SECTION 09845

SOUND ABSORBING, IMPACT RESISTANT FABRIC PANELS (HI IMPACT ABSORBOR™ Panels)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sound Absorbing, Impact Resistant Fabric Panels: Model HI IMPACT ABSORBOR™.

1.02 RELATED SECTIONS

A. Section 09120 – Suspension Framing/Furring for Plaster/Gypsum Board Assemblies
B. Section 09200 – Plaster & Gypsum Board
C. Section 09500 – Acoustic Tile Ceilings: Suspension Systems
D. Division 15 Sections – Mechanical Work
E. Division 16 Sections – Electrical Work
F. Division 17 Sections – Audio, Data, Telecommunication Work

1.03 ALTERNATES

A. Prior Approval: Proposed substitutions for products in this section may be submitted to the architect and acoustical consultant no later than ten (10) working days prior to the bid due date. Substitutions shall only be considered if submitted with complete information including acoustic data and a sample not smaller than 59 cm x 59 cm (23" x 23") showing product design, composition and finish. Acceptance of substituted products is contingent on the architect's and acoustical consultant's approval and the substitution's compliance with all specified criteria. The architect shall approve substitution request via addendum.
B. Unapproved Substitutions. Substitutions not approved via addendum shall not be submitted to the architect or acoustical consultant.

1.04 REFERENCES

A. Local Building Code – Current Edition
B. International Organization for Standardization
   1. ISO 354 Measurement of Sound Absorption in a Reverberation Room
   2. ISO 10534 - Determination of sound absorption coefficient and impedance in impedance tubes - Part 1: Method using standing wave ratio.
   3. ISO 17497-1 Sound-scattering properties of surfaces- Part 1: Measurement of the random-incidence scattering coefficient in a reverberation room.
C. American Society for Testing & Materials (ASTM)
   1. ASTM E 1050-98 - Standard Test Method for Impedance and Absorption of Acoustical Materials Using a Tube, Two Microphones, and a Digital Frequency Analysis System
   2. ASTM C 423 - Sound Absorption & Sound Absorption Coefficients by the Reverberation Room Method
   3. ASTM E 84: Standard Test Method for Surface Burning Characteristics of Building Materials

1.05 SYSTEM DESCRIPTION

A. Design Requirements: Panels shall absorb sound via a porous, rigid fiberglass facing laminated to a semi-rigid fiberglass core that converts sound energy into heat through molecular friction. Panels shall be covered with an acoustically transparent fabric.

B. Performance Requirements
   1. Random Incidence Sound Absorption Coefficients (a): Tested by independent, accredited, NVLAP facility according to ASTM C 423 and ASTM E 795 for an A mounting:

Thickness	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
1-1/8”	0.16	0.24	0.67	1.04	1.13	0.92
2-1/8”	0. 32	0.74	1.17	1.18	1.15	0.97

2. Noise Reduction Coefficient (NRC): Tested according to ASTM C 423 and ASTM E 795 for an A mounting.
   Noise **R**eduction **C**oefficient = 0.80 (1.125”), 1.00 (2.125”)

1.06 SUBMITTALS

A. Product Data: Submit standard manufacturer product cut sheet showing product and selected options. Attach index of distinct panels indicating number of like panels, panel size and thickness, edge condition and fabric selection.
B. Design Data / Test Reports: Submit sound absorption coefficients and noise reduction coefficients.
C. Shop Drawings: Submit shop drawings with dimensions for non-rectangular panels.
D. Samples: Submit 6” x 6” fabric sample for each type of fabric specified. Submit panel sample no smaller than 8.5” x 11”.

1.07 QUALITY ASSURANCE

A. Qualifications: Manufacturer and installation contractor shall have a minimum of three years experience with similar systems.
B. Single Source: All products under this section shall be supplied by a single manufacturer to ensure consistency in product size and finish.
C. Flame Spread / Smoke Developed Characteristics: Product components tested by independent, accredited NVLAP facility according to ASTM E 84 and NFPA 255.
   a. Component Flame Spread Rating: 25 (maximum)
   b. Component Smoke Developed: 450 (maximum)
D. Pre-Installation Meeting: Installing contractor shall organize and conduct pre-installation meetings with all other trades to coordinate substrate conditions, conditioning of the space (temperature & humidity), and elements attaching to, penetrating through or concealed above/behind work in this section.

1.08 DELIVERY STORAGE AND HANDLING

A. Packing, Shipping, Handling and Unloading: Panels are susceptible to damage and shall be removed from packaging and handled with care. Panels greater than 16 square feet shall be carried by a minimum of 2 people. Panels shall never be set down on fabric faces, only on panel backsides.
B. Storage and Protection: Store panels in original packaging until ready to install. Store panels in temperature and humidity controlled conditions for 24 hours prior to installation and protect from moisture and infestation. Protect fabric finish from elements that would puncture, tear, snag or otherwise damage the fabric.
C. Acceptance at Site: Ensure that all project environmental requirements have been met prior to unpacking or installing fabric panels and all products. Full or partial installation constitutes complete product acceptance.
D. Waste Management and Disposal: Dispose of all packaging materials and debris in a safe and environmentally responsible manner according to the instructions set forth by the General Contractor, local ordinances or codes and the Environmental Protection Agency.

1.09 PROJECT CONDITIONS

A. Project Environmental Requirements: Prior to unpacking or installing fabric products, ensure that the installation area is fully enclosed and protected from moisture and direct sunlight. Ensure that the building’s mechanical systems are fully operational and will not be turned off again even for testing and balancing of the mechanical systems. Coordinate with other trades to ensure that all work above or behind fabric surfaces is complete and that all wet and dusty trades have completed work.
B. Product Acclamation: For a minimum period of seventy-two (72) hours and prior to unpacking or installing any fabric products, allow both the installation area and the fabric products to stabilize in temperature and humidity levels that are representative of the final temperature and humidity levels

expected after building completion and occupation. Do not install products if the humidity exceeds 65%.

C. Product Handling: Handle fabric panels carefully so as to avoid pulling or snagging the fabric finish or edges.

1.10 WARRANTY

A. Submit to Owner or Owner's Representative a written and dated warranty issued by the fabric ceiling/wall panel manufacturer warranting the fabric panels against defects in materials or manufacturing for a period of one (1) year from the date of delivery.

B. Components used in the system but not provided by the manufacturer are excluded from the manufacturer's warranty. Damage caused by exposure to moisture or rapid or extreme changes to temperature or humidity are excluded from the manufacturer's warranty. Damage caused by improper storage, handling, acclimatization, or installation is excluded from the warranty. Appearances and colorings of fabric products can vary over time and as site conditions change and are therefore excluded from the warranty.

1.11 OWNER'S INSTRUCTIONS

A. Installing contractor shall provide to the building owner or to the owner's representative a copy of the manufacturer's maintenance manual supplied with the panels.

1.12 MAINTENANCE

A. Extra Materials: If provided per the project requirements, extra materials shall remain in the manufacturer's original, unopened packaging and shall be given to the building owner or owner's representative upon substantial completion of work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. RPG Acoustical Systems, LLC, 99 South St, Passaic, NJ 07055 (telephone) 973-916-1166, http://www.rpgacoustic.com.

2.02 MATERIALS

A. Core: Semi-rigid fiberglass board.
B. Impact-Resistant Facing: Rigid fiberglass laminated to core.
C. Fabric: Open weave, Class A, polyester, without backing layer. Color per architect selection.
D. Scrim: White, open weave, fire-rated cloth (required for white or very light color fabrics, check with manufacturer on requirement for different fabrics).

2.03 MANUFACTURED UNITS

A. Thickness (nominal): 1-1/8" or 2-1/8".
B. Length (maximum): 120" standard
C. Width (maximum): 48" standard
D. Weight: 0.75 lbs per square foot (1-1/8" thickness)
E. Edges: Flat, Beveled, Angled, or Radius Cut

2.04 ACCESSORIES

A. Fasteners: Panels are supplied with selected standard Manufacturer's mounting hardware.

2.05 FABRICATION

A. Shop Assembly: Panels will be preassembled prior to arrival at project site. No field assembly is required.

B. Fabrication Tolerances – Panel sizes shall be within +/- 1/16" of specified sizes.

PART 3 EXECUTION

3.01 INSTALLERS

A. Only qualified installers with 3 years (minimum) experience installing similar products shall install panels.

3.02 EXAMINATION

A. Site Verification of Conditions: Examine installation area for compliance with all manufacturers' project environmental requirements and ensure uninstalled products have been stored, handled and acclimatized properly prior to commencing installation. Inspect all substrates for completion and quality of work to ensure that surfaces are level, plumb, clean, dry and completely cured from water or solvent evaporation. Do not commence installation if the structural capacity of the substrate is questionable or inadequate.

A. Coordination with Other Trades: Coordinate with all other trades to ensure that wet work including concrete, terrazzo, plastering, painting, etc. in the installation area is complete, cured and dry prior to installation. Coordinate with all other trades to verify that components associated with mechanical, electrical, lighting, data, telecommunication, audio, video, fire suppression and other building systems are installed behind or above designated installation areas prior to commencing installation. Coordinate the exact size, location and sequencing of building system components that are required to penetrate the fabric ceiling/wall panels.

3.03 PREPARATION

A. Protection: Protect surrounding work so as to avoid damage during installation of Panels.
B. Surface Preparation: Inspect substrate and ensure surface is flat, clean and dry without protruding elements that would otherwise interfere with panel installation.
C. Field Measure: Prior to commencing installation, measure panels and ensure that dimensions correspond to field measured dimensions of installation area.

3.04 INSTALLATION

A. Install panels per manufacturer's mounting instructions.
B. Install panels so that fabric-covered side faces into occupied space. Rectangular panels have no designated top or bottom and may be installed in either direction. Refer to architectural drawings for orientation.

3.05 CLEANING

A. Following installation, clean fabric on panels with high quality fabric cleaner per fabric manufacturer's instructions. Test for color fastness on scrap or concealed material.

3.06 DEMONSTRATION

A. Demonstrate to the building owner or to the owner's representative the safe and proper method for removing and replacing all types of accessible panels.
B. Supply the building owner or the owner's representative with any special tools provided by the manufacturer required to unlatch safety hardware on accessible panels.

3.07 PROTECTION

A. After installation, protect panels against dirt, water and contact that would puncture, snag, tear or otherwise damage panel fabric.

END OF SECTION