ECKEL Eckoustic Functional Panel (EFP) Specification

SECTION 09840

PERFORATED METAL ACOUSTICAL PANELS

1 GENERAL

1.1 SECTION INCLUDES

1.1.A Sound absorptive ceiling panels.

1.1.B Sound absorptive wall panels.

1.1.C Miscellaneous accessories.

1.2 RELATED SECTIONS

1.2.A Section 09800- Acoustical Treatment

1.2.B Section 09840- Acoustical Wall Treatment.

1.2.C Section 09510- Panel Acoustical Ceilings

1.3 REFERENCES

1.3.A ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2000.

1.3.B ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2000.

1.3.C ASTM E 795 - Standard Practices for Mounting Test Specimens during Sound Absorption Tests; 2000.

1.4 SUBMITTALS

1.4.A Submit manufacturer's recommended installation instructions and documentation certifying conformance with specified performance requirements.

1.4.B Shop Drawings: Submit drawings indicating layout for all areas to receive work of this section, including locations of light fixtures, ceiling diffusers, and grilles. Indicate pattern of units, cut units, details, and coordination requirements for work of other sections.

1.4.C Samples: Submit for approval two samples of sound absorptive panel and suspension systems, not less than 12 inches (305 mm) by 18 inches (457 mm) in size and demonstrating colors, textures, and finishes that will be provided in the finished work.

1.5 QUALITY ASSURANCE

1.5.A Installer Qualifications: Installers shall have demonstrated experience in assembly and installation of products similar to those specified in this section.

1.6 DELIVERY, STORAGE, AND HANDLING

1.6.A Deliver materials in manufacturer's original unopened and undamaged packages with labels legible and intact.

1.6.B Store materials in unopened packages in a manner that will avoid damage from the environment and from construction operations.

1.6.C Handle in accordance with manufacturer's instructions.

1.7 ENVIRONMENTAL REQUIREMENTS

1.7.A Do not begin installation of acoustic panels until building has been enclosed and environmental conditions approximate interior conditions that will prevail when building is occupied.

2 PRODUCTS

2.1 MANUFACTURERS

2.1.A Acceptable Manufacturer: Eckel Industries, Inc., Acoustic Div., which is located at: 155 Fawcett St. ; Cambridge, MA 02138-9990; Tel: 617-491-3221; Email: request info (eckel@eckelUSA.com); Web: www.eckelUSA.com

2.1.B Requests for substitutions will be considered.

2.2 ACOUSTIC PANELS

2.2.A Acoustic Panels: Eckel Eckoustic Functional Panels.
- 2.2.A.1 Panel Thickness: 2.75 inches (70 mm) "V" ridged facing.
- 2.2.A.2 Width: 30 inches (760 mm).

2.2.B Panel Performance:
- 2.2.B.1 Sound Absorption: Provide panels that are certified to meet the following minimum sound absorption for a 30 inch by 120 inch (760 by 3050 mm) panel, encapsulated in a 2.0 mil (0.05 mm) flame guard polyethylene, when tested in accordance with ASTM C 423 and E 795:
  - 2.2.B.1.a 125 Hz: 6.2 sabins.
  - 2.2.B.1.b 250 Hz: 20.5 sabins.
  - 2.2.B.1.c 500 Hz: 35.2 sabins.
  - 2.2.B.1.d 1000 Hz: 34.5 sabins.
  - 2.2.B.1.e 2000 Hz: 31.5 sabins.
  - 2.2.B.1.f 4000 Hz: 33.1 sabins.
  - 2.2.B.1.g NRC: 0.99, minimum.
- 2.2.B.2 Fire: Provide panels that demonstrate the following performance when tested in accordance with ASTM E 84:
  - 2.2.B.2.a Flame Spread: 10 maximum.
  - 2.2.B.2.b Smoke Density: 10 maximum.

2.2.C Panel Construction: Aluminum.
- 2.2.C.1 Facings: 0.032 inch (0.8 mm) aluminum sheet, perforated with 3/32 inch (2 mm) holes on 3/16 inch (4.8 mm) staggered centers; V-ridged on 6-inch (150 mm) centers to a depth of 2-3/4 inches (70 mm).

2.2.C.2 Framing: 0.063 inch (1.6 mm) aluminum, channel shaped; supply two 1/4-20 inch threaded inserts for each framing member for attachment of panel mounting brackets.

2.2.C.3 Brackets: Provide four 11 gage (3 mm) Type 316 stainless steel brackets per unit for attachment to walls and ceilings, providing 4 inches (100 mm) of clearance between back of panel and mounting surface.

2.2.C.4 Finish: Polyurethane enamel paint; factory applied.

2.2.D Acoustical Insulation: 2 inch (50 mm) thick, fine fibered, fibrous glass, having a density of not less than 1.5 pounds per cubic foot (24 kg/cubic m), encapsulated in a 1.5 to 2 mil (0.04 to 0.05 mm) flame guard polyethylene.

2.2.E Anchors and Fasteners: 1/4 inch (6 mm)-20 by 1 inch (25 mm) long bolts to attach mounting brackets to the panels, cadmium plated for steel panels, stainless steel for aluminum panels; corrosion-resistant anchors for fastening brackets to substrate, as recommended by panel manufacturer and approved by Architect.

3 EXECUTION

3.1 EXAMINATION

3.1.A Examine surfaces to receive work of this section. Do not begin installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

3.2.A Install panels on walls and ceilings in locations and in patterns indicated on the drawings.

3.2.B Install each unit as indicated on Architect's drawings and in accordance with manufacturer's printed instructions, using approved anchors and fasteners.

3.3 ADJUST AND CLEAN

3.3.A After installation of acoustic panels, clean all dirty or discolored surfaces, using cleaning materials and methods acceptable to manufacturer. Replace damaged components as directed by the Architect.

3.3.B Remove debris caused by work of this section on a daily basis. At completion of acoustic panel installation, remove all crates, cartons, packages, and debris from the project site.

END OF SECTION