SECTION 13 49 23

INTEGRATED RFI/EMI SHIELDING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Architecturally integrated RFI/EMI wall shielding

B. Related Sections:
   1. Section 09 29 00 - Gypsum Board: Interior finish of shielding surfaces.
   2. Division 23 - Electrical.

1.02 REFERENCE STANDARDS

A. American National Standards Institute:
   1. ANSI A250.4 - American National Standard Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.

B. American Welding Society:
   1. AWS A5.8/A5.8M - Specification for Filler Metals for Brazing and Braze Welding.
   2. AWS D1.1/D1.1M - Structural Welding Code - Steel.
   3. AWS D9.1M/D9.1 - Sheet Metal Welding Code.

C. ASTM International:
   1. ASTM A568/A568M - Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
   2. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength, Low Alloy, and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardened.
   3. ASTM A1011/A 011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low Alloy and High-Strength Low-Alloy With Improved Formability.
   4. ASTM B 94 - Standard Specification for Copper-Beryllium Alloy Plate, Sheet, Strip, and Rolled Bar.

D. IEEE 299 - IEEE Standard Method for Measuring the Effectiveness of Electromagnetic Shielding Enclosures.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate shielding protection details with other work supporting, adjoining, or fastening to radiation protection work.
   2. Coordinate with stud system for attachment of finish material.
   3. Coordinate shield grounding per detail shown on Electrical Drawings.

B. Preinstallation Meeting: Convene one week prior to commencing work of this section.

C. [Sequencing:]

D. Scheduling:

1. Schedule installation immediately prior to installation of wearing surfaces where occurring.

1.04 [SUSTAINABLE CHARACTERISTICS]

A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design compliance.

B. Materials and Resources Characteristics:
   1. [Recycled Content Materials: Furnish materials with maximum available recycled content including:

SPEC NOTE ***List materials specified in this section required to have recycled content.***

      a. Steel must have a minimum of 65 percent post-consumer recycled content and 20 percent postindustrial recycled content
      b. [_____.]
   2. [Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.]

SPEC NOTE ***List materials specified in this section required to be regional materials.***

      a. [_____.]

1.05 SUBMITTALS

A. See Section 01 33 00 - Submittal Procedures, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.

3. Installation methods.

1.06 [SUSTAINABLE DESIGN SUBMITTALS]

A. Section 01 35 63 - Sustainability Project Requirements: Requirements for sustainable design submittals.

B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
   1. Materials Resources Certificates:
      a. Certify source and origin for [salvaged] and] [reused] products.
      b. Certify recycled material content for recycled content products.
      c. Certify source for regional materials and distance from Project site.

C. Product Cost Data: Submit cost of products to verify compliance with Project sustainable design requirements. Exclude cost of labor and equipment to install products.
   1. Provide cost data for the following products:
      a. Salvaged products.
      b. Reused products.
      c. Products with recycled material content.
      d. Regional products.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

PART 2 PRODUCTS

2.01 SHIELDING COMPONENTS

A. Wall Shielding -
   1. Description:
      a. Electro statically galvanized steel wire cloth, 48-inch-wide roll.
      b. Wire Diameter: 0.0140.
      c. Opening Size: 24 openings per inch by 24 openings per inch.
   2. Supplier: TWP, Inc.; or equal.

2.02 SHIELDING ACCESSORIES

A. Fabric Tape:
   1. Description: One-inch wide, high conductivity, high flexibility nickel, copper and cobalt coated nylon ripstop fabric tape with conductive adhesive.
   2. Product: Less EMF Inc.'s "Ni/Cu/Co Fabric Tape, Cat. #A225"; or equal.

B. Fasteners: Use materials that are galvanically similar to the material being fastened.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Run screening slab to slab on all 4 walls with each mesh panel overlapping the next by 3". Fasten mesh as detailed on drawings.

B. Use widest practicable widths to minimize the number of joints.

C. Seal gaps, seams, and edges of shielding fabrics with fabric tape

3.04 CLEANING

A. Clean completed products of dirt, grease, and other contaminants.

3.05 PROTECTION

A. See Section 01 76 00 - Protecting Installed Work.

B. Protect installed products until completion of project.

C. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION