SECTION 098436 - SOUND-ABSORBING CEILING UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Shop-fabricated, acoustical panel units tested for acoustical performance.

1. Sound-absorbing ceiling panels set in SAC Grid..
2. Sound-absorbing ceiling baffles, cable suspended.
3. Sound-absorbing ceiling baffles on frame.

B. Related Sections:

1. Section 095113 - "Acoustic Panel Ceilings" for suspended exposed metal grid and suspended acoustical panel ceiling (SAC) systems.

1.2 DEFINITIONS

A. NRC: Noise Reduction Coefficient.

B. SAA: Sound Absorption Average.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

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

1. Include panel edge, core material, and mounting indicated.

B. Shop Drawings: For unit assembly and installation.

1. Include reflected ceiling plans with mechanical and lighting coordination illustrated, elevations, sections, and mounting devices and details.
2. Include details at joints and corners; and details at ceiling intersections and intersections with walls. Indicate panel edge profile and core materials.
3. Include direction of wood-look pattern matching.

C. Samples for Initial Selection: For each type of felt product.

1. Include Samples of hardware and accessories involving color or finish selection.

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2. Color and pattern samples for felt products (3"x3") or standard material sample sizes.

D. Samples for Verification: For the following products:

1. Materials: Full-width by approximately 6-inch to 12-inch long Sample, but not smaller than required to show complete pattern repeat, from dye lot to be used for the Work, and with specified treatments applied. Mark top and face of fabric.
2. Panel Edge: **12-inch-** long Sample(s) showing each edge profile, corner, and finish.
3. Core Material: **12-inch-** square Sample at corner.
4. Mounting Devices: Full-size Samples.
5. Assembled Panels: Approximately **12 by 12 inches**, including joints and mounting methods.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Electrical outlets.
2. Suspended ceiling components above ceiling units.
3. Structural members to which suspension devices will be attached.
4. Items adjacent to, penetrating or covered by units including the following:

a. Lighting fixtures.
b. Mechanical Air outlets and inlets.
c. Alarms.
d. Sprinklers.

5. Show operation of hinged and sliding components covered by or adjacent to units.

B. Product Certificates: For each type of unit.

C. Sample Warranty: For manufacturer's special warranty.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of unit to include in maintenance manuals. Include material manufacturer's written cleaning and stain-removal instructions.

B. Detachment & reinstallation manuals, procedures to access suspended acoustical ceiling & lighting controls above grid or panels.

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1.7 DELIVERY, STORAGE, AND HANDLING

A. Comply with material and unit manufacturers' written instructions for minimum and maximum temperature and humidity requirements for shipment, storage, and handling.

B. Deliver materials and units in unopened bundles and store in a temperature-controlled dry place with adequate air circulation.

1.8 FIELD CONDITIONS

A. Environmental Limitations: Do not install units until spaces are enclosed and weathertight, wet-work (ie painting) in spaces is complete and dry, work at and above ceilings is complete, dusty or dirty work is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

B. Lighting: Coordinate installation with intermingled lighting attached to suspended ceiling system.

C. Air-Quality Limitations: Protect units from exposure to airborne odors, such as tobacco smoke, and install units under conditions free from odor contamination of ambient air.

D. Field Measurements: Verify unit locations and actual dimensions of openings and penetrations by field measurements before fabrication, and indicate them on Shop Drawings.

1.9 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace units and components that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Acoustical performance.
b. Materials sagging, distorting, or releasing from panel edge.
c. Warping of core.

2. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Source Limitations: Obtain each type / style of ceiling unit specified in this section from single source from single manufacturer.

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2.2 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: Units shall comply with "Surface-Burning Characteristics" or "Fire Growth Contribution" Subparagraph below, or both, as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:

1. Surface-Burning Characteristics: Comply with ASTM E84 or UL 723; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

a. Flame-Spread Index: 25 or less.
b. Smoke-Developed Index: 450 or less.

2.3 SOUND-ABSORBING CEILING UNITS

A. Sound-Absorbing Ceiling Panel (Circle Pattern Felt Ceiling Panels): Manufacturer's standard panel construction consisting of facing material Formed felt ceiling panels with circular, dimple shape pressed up into 24"x24" square.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. Acoufelt.com "Tessera" Collection, "Dimple" Design

2. Panel Shape: Circular rings in 24" x 24" square tile.

3. Mounting: Drop in 2' x 2' tile set into 2x2 suspended metal SAC grid system.
4. Core: 12 mm thick 100% polyester Felt formed panel.

a. Fire Tests: ASTM E84-17a Class A

5. Facing Material: Color of dimpled tile profile to be confirmed in submittal.

a. Assume (1) one color for felt panels.

6. Acoustical Performance: Sound absorption NRC of 0.80 according to ASTM C423 for ceiling T-grid (SAC) mounting according to ASTM E795.
7. Nominal Core Thickness: 12 mm (~1/2").
8. Panel Width: 24 inches square.

B. Copy of Sound-Absorbing Baffle Panel (Acoustical Baffles 3" & 4" on Cross Grid): Manufacturer's standard panel construction consisting of facing material laminated to front and back faces and edges of core.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

a. CSI Creative, Soundcore Panels, Woodlite "Grille 002" SUR-FLD-025

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2. Panel Shape: 1" width x 3" and 4" depths as shown on the drawings, up to standard 108" length.
3. Panel Color & Texture: Assume (2) colors to be selected during submittal process from manuf. standard color / wood pattern line options.
4. Mounting: Top-edge mounted with manufacturer's standard attachment rails, running perpendicular to acoustic fins, and surface secured to SAC ceiling grid system.
5. Core: Acoustic Substrate: "Soundcore." Recycled PET acoustic felt. 60% post consumer recycled content and 100% recyclable.

6. Edge Profile: Square.

7. Facing Material: Wood look overlayer on visible edges.
8. Acoustical Performance: Sound absorption NRC of 0.55 - 0.95, depending on configuration, according to ASTM C423 for surface mounting according to ASTM E795.
9. Nominal Core Thickness: 1 inch.
10. Panel Width: As indicated on Drawings.
11. Panel Height: As indicated on Drawings.

C. Sound-Absorbing Baffle Panel (2" x 10" Acoustic Ceiling Baffle): Manufacturer's standard panel construction consisting of facing material laminated to front and back faces and edges of core.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:

    a. Armstrong World Industries, SoundScapes Blades, Wood Looks

2. Panel Shape: Rectangular, 2" x 10".
3. Mounting: Top-edge mounted with manufacturer's standard suspension system, secured to substrate of SAC ceiling grid system above.

    a. Individual Suspension: Aircraft Cable as recommended and supplied by manufacturer.

        1) 4-point hanging kits as needed for recommended spacing of varying lengths of panels. Reference enlarged ceiling plan for layout of baffles. Coordinate with manufacturer for spacing layout in shopdrawings.

    b. Coordinate with metal SAC grid system specified for installation above baffles.

4. Core: Glass-fiber board with recycled content of ~53%..

    a. Flame Spread: ASTM E1264; Class A (UL)
    b. Dimensionally Stability: HumiGuard Plus (Armstrong); inherently Anti-Microbial.

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5. Edge Construction: Manufacturer's standard chemically hardened core with no frame.
6. Edge Profile: Square.

7. Facing Material: Wood look overlay on exposed surfaces.

    a. Finish: Wood look , selected from manufacturer's standard (7) options.
    b. Color: Assume (2) two colors to be selected during submittal review process.
    c. Surface Texture: Fine.

8. Acoustical Performance: Sound absorption NRC of 1.15 according to ASTM C423 for suspended mounting according to ASTM E795.
9. Nominal Overall Panel Thickness: 2 inches.
10. Panel Width: As indicated on Drawings.

11. Spacing: 7" on center, per drawing details.

2.4 FABRICATION

A. Standard Construction: Use manufacturer's standard construction unless otherwise indicated, with facing material applied to face, edges, and back border of dimensionally stable core and with rigid edges to reinforce panel perimeter against warpage and damage.

B. Dimensional Tolerances of Finished Units: Plus or minus **1/16 inch** for the following:

1. Thickness.
2. Edge straightness.
3. Overall length and width.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine panels and mounting hardware, fabricated units, substrates, areas, and conditions for compliance with requirements, installation tolerances, and other conditions affecting unit performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install units in locations indicated. Unless otherwise indicated, install units with edges in alignment with walls and other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.

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B. Comply with manufacturer's written instructions for installation of units using type of mounting devices indicated. Mount units securely to supporting substrate.

C. Replace damaged or broken blades. Remove and replace work that cannot be successfully clean or repaired.

3.3 INSTALLATION TOLERANCES

A. Variation from Alignment with Surfaces: Plus or minus 1/16 inch in 48 inches, noncumulative.

B. Variation from Level or Slope: Plus or minus 1/16 inch.

C. Variation of Joint Width: Not more than 1/16 inch wide from hairline in 48 inches, noncumulative.

3.4 CLEANING

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

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

END OF SECTION 098436

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