**SECTION 08 88 53**

**TSS BR GLAZING - GLASS-CLAD POLYCARBONATE - HEAT STRENGTHENED**

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

The Specifier must 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 must 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 a TSS representative for further assistance with appropriate product selections.)

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

##### Bullet resistant glass-clad polycarbonate with heat strengthened glass.

#### REFERENCES

##### Underwriters Laboratory UL 752-Standard for Bullet Resisting Equipment.

##### ASTM C 1172 - Standard Specification for Laminated Architectural Flat Glass.

#### 1.3 ACTION SUBMITTALS

##### Refer to Section[01 33 00 Submittal Procedures] [Insert section number and title].

##### Product Data: Including manufacturer recommended installation instructions.

##### Shop Drawings: Include plans, elevations, sections, details, attachment to other work.

##### Samples: For each exposed glazing type.

#### 1.4 INFORMATION SUBMITTALS

##### Product Test Reports: Indicating compliance with requirements

##### Warranty: Sample of warranty

#### CLOSEOUT SUBMITTALS

* + - * 1. Refer to Section [01 78 00 Closeout Submittals] [Insert section number and title].
        2. Maintenance data.

1.6 DELIVERY, STORAGE AND HANDLING

* + - * 1. Refer to Section [01 60 00 Product Requirements] [Insert section number and title].
        2. Deliver materials to the project site with the manufacturer’s UL Listed Labels intact and legible. Handle the materials with care to prevent damage. Store materials inside and under cover, stack flat and off floor. Project conditions (temperature, humidity, and ventilation) shall be within the maximum limit recommendations provided by manufacturer. Do not install products stored in conditions outside manufacturer’s recommended limits.

1.7 WARRANTY

* + - * 1. Workmanship Warranty: All materials shall be warranted against defects for a period of[1] year for the date of receipt at the project site. Provide certificates of manufacturer’s standard limited warranty with closeout documents.
        2. Finish Warranty: Manufacturer’s warranty against deterioration of factory finishes for the period of [5] [10] years from the date of Substantial Completion.

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

**PART 2 – PRODUCTS**

2.1 MANUFACTURED UNITS

* + - * 1. Basis of Design:

Subject to compliance with requirements, provide products by the following:

Total Security Solutions, Inc., 935 Garden Lane, Fowlerville, MI 48836, 866 734-6277. Attn: Sales Department, [sales@tssbulletproof.com](mailto:sales@tssbulletproof.com). Web: [www.tssbulletproof.com](http://www.tssbulletproof.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].

2.2 BULLET-RESISTANT GLASS-CLAD POLYCARBONATE GLAZING - HEAT STRENGTHENED GLASS

* + - * 1. Through the design, manufacturing techniques and material application the TSS Bullet Resistant shall be constructed of multiple layers of glass/polycarbonate sheets with the threat layer and secure layer composed of a heat strengthened glass pane and PVB resin interlayer.
        2. Glass shall meet a UL Standard 752 Level 1 thru 3 rating.
        3. Thickness of glass shall range from 3/8” to 1-1/4” thick.

2.3 FABRICATION

* + - * 1. Tolerances: All joints and connections shall be tight, providing hairline joints and true alignment of adjacent members

Product to be meet UL level 1 to 3 protection:

[GCP 750 L/S shall be 3/4” thickness.]

[GCP 1000 L/S shall be 1” thickness.]

[GCP 1250 shall be 1-1/4” thickness.]

* + - * 1. Acrylic: All acrylic pieces shall meet or exceed UL 752 testing for ballistic integrity. All edges of acrylic shall be filed, sanded after cutting to remove rough edges and then polished until “water clear” transparent. All through holes for fasteners shall be 3/8” in diameter and be drilled clean. Chipped edges at through-hole exit points are not acceptable. All acrylic pieces shall be supported in the proper glazing channel designed for this purpose.
        2. Glazing gaskets:

Interior: Closed cell neoprene.

**PART 3 - EXECUTION**

* 1. PREPARATION
     + - 1. Prior to beginning installation, verify that areas have been prepared as required by the Contract Documents and architectural drawings, and Shop Drawings have been approved.
         2. Notify Architect of any unsatisfactory preparation that is responsibility of others.
         3. Clean and prepare all surfaces per manufacturers recommendations as required for achieving the best results for the substrate under the project conditions.
         4. Do not begin installation of material until all unsatisfactory conditions have been resolved and approved by Architect.

3.2 INSTALLATION

* + - * 1. Do not begin installation until areas have been verified and surfaces properly prepared in accordance with Drawings.
        2. Install in accordance with manufacturer’s instructions and UL 752. Set all equipment plumb.
        3. Apply sealant in accordance with manufacturer's recommendations as indicated in installation instructions.
        4. Remove excess sealant and leave exposed surfaces clean and smooth

3.3 PROTECTION

* + - * 1. Clean and protect material from damage during ongoing construction operations. If damage occurs, remove and replace as required to provide voice ports in their original, undamaged condition.
        2. Inspection and Cleaning: Verify installation is complete and complies with manufacturer’s requirements.
        3. Provide final cleaning of product and accessories, removing excess sealant, labels and protective covers.
        4. Touch-up, repair or replace damaged products prior to Substantial Completion.

**END OF SECTION**