(**Specifier Note**: The purpose of this guide specification is to assist the Specifier in correctly specifying bullet and blast resistant aluminum framing and glass assemblies with their installation as windows and storefronts.

The Specifier needs to edit this guide specification to fit the needs of each specific project. References have been made within the text of the specification to MasterFormat section numbers and titles. The Specifier needs to coordinate these numbers and titles with sections included for the specific project.

Throughout the guide specification, there are Specifier Notes to assist in the editing of the file. Brackets have been used to indicate when a selection is required. Contact an Insulgard representative for further assistance with appropriate product selections)

**SECTION 08 43 33.13 – SECURITY STOREFRONTS**

**Insulgard 44/450 Bullet and Blast Resistant Architectural Aluminum Framing**

1. GENERAL
	* + 1. SECTION INCLUDES
				1. [**Bullet**], [**Blast**] ResistantAluminum Storefront Framing
			2. ACTION SUBMITTALS
				1. Refer to Section [**01 33 00 Submittal Procedures**] [**Insert section number and title**].
				2. Product Data: For each type of framing [**and glass**] including manufacturer recommended installation instructions.
				3. Shop Drawings: Include plans, elevations, sections, details, attachment to other work [**and glazing details for field-glazed units**].
				4. Samples: For each exposed finish.
			3. INFORMATION SUBMITTALS
				1. Product Test Reports: Indicating compliance with requirements
				2. Warranty: Sample of finish warranty
			4. CLOSEOUT SUBMITTALS
				1. Refer to Section [**01 78 00 Closeout Submittals**] [**Insert section number and title**].
				2. Maintenance data.
			5. QUALITY ASSURANCE

(**Specifier Note**: Depending upon the scope of the work it may be appropriate to require the installation of a mock-up at the project site, which can either be part of the work or separate. Indicate the size of mock‑up to be constructed.)

* + - * 1. Mock-up: Install framing assembly at project site. Obtain Architect’s approval prior to proceeding with installation of remaining storefront. Accepted mock-up [**may**] [**may not**] remain as portion of final work.
			1. DELIVERY, STORAGE AND HANDLING
				1. Refer to Section [**01 60 00 Product Requirements**] [**Insert section number and title**].
				2. Protect “windows” and accessories in accordance with AAMA CW-10 "Care and Handling of Architectural Aluminum from Shop to Site" until Substantial Completion.
			2. WARRANTY

(**Specifier Note**: The 5 year finish warranty applies to the Class I anodic finishes and the 10 year applies to the 70% PVDF coating finish.)

* + - * 1. Finish Warranty: Manufacturer’s warranty against deterioration of factory finishes for the period of [**5**] [**10**] years from the date of Substantial Completion.
1. PRODUCTS

(**Specifier Note**: Product information is proprietary to Insulgard Security Products. If additional products are required for competitive procurement, contact Insulgard, Inc. for assistance in listing competitive products that may be available.)

* + - 1. MANUFACTURED UNITS
				1. Basis of Design: 44/450 Architectural Aluminum Framing System by Insulgard Security Products; Phone 800.624.6315; website [www.insulgard.com](http://www.insulgard.com)

Subject to compliance with requirements, manufacturers of products of equivalent design may be acceptable if approved in accordance with [**Section 01 25 00 Substitution Procedures**] [**Insert section number and title**].

* + - * 1. Description

Factory fabricated framing constructed from either 6105-T5 or 6005-T5 extruded aluminum with integral weep design to allow water to vent to the exterior along horizontal members.

Dimensions:

Head, Jamb, Sill and Mullion Members: 2-1/2 inches by 4 1/2 inches.

* + - 1. PERFORMANCE CRITERIA
				1. Structural Loading:

Wind Loading: [**Indicate wind required wind load**] [**As indicated on Drawings**]

Design loads

Positive (inward) design pressure of 45 psf

Negative (outward) design pressure of 45 psf

Deflection Limits

Deflection of any framing member in a direction normal to the plane of the wall when subjected to the indicated design loads shall not exceed l/175 of its clear span or ¾ inch, whichever is less.

For cantilevers, the span shall be taken as two times the distance between anchor centerline and end of cantilever.

The deflection shall not exceed 50 percent of the nominal joint width at sealant joints occurring between framing members and adjacent materials, unless otherwise required by sealant manufacturer.

Upon reversal of load direction at magnitudes up to and including 1.5 times design pressures, slippage at fastened and/or clamped connections, shall not exceed 1/8 inch.

Glass deflection at full design load shall not exceed 1/100 of its span, or ¾ inch, whichever is less.

Metal panel deflection shall not exceed 1/90 of its span or ¾ inch, whichever is less. The span shall be taken as the lesser of the distances between the horizontal or vertical support members.

* + - * 1. Thermal Movement

Provide for expansion and contraction of component materials as will be caused by surface temperatures ranging from 20 degrees F to a high temperature of 180 degrees F.

The expansion and contraction caused by temperature differential shall not cause buckling, undue stress on glass, failure of joint seals, undue stress on structural elements, demanding loads on fasteners, reduction of performance, or other detrimental effects.

(**Specifier Note**: DELETE Ballistic and Blast resistance requirements that are not project specific.)

* + - * 1. Ballistic Resistant:

Level [**1**] [**2**] [**3**] in accordance with UL 752 – Testing for Ballistic Resistance for the complete assembly including framing, glazing and panels.

* + - * 1. Blast Resistant

**[GSA Building Classifications [C ] [D ] Blast Resistant in accordance with GSA PBS-P100 Facilities Standards]**

**[Low Level Blast Resistant in accordance with current UFC 4-010-01Unified Facilities Criteria (UFC) DOD Minimum Antiterrorism Standards for Buildings]**

* + - 1. FABRICATION
				1. Tolerances: All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members
			2. FRAMING FINISH
				1. Factory-applied finish:

(**Specifier Note**: SELECT the project specific finish from the following. Baked Enamel may also be available but may require minimum quantities.)

[**Clear Anodic Finish**]: Architectural Class I, clear coating AA-M10C22A41 Mechanical Finish Chemical Finish: etched, medium matte; 0.70 mils minimum complying with AAMA 611 "Voluntary Specification for Anodized Architectural Aluminum"

[**Color Anodic Finish**]: Architectural Class I, color coating AA-M10C22A42/A44 Mechanical Finish Chemical Finish: etched, medium matte; 0.70 mils minimum complying with AAMA 611 "Voluntary Specification for Anodized Architectural Aluminum".

Color: Dark Bronze.

[**PVDF-Based Coating**]: Fluoropolymer finish containing minimum 70 percent PVDF resins, in accordance with AAMA 2605 “Voluntary Specification, Performance Requirements and Test Procedures for Superior Performance Organic Coatings on Aluminum Extrusions and Panels”

Coats: [**two**] [**three**] [**four**] coat system,

Color: [**Insert color**] [**custom**] [**to be selected from manufacturer's full color range**].

* + - 1. GLAZING

(**Specifier Note:** SELECT glazing based on threat level and Architect’s preference.)

* + - * 1. Glazing Material: [**Glass Clad Polycarbonate]** [**Laminated] [Insulated Glazing Unit**]

Ballistic Resistance Level 1: [**MP 1.25 acrylic**] [**3/4 inch MP750 Lexgard**] [**BALULN21 Armor-Gard**]

Ballistic Resistance Level 2: [**HP1.25acrylic**] [**1 inch MP1000 Lexgard**] [**BALULN23 Armor-Gard**]

 Ballistic Resistance Level 3: [**SP1.25 acrylic**] [**1-1/4 inch SP1250 Lexgard**] [**BALULN25 Armor-Gard**]

Blast Resistance [**GSA Level C**] [**UFC Very Low Level** ] Blast Resistance : BLAST-GARD ICP4PS1

Blast Resistance [**GSA Level D**] [**UFC Low Level** ] BLAST-GARD® ICP10PS1

* + - * 1. Glazing gaskets:

Interior: Closed cell neoprene (40-50 Shore “A” Durometer)

Exterior: Solid neoprene (65-75 Shore “A” Durometer)

* + - 1. ACCESSORIES
				1. Anchors: Fully concealed.
1. EXECUTION
	* + 1. PREPARATION
				1. Verify field dimensions of opening prior to fabrication of framing.
				2. Coordinate structural requirements to ensure proper attachment and support.
			2. INSTALLATION
				1. Install framing in accordance with manufacturer's recommendations and approved shop drawings.
				2. Provide required support and securely fasten and set windows plumb, square, and level without twist or bow.
				3. Apply sealant in accordance with window and sealant manufacturer's recommendations as indicated in installation instructions. Wipe off excess, and leave exposed sealant surfaces clean and smooth
			3. PROTECTION
				1. Clean and protect windows from damage during construction operations. If damage occurs, remove and replace as required to provide windows in their original, undamaged condition.

END OF SECTION