



SECTION 08 44 13.16 - GLAZED ALUMINUM SECURITY CURTAIN WALLS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Action Submittals:
 - 1. Shop Drawings: Illustrate products, installation, and relationship to adjacent construction.
 - 2. Product Data: Manufacturer's descriptive data and product attributes.
 - 3. Samples: [Selection samples.] [Verification samples.]
- B. Informational Submittals:
 - 1. Certificate of Compliance: Certification that installed products meet specified design and performance requirements.

1.2 QUALITY ASSURANCE

- A. Installer Qualifications: Firm specializing in work of this Section with minimum [2] [] years' experience.

1.3 WARRANTY

- A. Manufacturer's one year warranty against defects in materials and workmanship.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on products by U.S. Bullet Proofing, Upper Marlboro MD 20774 Tel: 301-218-7920 Fax: 301-218-7925, www.usbp.com, email: info@usbp.com
- B. Substitutions: [Refer to Division 01.] [Not permitted.]

2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: System design to be performed by qualified professional engineer licensed in State of [].
- B. Structural Performance: Design and size components to withstand the following load requirements without damage or permanent set:
 - 1. Design Wind Loads: [As indicated on Drawings.] [].
 - 2. Movement: Ambient temperature range of [120] [] degrees F and a surface temperature range of [160] [] degrees F.
 - 3. Uniform structural loading: No glass breakage or permanent damage to fasteners or system components, tested to ASTM E330/E330M at [1.5] [] times design pressure.
 - 4. FEMA361/ICC-500 Tested.
- C. Ballistics Performance: Installed bullet-resistant glazing shall withstand ballistic impact loads and forces without damage to the glazing beyond that allowed by referenced standards.

1. Ballistic Level: Pass UL 752 Level [1] [2] [3] [4] [5] [6] [7] [8].

D. Blast Resistance:

Design Parameters vary for Project and should be determined by a qualified blast consultant based on the Owner's and tenant's requirements.

Retain appropriate "Hazard Rating" below if blast resistance is required. Obtain peak pressure, impulse or duration, and hazard and protection criteria conformance from the building team's engineers and blast consultant's calculations.

1. Hazard Rating: [No hazard] [Minimal hazard] [Very low hazard] [Low hazard] [High hazard] according to ASTM F 1642.
2. Peak Pressure: [].
3. Positive Phase Impulse: [].

- E. Water Penetration: No uncontrolled water leakage, tested to ASTM E331 at minimum static air pressure differential of [6.24] [10.0] [] PSF.

- F. Energy Performance: Certify and label energy performance for fixed glazing and framing areas per NFRC as follows:

See Climate Zone map at <https://codes.iccsafe.org/content/IECC2021P2/chapter-3-ce-general-requirements>.

Options below, in order, are for Climate Zones 0, 1, 2, 3, 4, 5, 6, 7, and 8 per ASHRAE 90.1-19 and 2021 IECC.

1. Thermal Transmittance (U-Factor): U-factor of not more than [0.83] [1.10] [0.83] [0.77] [0.68] [0.68] [0.68] [0.68] [0.68] Btu/sq. ft. x h x deg F per NFRC 100[or other nationally recognized accreditation organization standard acceptable to authorities having jurisdiction].

First option below is ASHRAE 90.1-19 limit.

2. Air Infiltration: Maximum air leakage through fixed framing and glass areas of [0.4] [] cfm/sq. ft. of fixed wall area per NFRC 400.

Options below, in order, are for Climate Zones 0, 1, 2, 3, 4, 5, 6, 7, and 8 per ASHRAE 90.1-19 and 2021 IECC.

3. Solar Heat Gain Coefficient: SHGC of not more than [0.22] [0.23] [0.25] [0.25] [0.36] [0.36] [0.38] [0.40] [0.40] per NFRC 200.

2.3 CURTAIN WALL SYSTEM

- A. Type: Flush-glazed, thermally broken, extruded aluminum framed [blast-resistant] [and] [ballistic-resistant] curtain wall.
1. Product: Model USAW-400.

Framing will accommodate glazing from 1 inch to 2-3/8 inch thickness.

2. Framing: 2-1/2 x 4-1/2 inch size, designed to receive [1] [] inch ballistics-resistant glazing retained mechanically with gaskets on four sides.

2.4 [BALLISTICS-RESISTANT GLAZING]

- A. Thicknesses indicated are minimums. Provide ballistics-resistant glazing in thicknesses as necessary to comply with requirements indicated.

- B. Form: [Laminated glass per ASTM C1172] [Glass-clad polycarbonate per ASTM C1349] [Polycarbonate sheet] [Laminated polycarbonate] [complying with safety glazing requirements].
- C. Bullet Resistant Glazing: Pass UL 752 Level [1] [3]

Retain desired subparagraph below. Abrasion resistant surface coating below is optional for Levels 1 and 2; standard for Level 3.

- 1. Level 1 Form: [Laminated polycarbonate/acrylic/polycarbonate] [Acrylic sheet] [Glass-clad polycarbonate per ASTM C1349] [All-Glass]
- 2. Level 2 Form: [Laminated polycarbonate/acrylic/polycarbonate] [Acrylic sheet] [Glass-clad polycarbonate per ASTM C1349] [All-Glass]
- 3. Level 3 Form: [Laminated multi-ply polycarbonate] [Acrylic sheet] [Glass-clad polycarbonate per ASTM C1349] [All-Glass].
- 4. Level [] Form: [].

2.5 ACCESSORIES

- A. Glazing Accessories: Specified in Section 08 80 00.
- B. Anchors: Series 316 stainless steel.
- C. Concrete and Masonry Inserts: Hot-dip galvanized cast-iron, malleable-iron, or steel inserts, complying with ASTM A 123/A 123M or ASTM A 153/A 153M.
- D. Exposed Flashing: Aluminum sheet per Div. 07 Section "FLASHING AND SHEET METAL"; finish to match framing members.
- E. Normally retain 1st option below.
- F. Concealed Flashing: Dead-soft, 0.018-inch-thick stainless steel, ASTM A 240 of type recommended by manufacturer.
- G. Framing Sealants: Manufacturer's standard.
- H. Joint Sealants: For installation at perimeter of framing, as specified in Section 07 92 00.

2.6 MATERIALS

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
 - 1. Extrusions: ASTM B 221.
 - 2. Sheet: ASTM B209.

Level 1 – 3 is all aluminum, requiring no steel inserts. Level 4 – 8 require steel inserts.

- B. Steel Reinforcement: Manufacturer's standard; galvanized or zinc-rich primed finish.
 - 1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
 - 2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.

2.7 FINISHES

Anodized finish is standard. Retain below for anodized finish. Consult manufacturer for available tints.

- A. Anodized Aluminum Finish: AAMA 611, Architectural Class I anodized, [clear.] [dark bronze.]

**** OR ****

PVDF (Kynar) Finish below is optional. Consult manufacturer for available colors. Superior-Performance finish contains 70% PVDF resin. High-Performance finish contains 50% PVDF resin.

- B. [Superior] [High]-Performance Organic Finish: 2-coat PVDF fluoropolymer finish complying with [AAMA 2605] [AAMA 2604] and containing not less than [70] [50] percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 1. Color: [Stock color to be selected from manufacturer's full color range.] [Custom color as directed.]

**** OR ****

Powder coat finish is optional. Retain below for a baked enamel coating system. Consult manufacturer for available colors.

- C. Pigmented Organic Aluminum Finish: AAMA 2603 thermosetting polyester/ [stock color to be selected from manufacturer's full color range.] [custom color as directed.]

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install framing and glazing in accordance with manufacturer's instructions and approved Shop Drawings and Section 08 80 00.
- B. Installation Tolerances: Comply with the following non-accumulating maximum tolerances:
 - 1. Maximum Variation in Diagonal Framing Measurements: 1/8 inch.
 - 2. Offset Between Adjacent Framing Members: 1/16 inch.
 - 3. Maximum Variation from Plumb: 1/8 inch per 12 feet.
 - 4. Alignment: Plus or minus 1/16 inch from door face to face of framing.
 - 5. Sealant space between system and adjacent construction: As indicated but not greater than [1/2] [] inch or less than [1/4] [] inch.

END OF SECTION