

SECTION 08 5653

BULLET-RESISTANT ALUMINUM WINDOWS

PART 1 GENERAL

1.1 SUMMARY

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

1.2 REFERENCES

- A. American Welding Society (AWS) D1.2/D1.2M - Structural Welding Code - Aluminum.
- B. American Architectural Manufacturers Association (AAMA) 611 - Voluntary Specification for Anodized Architectural Aluminum.
- C. ASTM International (ASTM) B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- D. 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. Aluminum Extrusions:
 - 1. ASTM B221, 6061-T6 alloy and temper; minimum 38.0 KSI ultimate tensile strength and minimum 35.0 KSI yield strength.
- B. Bullet-Resistant Composite: UL Listed Bullet Resistant Composite by ARMORTEX.
- C. 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 aluminum extrusions lined with bullet-resistant composite.
 - 2. Weld frame corners; knock-down and mechanical joints not acceptable.
 - 3. Frame modules capable of being joined with other frame modules to form continuous line.
 - 4. Replacement of glazing from secure side of window, not requiring removal of frame from opening.
- B. Welding: In accordance with AWS D1.2/D1.2M. Grind exposed welds flush and smooth.
- C. Finish work neat and free from defects.
- D. 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. Aluminum: AAMA 611, Architectural Class I anodized, [clear.] [dark bronze.]

**** OR ****
- B. Aluminum: Apply manufacturer's standard polyester powder coat, sprayed and baked, [_____] [custom] color [to be selected from manufacturer's full color range].

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