SECTION 06610

GLASS-FIBER-REINFORCED PLASTIC GRATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY:

A. Section Includes:
   1. Molded, glass fiber reinforced plastic gratings and accessories.

1.3 QUALITY ASSURANCE

A. Standards: "Guidelines and Recommended Practices for Fiberglass (Composites) Reinforced Plastic Architectural Products" as prepared by Composites Fabricators Association

1.4 SUBMITTALS:

A. Product Data: For the following:
   1. Fiberglass gratings.
   2. Fiberglass Clips and anchorage devices for gratings.

B. Shop Drawings: Detail fabrication and installation of gratings.
   1. Include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE:

A. Manufacturer Qualifications: Firm with a demonstrated capability to produce glass fiber reinforced plastic products of quality and scope required for this Project and actively involved in glass fiber reinforced plastic production. Manufacturer must have sufficient production capacity to produce, transport, and deliver required gratings without causing delay in the Work.

1.6 DELIVERY, STORAGE, AND HANDLING:

A. Delivery and Handling: Handle and transport gratings to avoid stresses or damage.

B. Job-Site Storage: Store gratings to protect from contact with soil, staining, and physical damage.
   1. Store gratings with non-staining resilient supports at same positions as when transported.
   2. Store gratings on firm, level, and smooth surfaces.
   3. Place stored gratings so that identification marks are readily accessible.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements provide glass fiber reinforced plastic gratings by one of the following:
   1. Fibergrate Composite Structures; Fibergrate Micro-Mesh Grating
   2. American Grating, LLC
   3. IKG Fiberglass Systems
   4. Strongwell Chatfield Division

2.2 MATERIALS

A. Resin: Manufacturer's standard polyester resin complying with requirements.

B. Physical Properties: Glass fiber reinforced plastic gratings shall meet the following Physical Properties:
   1. Tensile Strength: 12,000 psi
   2. Flexural Strength: 19,000 psi
   3. Flexural Modulus: 120,000 psi
   4. Impact Strength: 16 ft.ln./sq.inch
   5. Barcol Hardness: 35-60
   6. Glass Content: 35% by weight, maximum
   7. Flammability: Class 1 (less than 25)

2.3 FABRICATION

A. Fabrication: Fiberglass reinforcement shall consist of glass fiber-reinforced polyester composite with minimum glass content and thickness to meet structural design. All stiffeners shall be fiberglass.

2.4 GRATING

A. Design based on Micro-Mesh Grating by Fibergrate. Equivalent products from other manufacturers will be considered.

B. I-Bar Fiberglass Grating:
   1. Panel Size: 2' X 2' removable panels
   2. Bar Spacing: ¾" o.c. each way
   3. Bearing Bar Depth: 1-1/2 inches
   4. Bearing Bar Flange Width: 1/4 inch
   5. Traffic Surface: Grit texture.

C. Fabricate cutouts in grating sections for penetrations indicated. Edge-band openings in grating that interrupt four or more bearing bars with bars of same size and material as bearing bars.

D. Grating shall be minimum of 25 percent and maximum of 35 percent corrosion resistant glass content by weight as determined by ASTM D2584.

E. All cut surfaces, scores, or holes shall be sealed with catalyzed resin sealant with chemical resistance characteristics equal to or greater than resin used in original fabrication of grating panel.

F. Standard stock and custom end pieces to have continuous edge bars on all 4 sides.

2.5 SOURCE QUALITY CONTROL

A. Establish quality control program for manufacturing glass fiber reinforced plastic gratings to monitor glass content, spray rate, grating weight of slurry, product physical properties, anchor pull off and shear strengths, and curing period and conditions.
   1. Testing materials and inspecting production techniques are responsibility of manufacturer.
   2. Test inserts and anchors to establish test data to use in design.

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to installing gratings, inspect site dimensions affecting erection of glass fiber reinforced plastic gratings. Bring to Contractor's attention any discrepancy between design dimensions and field dimensions that could adversely affect installation. If discrepancies do exist, do not proceed until corrected or until installation requirements are modified as acceptable to Architect.

3.2 ERECTION

A. Fiberglass Gratings: Comply with recommendations of grating manufacturer, including installation clearances and standard anchoring details.
   1. Attach removable units to supporting members with type and size of clips and fasteners indicated or, if not indicated, as recommended by grating manufacturer for type of installation conditions shown.

B. Fastening: Fasten glass fiber reinforced plastic grating in place by bolting.

3.3 CLEANING

A. General: Perform cleaning procedures as recommended by glass fiber reinforced plastic manufacturer.
   1. Prevent damage to glass fiber reinforced plastic grating surfaces and to adjacent materials.

END OF SECTION 06610