

SECTION 09846 – ACOUSTICAL COTTON LINER

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 acoustical cotton liner used as liner for HVAC ducts.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions.
- B. [LEED Submittals: Product data showing recycled content.]**
- C. Samples: Submit 2 samples of 6" x 6".
- D. Test Reports: Upon request submit certified test reports from recognized test laboratories.
- E. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

1.5 DELIVERY, STORAGE & HANDLING

- A. Delivery: Deliver material in the manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Provide labels indicating brand name, source of procurement, style, size and thickness.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

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1.6 MAINTENANCE

- A. Extra Materials: Provide [**Specify percentage**] for use by owner in building maintenance and repair.
- B. Provide new unopened cartons of extra materials, packaged with protective covering for storage and identified with appropriate labels.

1.7 WARRANTY

- A. Warranty Period: One year.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acoustical Cotton Liner:
  - 1. Quiet Liner by Acoustical Surfaces Inc. (Basis of Design)
    - a. 123 Columbia Court North Suite 210.
    - b. Chaska, MN 55318
    - c. (800) 448 - 0121.
    - d. [www.AcousticalSurfaces.com](http://www.AcousticalSurfaces.com)
  - 2. Or equal.

2.2 ACOUSTICAL COTTON LINER

- A. Description:
  - 1. Thermally bonded HVAC insulation that offers superior acoustic and Thermal Performance.
  - 2. Made from natural fibers, Quiet Liner contains no fiberglass and does not itch or cause skin irritation.
  - 3. Offer excellent sound absorption properties.
  - 4. Air stream surface is overlaid with durable, fire-resistant black facing providing additional strength.
  - 5. Both insulation and facing are treated with EPA registered anti -microbial agent.
- B. Applications:
  - 1. Used primarily as an acoustical liner designed for HVAC sheet metal ducts to absorb unwanted noise from multiple sources.
  - 2. Reduces heat gain or loss.
  - 3. Contains no harmful irritants and is safe to handle and install.
- C. Thickness: [**1/2 inch, 3.0 lb/cf**] [**1 inch with 1.5 lb/cf**] [**2 inch, 1.5 lb/cf**] [**As indicated on Drawings**].
- D. Physical Properties:

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1. Operating Limits Temperature Velocity: Maximum 250 degrees F, 5000 fpm per ASTM C411 and ASTM C1071.
  2. Surface Burning Characteristics (Fire Hazard Classification), Class A / Class 1 per ASTM E84, UL 723, and NFPA 255:
    - a. Flame Spread Max: 25.
    - b. Smoke Developed Max: 50.
  3. Corrosion Resistance: Pass – No Growth per ASTM G21, ASTM C1338, and ASTM C739.
  4. Fungi Resistance: Pass – No Growth per ASTM C1338 and ASTM C739.
  5. Bacteria Resistance: Pass - No Growth per ASTM G22.
  6. Water Vapor Absorption: Less Than 1% by weight per ASTM C1104.
- E. ES Report: ESR-1589 by ICC Evaluation Services, Inc.
- F. Product Compliance:
1. Fire Safety Standards:
    - a. NFPA 90A Installation of Air Conditioning and Ventilating Systems.
    - b. NFPA 90B Installation of Warm Air Heating and Air Conditioning System.
  2. Building Codes:
    - a. CBO International Conference of Building Officials.
    - b. BOCA Building Officials and Code Administrators.
    - c. CABO Council of American Building Officials.
    - d. SBCCI Southern Building Code Congress International.
- G. Noise Reduction Coefficient (NRC) rating for 1.5 lb/cf in thicknesses below:
1. 1/2 inch: 0.40.
  2. 1 inch: 0.75.
  3. 1-1/2 inch: 0.85.
  4. 2 inch: 1.15.
- H. Thermal Performance (R-value) in thicknesses below:
1. 1/2 inch: 2.0.
  2. 1 inch: 4.2.
  3. 1-1/2 inch: 6.0.
  4. 2 inch: 8.0.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Site Verification of Conditions: Do not proceed with installation of acoustical cotton liner until unacceptable conditions are corrected.

#### 3.2 INSTALLATION

- A. General: Do not begin installation until materials sufficient to complete an entire room are received and are ready for installation.

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1. Field cut acoustical panels as required, in accordance with manufacturers recommended procedures and equipment.
- B. Manufacturer's Instructions:
  1. Comply with the instructions and recommendations of the acoustical cotton liner manufacturer.
  2. Install materials in accordance with governing regulations, fire resistance rating requirements and industry standards applicable to work and 1995 SMACNA HVAC Duct Construction Standards.
- C. Apply acoustical cotton liner to inside of metal ducts, with black facing material facing air stream.
- D. Fully adhere to sheet metal duct work using adhesive complying with ASTM C916. Additionally, liner shall be secured to sheet metal duct work using mechanical fasteners spaced in accordance with 1995 SMACNA Duct Construction Standards.
- E. Length of mechanical fasteners shall be adequate to avoid compression while material is held firmly in place.
- F. Metal nosings shall be securely installed facing airstream over transversely oriented duct liner edges, at fan discharge and at any interval of lined duct preceded by unlined duct. In addition, where air velocities exceed 4000 fpm, metal nosing shall be used on upstream edges of liner at every transverse joint.
- G. Longitudinal joints in liner shall be coated with adhesive complying with ASTM C 916 when air velocities over 2500 fpm are anticipated.
- H. Liner shall be interrupted at area of operation of fire damper and minimum of 6 inches upstream of and 6 inches downstream of electric-resistance and fuel-burning heaters in duct system.

3.3 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity, including temperature and humidity limitations and dust control, so that the work will be without damage and deterioration at the time of acceptance by the Owner.

END OF SECTION 09846