SECTION 098413 - ACOUSTICAL WALL AND CEILING PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Back-mounted hardside acoustical wall panels.
2. Fiberglass acoustic ceiling panels.
3. Modular acoustic ceiling panels.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication and installation details for acoustical wall and geometric sound diffuser panels, including plans, elevations, sections, details, and attachments to other Work.

1. Show orientation of fabric application, pattern matching, and seams.

C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors, textures, and patterns available for facing materials for each type of acoustical wall and ceiling panel indicated. Include samples of installation devices and accessories.

1. Submit one unit of geometric sound diffuser.

D. Product Certificates: Signed by manufacturers of acoustical wall panels and ceiling mounted geometric sound diffuser panels certifying that products furnished comply with requirements.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

F. Product Test Reports: From a qualified testing agency indicating acoustical wall and ceiling mounted geometric sound diffuser panels comply with requirements, based on comprehensive testing of current products.

G. Maintenance Data: Provide maintenance data for acoustical wall panels and facings as specified in Division 1.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing acoustical wall and ceiling panels similar to those indicated for this Project and with a record of successful in-service performance.

B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

C. Source Limitations for Acoustical Wall Panels: Obtain acoustical wall panels and ceiling mounted geometric sound diffuser panels from one source with resources to provide products of consistent quality in appearance and physical properties.

D. Fire-Test-Response Characteristics**:** Provide acoustical wall panels with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical wall panels with appropriate markings of applicable testing and inspecting agency.

1. Flame Spread: 25 or less.
2. Smoke Developed: 450 or less.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect acoustical wall panels from excessive moisture when shipping, storing, and handling. Deliver in unopened bundles and store in a dry place with adequate air circulation. Do not deliver material to building until wet-work, such as concrete and plaster, has been completed and cured to a condition of equilibrium. Protect panel edges from crushing and impact.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not install acoustical wall and ceiling mounted geometric sound diffuser panels until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Air-Quality Limitations: Protect acoustical wall panels and ceiling mounted geometric sound diffuser panels from exposure to airborne odors, such as tobacco smoke, and install panels under conditions free from odor contamination of ambient air.

C. Field Measurements: Verify wall surface dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish surface dimensions and proceed with fabricating acoustical wall and ceiling panels without field measurements. Coordinate wall and ceiling construction to ensure that actual surface dimensions correspond to established dimensions.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Wall Panels: Full-size units equal to 2 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to:

1. Gotterman & Sabo, Inc.
2. Kinetics Noise Control
3. Industrial Acoustics Corp.
4. Lamvin, Inc.
5. Essi Acoustical Products Co.
6. MPC, Inc.
7. Working Walls, Inc.

2.2 ACOUSTICAL WALL AND CEILING PANELS, GENERAL

A. Fabricate panels to sizes and configurations indicated; attach facing materials to cores to produce installed panels with visible surfaces fully covered and free from waves in fabric weave, wrinkles, sags, blisters, seams, adhesive, or other foreign matter.

1. Fabricate back-mounted panels in factory to exact sizes required to fit wall and ceiling surfaces, based on field measurements of completed substrates indicated to receive acoustical panels.

B. Dimensional Tolerances of Finished Units: Plus or minus 1/16 inch (1.6 mm) for the following:

1. Thickness.
2. Edge straightness.
3. Overall length and width.
4. Squareness from corner to corner.
5. Chords, radii, and diameters.

C. Sound-Absorption Performance: Provide acoustical wall panels with minimum noise reduction coefficients of 1.00 for wall panels and .10 for ceiling geometric sound diffuser, as determined by testing per ASTM C 423.

D. Panel Characteristics: Comply with requirements indicated in paragraph 3.5.

1. Back-Mounting Accessories: Manufacturer's standard or recommended accessories for securely mounting panels, of type and size indicated, to substrates provided.

2.3 WALL PANEL ACCESSORIES

A. Provide manufacturer's standard wall panel attachment accessories.

B. Attachment Devices:

1. Impaling Plates: Metal impaling plates mechanically attached to wall according to manufacturer's recommended pattern.
2. Adhesive: Manufacturer's recommended adhesive applied to back of panels in pattern recommended by manufacturer.

C. CEILING SUSPENSION SYSTEM

1. Provide manufacturer's standard eye & cable suspension system.
2. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung.
3. Fasteners: Fasteners recommended by manufacturer for attaching hangers. Fasteners shall be able to support a load equal to 10 times the weight of the ceiling construction.

2.4 ACOUSTIC CANOPIES

A. Basis of Design: HardSide, Hi Impact TAD Panel Cloud as manufactured by Kinetics.

B. Thickness shall be 2 inches (51 mm)

C. Size: As indicated on the drawings up to a maximum 48 inch (1219 mm) x 120 inch (3048 mm) baffle.

D. Core: 2 layers of 6-7 pcf density fiberglass bonded for the required thickness.

E. Edge Detail: Square hardened with non-resin, Class A hardening solution.

F. Facing: 100% polyester fabric, FR 701 Style 2100 by Guilford of Maine .

G. Color: As selected from fabric manufacturer’s full range of colors.

H. Sound Absorption (ASTM C423): Noise Reduction Coefficient as follows:
1. 2” (51 mm) Panel: 1.00, minimum

I. Mounting: Suspension wire, cable, or chain attached to the Zinc plated steel eye screws at the top of each baffle.

2.5 MODULAR ACOUSTIC CEILING SYSTEM

A. Basis-of-Design: Quietspace Frontier, Talus Style as manufactured by Autex Interior Acoustics.

B. Acoustic absorber Frontier fins:

1. As indicated on drawings x 1' nominal depth x 1/2" gauge, spaced at 2’ O.C.

2. *Colors as selected by Architect from manufacturer's full line*
3. *Sound absorption: 3.94/7.87" centers Class B, 11.81" centers Class C*
4. *Fire Rating: 1/2" ASTM E-84-15a Class A, FS:0 - SD:45*
5. *Supply with Quietspace Frontier Connector Clips, Frontier Channel, Frontier Fins.*
6. *Fix with angle clip fasteners appropriate for the substrate.*

C. *Provide hangers as required for complete installation.*[(Addendum, 1)]

2.6 MODULAR ACOUSTIC CEILING SYSTEM

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B. Acoustic absorber Frontier fins:

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2. *Colors as selected by Architect from manufacturer's full line*
3. *Sound absorption: 3.94/7.87" centers Class B, 11.81" centers Class C*
4. *Fire Rating: 1/2" ASTM E-84-15a Class A, FS:0 - SD:45*
5. *Supply with Quietspace Frontier Connector Clips, Frontier Channel, Frontier Fins.*
6. *Fix with angle clip fasteners appropriate for the substrate.*

C. Provide hangers as required for complete installation.[(Addendum 1)]

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and blocking, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting acoustical wall and ceiling panel performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install acoustical wall and ceiling panels in locations indicated with vertical surfaces and edges plumb, top edges level and in alignment with other panels, and scribed to fit adjoining work accurately at borders and at penetrations. Comply with panel manufacturer's written instructions for installation of panels using type of mounting accessories as recommended by manufacturer.

1. Cut units to be at least 50 percent of unit width, with facing material extended over cut edge to match uncut edge. Scribe acoustical wall panels to fit adjacent work. Butt joints tightly.

B. Adhesive to be applied to back of panels in pattern recommended by manufacturer. Any hardware required for adhesive mount shall be supplied by manufacturer.

C. Construction Tolerances: As follows:

1. Variation from Plumb and Level: Plus or minus 1/16 inch (1.6 mm).
2. Variation of Joints from Hairline: Not more than 1/16 inch (1.6 mm).

3.3 CEILING INSTALLATION

A. Immediately before installation, panels shall be stored for a sufficient time to stabilize temperature and humidity conditions ambient during installation and anticipated for occupancy.

B. Comply with manufacturer's written instructions and CISCA's "Ceiling Systems Handbook"

C. Install acoustical panel ceilings to comply with ASTM C 636.

D. Space hangers not more than 48 inches o.c. along each member supported directly from hangers. Provide hangers not more than 8 inches from ends of each member.

E. Install edge trim at perimeter of acoustical ceiling and where necessary to conceal edges of acoustical panels.

F. Install acoustical panels fitted accurately into suspension system runners and edge moldings. Cut panels at borders and penetrations to provide an accurate fit with edges fully hidden from view by suspension system.

3.4 INSTALLATION OF ACOUSTIC CANOPIES AND MODULAR ACOUSTIC CEILING SYSTEM

A. Install in accordance with manufacturer’s instructions.

3.5 CLEANING

A. Clip loose threads; remove pills and extraneous materials.

B. Clean panels with fabric facing, on completion of installation, to remove dust and other foreign materials according to manufacturer's written instructions.

C. Remove surplus materials, rubbish, and debris resulting from acoustical wall panel installation, on completion of the Work, and leave areas of installation in a neat and clean condition.

3.6 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure acoustical wall and ceiling panels are without damage or deterioration at time of Contract Completion.

B. Replace panels that cannot be cleaned and repaired, in a manner approved by Architect, before time of Contract Completion.

3.7 ACOUSTICAL WALL AND CEILING PANEL SCHEDULE

A. Hard Side Acoustical Panels: Manufacturer's standard panel construction consisting of facing material stretched over front face of edge-framed, dimensionally stable, rigid glass-fiber board core and bonded or attached to edges and back of frame; and complying with the following requirements:

1. 2” thick fiberglass.
2. Facing Material: Woven polyester fabric from same dye lot; colors and patterns as selected by Architect from manufacturer's full range. (See drawings)
3. Nominal Core Density: 5 to 7 lb/cu. ft.
4. Nominal Overall Panel Thickness and Noise Reduction Coefficient: 2 inch and not less than NRC .85 per ASTM C 423.
5. Panel Width: As indicated.
6. Panel Height: As indicated.
7. Edge Detail: Square.
8. Class A per ASTM E84.

END OF SECTION 098413

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