

## SECTION 098433 - SOUND-ABSORBING WALL UNITS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section includes shop-fabricated, fabric-wrapped panel units tested for acoustical performance, including:
  - 1. Sound-absorbing wall panels.

## 1.3 DEFINITIONS

- A. NRC: Noise Reduction Coefficient.
- B. SAA: Sound Absorption Average.

## 1.4 REFERENCES

- A. ASTM C423 Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- B. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ASTM E795 Standard Practices for Mounting Test Specimens During Sound Absorption Tests.

## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of fabric facing, panel edge, core material, and mounting indicated.
- B. Shop Drawings: For sound-absorbing wall units. Include mounting devices and details; details at panel head, base, joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate panel edge and core materials.
  - 1. Include elevations showing panel sizes and direction of fabric weave and pattern matching.
- C. Samples for Verification: For the following products, prepared on Samples of size indicated below:

1. Fabric: 12-inch- (300-mm-) square 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- (300-mm-) long Sample(s) showing each edge profile, corner, and finish.
3. Core Material: 12-inch- (300-mm-) square Sample at corner.
4. Mounting Devices: Full-size Samples.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of sound-absorbing wall unit, from manufacturer.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sound-absorbing wall units to include in maintenance manuals. Include fabric manufacturers' written cleaning and stain-removal recommendations.

#### 1.8 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials from same production run that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  1. Fabric: For each fabric, color, and pattern installed, provide length equal to 10 percent of amount installed, but no fewer than 10 yards (9 m).
  2. Mounting Devices: Full-size units equal to 5 percent of amount installed, but no fewer than five devices, including unopened adhesives.

#### 1.9 QUALITY ASSURANCE

- A. Source Limitations: Obtain sound-absorbing wall units from single source from single manufacturer.
- B. Fire-Test-Response Characteristics: Provide sound-absorbing wall units meeting the following as determined by testing identical products by UL or another testing and inspecting agency acceptable to authorities having jurisdiction:
  1. Surface-Burning Characteristics: As determined by testing per ASTM E 84.
    - a. Flame-Spread Index: 25 or less.
    - b. Smoke-Developed Index: 450 or less.
- C. Preinstallation Conference: Conduct conference at Project site.

## 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Comply with fabric and sound-absorbing wall 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.

## 1.11 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install sound-absorbing wall units until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work at and above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Lighting: Do not install sound-absorbing wall units until a permanent level of lighting is provided on surfaces to receive the units.
- C. Air-Quality Limitations: Protect sound-absorbing wall 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 locations of sound-absorbing wall units and actual dimensions of openings and penetrations by field measurements before fabrication.

## PART 2 - PRODUCTS

### 2.1 SOUND-ABSORBING WALL UNITS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide products by Kinetics Noise Control, Inc., or comparable product by one of the following:
  - 1. Essi Acoustical Products.
  - 2. MBI Products Company, Inc.
- B. Sound-Absorbing Wall Panel (WP-1): Manufacturer's standard panel construction consisting of facing material stretched over front face of edge-framed core and bonded or attached to edges and back of frame.
  - 1. Basis-of-Design Product: Kinetics Noise Control, Inc.; HardSide.
    - a. Essi Acoustical Products; Silentspace.
    - b. MBI Products Company, Inc.; Colorsonix.
  - 2. Mounting: Edge mounted with splines secured to substrate.
    - a. Finish Color at Exposed Edges: Match color of facing material.

3. Mounting: Back mounted with manufacturer's standard impaling clips, secured to substrate.
  4. Core: Glass-fiber board.
  5. Edge Construction: Manufacturer's standard chemically hardened core with no frame.
  6. Edge Profile: Square.
  7. Corner Detail in Elevation: Square with continuous edge profile indicated.
  8. Reveals between Panels: Flush reveals.
  9. Facing Material: As indicated on Drawings.
  10. Acoustical Performance: Sound absorption NRC of not less than 1.00 according to ASTM C 423 for Type A mounting according to ASTM E 795.
  11. Nominal Core Thickness: 1 inch (25mm).
  12. Panel Width: As indicated on Drawings.
  13. Panel Height: As indicated on Drawings.
- C. Sound-Absorbing Wall Panel (WP-2): Manufacturer's standard panel construction consisting of facing material stretched over front face of edge-framed core and bonded or attached to edges and back of frame.
1. Basis-of-Design Product: Kinetics Noise Control, Inc.; HardSide.
    - a. Essi Acoustical Products; Silentspace.
    - b. MBI Products Company, Inc.; Colorsonix.
  2. Mounting: Edge mounted with splines secured to substrate.
    - a. Finish Color at Exposed Edges: Match color of facing material.
  3. Mounting: Back mounted with manufacturer's standard impaling clips, secured to substrate.
  4. Core: Glass-fiber board.
  5. Edge Construction: Manufacturer's standard chemically hardened core with no frame.
  6. Edge Profile: Square.
  7. Corner Detail in Elevation: Square with continuous edge profile indicated.
  8. Reveals between Panels: Flush reveals.
  9. Facing Material: As indicated on Drawings.
  10. Acoustical Performance: Sound absorption NRC of not less than 1.00 according to ASTM C 423 for Type A mounting according to ASTM E 795.
  11. Nominal Core Thickness: 2 inch (51mm).
  12. Panel Width: As indicated on Drawings.
  13. Panel Height: As indicated on Drawings.
- D. Sound-Absorbing Wall Panel (WP-3): Manufacturer's standard panel construction consisting of facing material stretched over front face of edge-framed core and bonded or attached to edges and back of frame.
1. Basis-of-Design Product: Kinetics Noise Control, Inc.; High Impact HardSide.
    - a. Essi Acoustical Products; Silentspace.
    - b. MBI Products Company, Inc.; Colorsonix.
  2. Mounting: Edge mounted with splines secured to substrate.

- a. Finish Color at Exposed Edges: Match color of facing material.
  - 3. Mounting: Back mounted with manufacturer's standard impaling clips, secured to substrate.
  - 4. Core: glass-fiber board.
    - a. Core-Face Layer: Manufacturer's standard impact-resistant, acoustically transparent, copolymer sheet.
  - 5. Edge Construction: Manufacturer's standard chemically hardened core with no frame.
  - 6. Edge Profile: Square.
  - 7. Corner Detail in Elevation: Square with continuous edge profile indicated.
  - 8. Reveals between Panels: Flush reveals.
  - 9. Facing Material: As indicated on Drawings.
  - 10. Acoustical Performance: Sound absorption NRC of not less than 1.00 according to ASTM C 423 for Type A mounting according to ASTM E 795.
  - 11. Nominal Core Thickness: 1-1/8 inches (29 mm).
  - 12. Panel Width: As indicated on Drawings.
  - 13. Panel Height: As indicated on Drawings.
- E. Sound-Absorbing Wall Panel (WP-4): Manufacturer's standard panel construction consisting of facing material stretched over front face of edge-framed core and bonded or attached to edges and back of frame.
- 1. Basis-of-Design Product: Autex Composition as manufactured by Autex Industries Limited.
  - 2. Non-woven needle punched polyester containing not less than 60% post-consumer recycled material.
  - 3. 100% polyester fiber without chemical binders and certified low VOC (PET).
  - 4. Color as selected by Architect,
  - 5. NRC 0.40
  - 6. Fire Rating: ASTM E 84: Class A, FS:5, SD:25
  - 7. Thickness as indicated on drawings.

## 2.2 MATERIALS

### A. Core Materials:

- 1. Glass-Fiber Board: ASTM C 612, Type standard with manufacturer; nominal density of 6 to 7 lb/cu. ft. (96 to 112 kg/cu. m) , unfaced, and dimensionally stable, molded rigid board; and with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- 2. Impact-Resistant, Acoustically Transparent, Copolymer Sheet for Face Layer: 1/16- to 1/8-inch- (1.6- to 3.2-mm-) thick layer of perforated, noncombustible, copolymer sheet laminated to face of core.

### B. Facing Material (WP-1, WP-2 and WP-3): Fabric from same dye lot; color and pattern as indicated on Drawings.

- 1. Manufacturer: Guilford of Maine.
- 2. Product Line/Pattern: FR 701.

3. Style Number: 2100 Unbacked.
  4. Color: As indicated on Drawings and as selected by Architect from manufacturer's full range.
  5. Fiber Content: 100 percent post-consumer recycled, woven polyester.
  6. Width: 66 inches (1676 mm).
- C. Mounting Devices: Concealed on back of unit, recommended by manufacturer to support weight of unit, and as follows:
1. Impaling Clips: Manufacturer's standard.

## 2.3 FABRICATION

- A. General: Use manufacturer's standard construction except as 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 warp and damage.
1. Glass-Fiber Board Cores: Chemically harden core edges and areas of core where mounting devices are attached.
- B. Core-Face Layer: Evenly stretched over core face and edges and securely attached to core; free from puckers, ripples, wrinkles, or sags.
- C. Facing Material: Apply fabric facing fully covering visible surfaces of unit; with material stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other visible distortions or foreign matter.
1. Square Corners: Tailor corners.
  2. Fabrics with Directional or Repeating Patterns or Directional Weave: Mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent units.
- D. 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.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine fabric, fabricated units, substrates, areas, and conditions, for compliance with requirements, installation tolerances, and other conditions affecting performance of sound-absorbing wall units.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install sound-absorbing wall units in locations indicated with vertical surfaces and edges plumb, top edges level and in alignment with other units, faces flush, and scribed to fit adjoining work accurately at borders and at penetrations.
- B. Comply with sound-absorbing wall unit manufacturer's written instructions for installation of units using type of mounting devices indicated. Mount units securely to supporting substrate.
- C. Align and level fabric pattern and grain among adjacent units.

### 3.3 INSTALLATION TOLERANCES

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

### 3.4 CLEANING

- A. Clip loose threads; remove pills and extraneous materials.
- B. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 098433

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