturer's full color range].
- B. Stainless Steel: No. 3 brushed finish.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install window assemblies in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Set plumb, square, and level.
- C. Secure to adjacent construction using fastener type best suited to application.
- D. Field alterations to window assemblies not permitted unless approved in advance by manufacturer and Architect.

3.2 ADJUSTING

- A. Touch up minor scratches and abrasions in [primer paint] [finish coat] to match factory finish.

END OF SECTION