STOP NOISE ACOUSTICAL SURFACES INC.
Sound Solutions for Over 40 Years | Soundproofing | Acoustics | Noise & Vibration Control

ESR-1589

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This report is subject to re-examination in one year.

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DIVISION: 15 MECHANICAL
Section 15820 — Duct Accessories

REPORT HOLDER:

Rendered by Manufacturer and Released to:
Acoustical Surfaces Inc.
123 Columbia Court North, Suite 201
Chaska, MN 55318
1-800-448-0121

EVALUATION SUBJECT:

NATURAL COTTON INSULATION QUIET LINER

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2003 *International Residential Code*® (IRC)
- 2003 *International Mechanical Code*® (IMC)
- 1997 *ICBO Uniform Mechanical Code*® (ICBO UMC)

Properties evaluated:

- Quiet Liner insulation
- Thermal transmission
- Surface-burning characteristics

2.0 USES

The Natural Cotton Insulation is an insulating Quiet Liner for the interior of sheet metal ducts. The insulation complies with IRC Section M1601.2.1, IMC Section 604 and UMC Section 604.

3.0 DESCRIPTION

The Quiet Liner insulation is composed of natural fiber insulation with a 0.011-inch-thick (0.279 mm), black nylon/polyester facing material on one face. The Quiet Liner material is treated with a borate solution. The Quiet Liner comes in various widths and lengths, is 1/2 to 2 inches (12.7 to 51 mm) thick and has a nominal density of 2 pounds per cubic foot (32 kg/m^3) The thermal resistance, *R*, is noted in Table 1 of this report. The Quiet Liner has a flame-spread index of 25 or less and a smoke-developed index of 50 or less, when tested in accordance with ASTM E 84.

4.0 INSTALLATION:

The Quiet Liner insulation shall be installed in accordance with the Acoustical Surfaces. Inc. installation instructions, this report and the 1995 SMACNA HVAC Duct Construction Standards. The Quiet Liner shall applied to the inside of metal ducts, with the black facing material facing the air stream.

The Quiet Liner shall be fully adhered to the sheet metal duct work using an adhesive complying with ASTM C 916. Additionally, the Quiet Liner shall be secured to the sheet metal duct work using mechanical fasteners spaced in accordance with 1995 SMACNA Duct Construction Standards. The length of the mechanical fasteners shall be adequate to avoid compression while the material is held firmly in place.

Metal nosings shall be securely installed facing the 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 (20 m/s), metal nosing shall be used on upstream edges of the liner at every transverse joint.

Longitudinal joints in the liner shall be coated with adhesive complying with ASTM C 916 when air velocities over 2500 fpm (13 m/s) are anticipated.

The Quiet Liner shall be interrupted at the area of operation of a fire damper and a a minimum of 6 inches (152 mm) upstream of and 6 inches (152 mm) downstream of electric-resistance and fuel-burning heaters in a duct system.

5.0 CONDITIONS OF USE

The Natural Cotton Insulation Quiet Liner described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation complies with this report, the manufacturer's published instructions and the applicable code.

5.2 The Natural Cotton Insulation Quiet Liner is manufactured and identified in accordance with this report.

6.0 EVIDENCE SUBMITTED

6.1 Reports of tests in accordance with UL 181, ASTM C 411, ASTM C 518 and ASTM E 84.

6.3 A quality control manual.

7.0 IDENTIFICATION

Each package of Quiet Liner has the following information:

- The product specifications, including the *R*-value, density and size.
- The name and address of the manufacturer.
- The frame-spread index (25 or less) and smoke-developed index (50 or less).
- Installation instructions.
- The ICC-ES evaluation report number (ESR-1589.

TABLE 1 — THERMAL RESISTANCE

NOMINAL THICKNESS (inches)	R-VALUE @75°F
	$\left(\frac{\text{hr ft}^2\,°\text{F}}{\text{Btu}}\right)$
1/2	2.0
1	3.8
1-1/2	5.6
2	7.5

For **SI**: 1 inch=25.4 mm; 1 ft^2 h °F/Btu=0.176 m^2 K/W, $t._C$=5/9 (t_{o_f}-32).