

## **FRAGMENT (SHRAPNEL) RESISTANT COMPOSITE FRAG-STOP FS-1**

### **PART 1 GENERAL**

#### **1.1 REFERENCE**

The publications below form a part of this specification.

MIL-STD-662F & MIL-P-46593A

American Society for testing and materials ASTM E119-00a, STANDARD TEST FOR ONE HOUR FIRE RATING OF BUILDING CONSTRUCTION AND MATERIALS

#### **1.2 SUBMITTALS**

The following shall be submitted in accordance with Division 1 and the SPECIAL CONTRACT REQUIREMENTS: Submit for approval prior to fabrication catalog cuts, brochures, specifications, Current test reports from a recognized testing laboratory verifying that the submitted material meets or exceeds the "ballistic limits" as later specified based on MIL-STD-662F and MIL-P-46593A. Proof of possession of PRODUCT LIABILITY INSURANCE in an amount not less than five million U.S. dollars, and printed data in sufficient detail to indicate compliance with the contract documents and the manufacturer's instructions for the installation of the fragment resistant composite. Furnish verification of compliance with ASTM E119-00a ONE HOUR FIRE RATING from a recognized testing laboratory.

#### **1.3 DESIGN - PURPOSE**

Through the design, manufacturing technique and material application the Fragment Resistant Composite shall be of the " non-ricochet type ". This design is intended to permit the encapture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration. The purpose of this product is to offer an enhanced protection level against simultaneous multiple shot hand gun attacks and fragmentation (shrapnel) protection from blasts.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

Deliver the materials to the project and handle the material with care to prevent damage. Store the materials inside under cover, stack flat and off the floor.

#### **1.5 WARRANTY**

All materials and workmanship shall be warranted against defects for a period of two (2) year from the date of receipt at the project site.

### **PART 2 PRODUCTS**

#### **2.1 FRAGMENT RESISTANT COMPOSITE MATERIAL**

The panels shall be made of multiple layers of starch-oil woven roving cloth impregnated with a thermoset polyester resin and compressed into flat rigid sheets. The production technique and materials used shall provide the controlled internal delamination to permit the encapture of a penetrating projectile.

**FRAGMENT (SHRAPNEL) RESISTANT COMPOSITE FRAG-STOP FS-1 cont.**

The Composite panels shall be Frag-Stop FS-1 manufactured by Armortex, Schertz, Texas. Phone: (210)-661-8306, (800)-880-8306, Fax: (210)-661-8308.

**2.2 SECURITY LEVEL**

The Fragment Resistant Composite must have a "Ballistic Limit" not less than 1675 fps when tested to the MIL-STD-662F using the .22 Cal. projectile as specified in MIL-P-46593A. The test shall use 12" x 12" test samples, averaging 6 shots or more and can not have a velocity spread greater than 90 fps.

**2.3 SUBSTITUTIONS**

Other Composite products are acceptable if in compliance with all requirements of this specification. Alternate products must be submitted to the architect for approval two weeks prior to bidding.

**2.4 LABELING**

Each panel shall be affixed with a label indicating the manufacturer, product designation, the testing laboratory certifying the product, MIL-STD-662F, MIL-P-46593A, .22 Cal and the products "Ballistic limit" given in feet per second.

**PART 3 EXECUTION**

**3.1 SUPPORTING MEMBERS**

Prior to installing the shrapnel resistive material, the contractor shall verify that all supports have been installed as required by the contract documents and the architectural drawings.

**3.2 JOINTS**

All joints shall be reinforced by a back-up layer of the same material. The resistance level of the joint, as reinforced, shall be at least equal to that of the panel. Minimum width of reinforcing layer at joint shall be 4". ( 2" on each panel or a 2" minimum overlap)

**3.3 APPLICATION**

Armor shall be installed in accordance with the manufacturer's printed recommendations. Armor panels shall be adhered using an industrial adhesive, mastic, screws or bolts. Method of application shall maintain it's protective integrity at junctures with the concrete floor slab, the concrete roof slab, the door frames, the window frames, and all required penetrations.

**\*\* End of Section \*\***