



"Protecting People and Property"

BULLET, BLAST, AND FORCED ENTRY RESISTANT SYSTEMS

USAW500 SERIES OPERABLE BULLET / BLAST RESISTANT ALUMINUM WINDOW SHORT FORM GUIDE SPECIFICATION

The USAW500 Window is an Operable Bullet and Blast Resistant Aluminum Window capable of both in-swing and out-swing operations. A thermal barrier designed into the proprietary heavy-duty frame and sash mitigates heat transfer and results in reduced building operating costs. The unit is available as a casement, split, or projected window.

The USAW500 Window Series construction consists of heavy-duty aluminum extrusion and 1/8" minimum wall thickness. The USAW500 has ballistic ratings of U.L. Level 1 - 3 and can exceed GSA C and D blast criteria. The USAW500 is an all aluminum system, requiring no armor inserts.

SECTION 08582

BLAST AND BALLISTIC SECURITY WINDOWS

PART 1 GENERAL

1.01 Work Included

- A. Furnish and install Bullet/Blast Resistant Aluminum Windows complete with all required hardware and related components as shown on drawings and as specified in this section.
- B. All windows shall be United States Bullet Proofing USAW500 Series. Other manufacturers requesting approval to bid alternate products as equal must submit information as required by Section 01600 of these specifications, establishing the alternate product as an equal to the specified product, in respect to the performance, testing and all other criteria as noted in this specification and associated drawings and plans.
- C. The Bullet/Blast Resistant Aluminum Windows shall be shipped factory glazed.

1.02 Related Work

1.03 Items Furnished But Not Installed

- A. Bolts and anchors necessary to comply with blast analysis performed in Section 1.05.B.

1.04 Items Installed But Not Furnished

1.05 Testing and Performance Requirements

- A. Ballistic Testing
 1. Testing shall conform to UL-752, Standard for Bullet Resisting Equipment. For this application all components shall meet or exceed the requirements of UL 752 Level_____.
(Note to specifier: Insert desired protection Level 1-3).
 2. All aluminum members shall have ballistic improvements so as to provide complete protection against penetration of a projectile as described by UL 752.
 3. Ballistic Testing shall be conducted by H.P. White Laboratory (or an approved equivalent independent testing laboratory).
 4. Proof of certification shall be made available if requested.
- B. Blast Certification
 1. Unit shall be blast approved in accordance with GSA blast criteria Level C (4 psi) or Level D (10 psi). *(Note to specifier: Select desired level. If greater protection is required, contact United States Bullet Proofing at 800-363-8328).*
 2. Blast testing shall be conducted on a test specimen by an independent blast testing facility. Proof of certification shall be made available upon request.

3. Analysis shall be performed for each application of this window to ensure frame is properly anchored to structure. Provide analysis upon request.

C. Environmental Requirements

1. Air Infiltration Test - Air filtration shall not exceed .09 cfm per square foot with a pressure differential of 6.24 psf, equal to 50 mph wind (ASTM E283-99).

2. Water Resistance Test - No uncontrolled water penetration shall occur when subjected to both a static and dynamic water penetration test with a pressure differential of 8 psf, equal to 56 mph wind (ASTM E331-00, ASTM E 547-00, and AAMA 501.1).

3. Uniform Load Structural Test - Deflection during a Uniform Load Structural Test shall not exceed 0.01" when tested at 60.0 psf (positive) and 60.0 psf (negative) when held in test for 10 seconds (ASTM 330-97).

4. Condensation Resistance Factor – With window closed and locked, Condensation Resistance Factor (CRF) shall not be less than 55.

1.06 Quality Assurance

- A. Provide test reports from nationally recognized testing laboratories, as required, certifying the performance requirements specified in Section 1.05 when requested.
- B. Drawings and specifications are based on United States Bullet Proofing Model USAW500 bullet/blast window system. Whenever substitute products are to be considered, supporting technical literature, samples, drawings and performance data must be submitted ten days prior to bid in order to make a valid comparison of products involved.
- C. During production of these windows, the manufacturer shall make his facilities available for inspection by representatives of the owner to verify compliance with drawings and specifications.
- D. The manufacturer shall maintain on staff, a professional engineer, licensed by at least one of the fifty states.

1.07 References

1.08 Submittals

- A. Submit under provisions of Section 01300.
- B. Shop Drawings
- C. Quality Assurance Submittals. Submit as requested per Section 1.05

1.09 Delivery Storage and Handling

- A. Each Bullet/Blast Resistant Aluminum Window or Windows shall be securely crated to prevent damage during shipment. Each box shall be marked with the identification of the unit and the shipping address. The weight and cubes shall be indicated. Each box is shall be marked with "Up" arrows, indicating how the box it to be transported and stored.
- B. Crated Windows shall not be stored for long periods of time. If long storage is unavoidable due to delay in construction schedules, the crated windows shall be placed in a dry warehouse with moderate temperatures. (High temperatures and humidity can cause formation of vapor inside the wrapping, resulting in oxidation or corrosion of parts). All boxes shall be placed in the upright position as indicated by the up arrows. They shall not lean against a wall. The boxes shall not be placed in close proximity of new cement or plaster walls.
In the event that water penetrates the storage space, the units shall be unboxed to prevent internal damage.

1.10 Warranties

- A. Bullet/Blast Resistant Aluminum Windows
 - 1. All necessary replacement of parts and adjustments not occasioned by accident or misuse shall be made at the vendor's expense when notified within 30 days after customer receipt of product. All products are warranted for a period of one year from the date of customer receipt. During warranty period, all defects not caused by attack, accident or misuse through fault or negligence by the customer shall be adjusted or replaced at the vendor's expense (excluding transportation costs).
- B. Total Window System
 - 1. The contractor shall assume full responsibility and warrant for one year the

satisfactory performance of the total window installation which includes that of the windows, hardware, glass, glazing, anchorage and setting system, sealing, flashing, etc, as it relates to air, water and structural adequacy as called for in the specifications and approved shop drawings.

2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the contractor at his expense during the warranty period.

PART 2 PRODUCTS

2.01 Material

- A. Aluminum
 1. All aluminum extrusion shall be 6063T5 alloy and temper or equal or with a minimum tensile strength of 22.0 ksi and a yield strength of 16.0 ksi.
- B. Fasteners

All fasteners shall be zinc coated. There shall be no exposed fasteners.
- C. Gasket Material
 1. Rubber - The glazing gasket material shall be a composition of Thermoplastic Elastomer (TPE 65AB) and Polyolefin Foam Concentrate. (Resulting in a 55 to 65 Shore "A" durometer).
 2. Tape – Double-faced vinyl glazing tape shall be tested and approved to AAMA 810.1-92 expanded cellular glazing tapes.
 3. Silicone – Structural silicone sealant shall comply with ASTM C920-02.
- D. Glass and Glazing
 1. The framing system shall be capable of accepting various thickness, ranging from ¼" to 1 ¼", thus allowing for further upgrades of ballistic and blast protection.
 2. The glazing supplied shall have a UL 752 rating of Level _____ as certified by an independent testing laboratory. *(Note to specifier: Fill in desired protection level).*
 3. The glazing shall be _____
(Note to specifier: Glazing is available in

glass clad poly-carbonate, polycarbonate, all glass, and thermally insulated glass).

- E. Hardware
 1. Hinges - A stainless steel 4-bar hinge shall be utilized to allow operation of the window.
 2. Locks – Locking mechanism shall be: _____. *(Note to specifier: Numerous locking mechanisms are available – contact factory at 800-363-8328 for information).*
 3. Operators – Operating mechanism shall be: _____. *(Note to specifier: Numerous operating mechanisms are available that can be mechanical, electrical and can allow increased security to prevent entry when open – contact factory at 800-363-8328 for information).*
- F. Thermal Barrier

Perimeter framing and sash shall have barrier material consisting of poured-in-place, two-part polyurethane. A non-structure thermal barrier is not acceptable.

2.02 Fabrication

- A. General
 1. All aluminum frames shall have a minimum wall thickness of 0.125 inches.
 2. All fasteners shall be concealed on the unexposed sides of the frame. The visible front and back portions of the frame shall have a smooth appearance.
 3. Mechanical fasteners, welded components and hardware items shall not bridge thermal barriers. Thermal barriers shall align at all frame and sash corners.
- B. Frame
 1. Frame size shall be 2" x 3 ½" standard.
 2. All joints and connections shall be tight providing hairline joints and true alignment of adjacent members.

C. Sash
Each corner shall be mitered, reinforced with an extruded aluminum corner key, hydraulically crimped, and "cold-welded" with epoxy adhesive.

D. Glazing
Units shall be factory glazed utilizing the Gasket Material noted in 2.01.C.

E. Screens (Optional)
1. Screen frames shall be extruded aluminum.
2. Screen mounting holes in the window frames shall be factory drilled.
3. Screen mesh shall be aluminum or fiberglass

D. Finish
1. Anodic
a. Finish all exposed areas of Bullet/Blast Resistant Aluminum Windows and components with electrolytically deposited color in accordance with Aluminum Association designation:

AA-_____

Select from Below:

Clear	AA-M12-C22-	AAMA 607.1
Anodized	A31/41	
Bronze	AA-M12-C22-	AAMA 608.1
Anodized	A34/44	

Color shall be: _____

2. Organic
a. Finish all exposed areas of Bullet/Blast Resistant Aluminum Windows and components with:

Select from Below:

70% Kynar-Base	AA-M10-	AAMA 2605
Duranar or	C41-R1X	ASCA 96
Fluoropon		

Siliconized	AA-M10-	AAMA 2603.
Polyester Baked	C41-R1X	
Enamel		

Color shall be: _____
(Note that if custom color is desired, a color sample will be required for color-matching. For a complete summary of Architectural Coatings available, see <http://www.paintandcolor.com/pac/extr.jsp>).

PART 3 EXECUTION

3.01 Installation

- A. Bullet/Blast Resistant Aluminum Windows shall be installed and adjusted by experienced personnel in accordance with approved shop drawings, specifications and manufacturer's instructions.
- B. All items in this section shall be set in their correct location and shall be set level, square, plumb and at proper elevations and in alignment with other work.
- C. Special care shall be taken by the installer to ensure that impact side of the window faces the threat axis.

END OF SPECIFICATION