SECTION: 13 4713 – UL 752 – LEVEL 7 BULLET-RESISTANT FIBERGLASS PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions.

1.2 REFERENCES

A. Underwriters Laboratories:
   1. UL 752 Specifications and Ammunition, 11th Edition, Standard for Bullet Resisting Equipment published September 9, 2005, revised December 21, 2006, Level 7

B. American Society for Testing and Materials:
   1. ASTM E119-98 Standard Test for One-Hour Fire-Rating of Building Construction and Materials
   2. ASTM F1233-98 Standard Test Method for Forced Entry Testing of Materials/Assemblies

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 13 4713 and the SPECIAL CONTRACT REQUIREMENTS (Submit for approval prior to fabrication samples, brochures, specifications):

A. **UL LISTING Verification** and **UL752 Current Test Results** as provided by Underwriters Laboratories.
B. Printed data in sufficient detail to indicate compliance with the contract documents.
C. ASTM E119-98 One-Hour Fire Rating of Building Construction and Materials.
D. ASTM F1233-98 Standard Test Method for Forced Entry Testing of Materials/Assemblies.
E. Manufacturer's Instructions for installation of Bullet Resistant Fiberglass Panels.

1.4 DESIGN

A. Through the design, manufacturing technique and material application the Bullet Resistant Fiberglass 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.

1.7 DELIVERY, HANDLING, AND STORAGE

A. Deliver the materials to the project with the manufacturer's **UL LISTED Labels** intact and legible.
B. Handle the material with care to prevent damage. Store the materials inside under cover, stack flat and off the floor.

1.8 WARRANTY

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

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Acceptable Manufacturers:
1. Waco Composites, Ltd., Waco, TX 76710, fax: 254-752-3634, 254-752-3622
email: sales@armorcore.com

2.2 MATERIAL

A. The panels shall be made of multiple layers of woven roving ballistic grade fiberglass 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.
B. Bullet Resistant Fiberglass panels: 1-1/8” nominal thickness, and 11.7 lbs. per sq. ft. nominal weight.

2.3 SECURITY LEVEL

A. The Bullet Resistant Fiberglass will be rated and tested for UL752 **Level 7**.

PART 3 - EXECUTION

3.1 SUPPORTING MEMBERS

A. Prior to installing the bullet 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

A. All joints shall be reinforced by a back-up layer of bullet resistive material. The bullet resistance 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-inches (2” on each panel or a 2” minimum overlap).

3.3 APPLICATION

A. 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 the bullet resistive rating at junctures with the concrete floor slab, the concrete roof slab, the bullet resistive door frames, the bullet resistive window frames, and all required penetrations.

END OF SECTION 13 4713