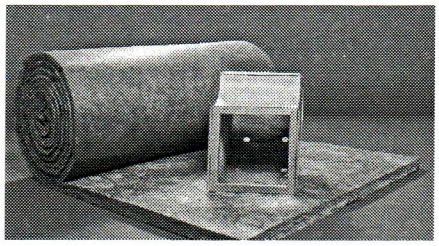
OWENS CORNING®

INNOVATIONS FOR LIVING™

QuietR® AcousticR™ Duct Liner

Product Data Sheet



Availability and Thermal Performance

QuietR® AcousticR™ Duct Liner is available in the following combinations of thicknesses and types.

Thickness		R-Value		Roll Length	
in	mm	(hr•ft²•°F)/Btu	(m²•°C)/W	ft	m
½	13	2.2	0.38	100	31
1	25	4.2	0.74	100	31
1½	38	6.3	1.11	50	15
2	51	8.0	1.41	50	15

Typical Physical Properties

Property	Test Method	Value	
Operating Temperature	ASTM C 411	250°F (121°C)	
Maximum Air Velocity	UL 181 Erosion Test ASTM C 1071	6,000 fpm (30.5 m/sec)	
Water Vapor Sorption (by weight)	ASTM C 1104	<3% at 120°F (49°C), 95% R.H.	
Fungi Resistance	ASTM C 1338	Meets requirements	
Fungi Resistance	ASTM G 21	Meets requirements	
Bacteria Resistance	ASTM G 22	Meets requirements	
Corrosiveness	ASTM C 665 (Corrosiveness Test)	Will not cause corrosion greater than caused by sterile cotton on aluminum or steel*	
Thermal Conductivity k at 75°F (λ at 24°C mean)	ASTM C 518	Btu•in/hr•ft²•°F	W/m•°C
Type 200		0.23	0.034
R-4.2		0.24	0.035
R-6.3		0.24	0.035
R-8		0.24	0.035
Surface Burning Characteristics	ASTM E 84, UL 723		
Flame Spread		<25	
Smoke Developed		<50	

Description

Owens Corning QuietR® AcousticR™ Duct Liner is a bonded blanket of glass fibers designed to be installed inside sheet metal ductwork and plenums with metal fasteners and adhesives. The smooth, fire-resistant airstream surfaces resist damage during installation and in service. QuietR® AcousticR™ Duct Liner complies with requirements of National Fire Protection Association Standards NFPA 90A and 90B, qualifying it under other model codes.

QuietR® AcousticR™ Duct Liner is available in a selection of thicknesses to meet specific system thermal and acoustical performance requirements (see Availability table). Rolls are sized to run efficiently on modern automatic coil lines. QuietR® AcousticR™ Duct Liner has a tough, flame-retardant airstream surface with an EPA registered biocide that stands up to gouging and other abuse in the shop and on the way to the job-site. It also contributes to reliable long-term service at internal air velocities up to 6,000 fpm (30.5 m/s).

The factory applied edge coating complies with industry standards requiring treated transverse joints.

Uses

QuietR® AcousticR™ Duct Liner enhances indoor environmental quality by absorbing noise within sheet metal ducts, and contributes to indoor comfort by lowering heat loss or gain through duct walls.

Product Attributes

Bacterial and Fungal Growth Resistance

An EPA registered biocide in the air stream surface protects QuietR® AcousticR™ Duct Liner from microbial growth and meets requirements of ASTM C 1338, ASTM G21 (fungi test), and ASTM G22 (bacteria test).

Tips to Avoid Mold Growth in Ducts

Mold in duct systems occurs when moisture comes into contact with dirt or dust collection on the duct system surfaces. Proper filters will minimize the collection of dusts and dirt, but care needs to be exercised to prevent water formation in the duct. A properly sized and operated air conditioning unit will minimize the likelihood of water formation. The system must be maintained and operated to insure that sufficient dehumidification is occurring and that filters are installed and changed as recommended by the equipment manufacturer.

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Assured Thermal Performance

When installed in accordance with instructions so that compression is controlled, QuietR® AcousticR™ Duct Liner provides specified thermal performance. See R-value table below. Operating costs are controlled due to reduction of heat loss or gain through duct walls.

Acoustically Efficient

Duct systems built with this liner absorb fan and air turbulence noise and reduce popping noises caused by sheet metal expansion, contraction and vibration.

Application Recommendations

All portions of duct designated to receive QuietR® AcousticR™ Duct Liner shall be completely covered with duct liner, adhered to the sheet metal with 90% coverage of adhesive complying with ASTM C 916. Transverse joints shall be neatly butted and there shall be no interruptions or gaps. All transverse joints shall be edge-coated. Metal nosing on leading edges must be used where duct liner is preceded by unlined metal, and on all upstream edges when velocity exceeds 4,000 fpm (20.3 m/s). The black mat faced surface of the duct liner shall face the airstream.

QuietR® AcousticR™ Duct Liner shall also be secured with mechanical fasteners, either impact-driven or weld-secured, which shall compress the duct liner sufficiently to hold it firmly in place. For fastener spacing, see illustration.

Duct Liner shall be cut to assure overlapped and compressed longitudinal corner joints. For details, refer to NAIMA Publication AH124, Fibrous Glass Duct Liner Standard.

Minor damage and small tears may be repaired by coating with adhesive.

After installation, and prior to occupancy, blow out duct system to remove any cutting scraps or foreign material remaining in the duct.

Installing two layers of material to meet a specific liner thickness is not recommended. If the specification forces the use of multiple layers, the following steps must be taken:

1. Adhere bottom layer of duct liner to duct in normal manner.
2. Adhere top layer to bottom layer of liner using a minimum of 90% adhesive coverage.
3. Treat all leading edges with metal nosings to prevent separation of the two layers.
4. Use mechanical fasteners of the proper length for double layer.

Specification Compliance

- ASTM C 1071, Type I, Flexible (replaces obsolete Federal Specification HH-I-545B.)
- NFPA 90A/90B
- ICC Compliant
- California Title 24
- SMACNA Application Standard for Duct Liners
- NAIMA Fibrous Glass Duct Liner Installation Standard
- Conforms to ASHRAE 62-2001

Application Limitations

Use of QuietR® AcousticR™ Duct Liner is not recommended for the following applications:

- With wood or coal fired equipment, or equipment of any type which does not include automatic maximum temperature controls and where operating temperatures of 250°F (121°C) may be exceeded.
- In kitchen or fume exhaust ducts, or ducts conveying solids or corrosive gases
- In any application where the duct liner may come in direct contact with liquid water (such as cooling coils, humidifiers, and evaporative coolers) unless protected from the water source.
- Inside fire damper sleeves.
- Immediately adjacent to high temperature heating coils without radiation protection.

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Acoustic Performance

Tested Values - QuietR® Duct Liner

Sound Absorption coefficients at octave band center frequencies (Hz)

Thickness in (mm)	125	250	500	1000	2000	4000	NRC
½ (13)	0.04	0.12	0.39	0.64	0.78	0.74	0.50
1 (25)	0.05	0.30	0.60	0.87	0.98	1.05	0.70
1½ (38)	0.05	0.47	0.85	1.01	1.01	1.01	0.85
2 (51)	0.12	0.66	1.04	1.08	1.04	1.07	0.95

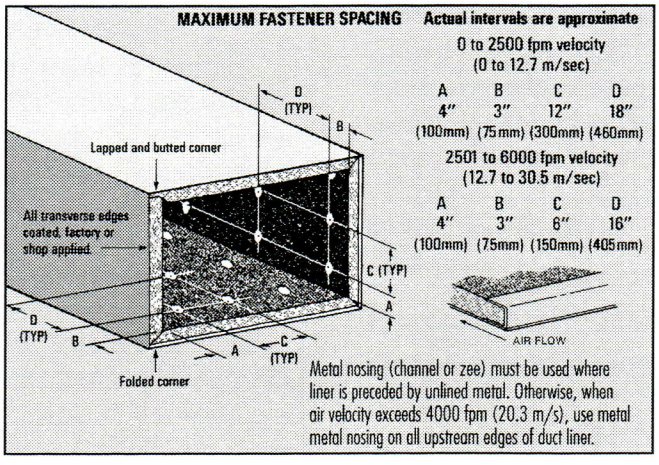
These data were collected using a limited sample size and are not absolute values. Reasonable tolerances must therefore be applied. All tests were conducted in accordance with ASTM C 423, Mounting A (material placed against a solid backing such as a block wall). For more information, call your Owens Corning Representative.

Insertion Loss, dB per ft of Lined Duct

	1" Liner						2" Liner					
	Octave band center frequencies, Hz						Octave band center frequencies, Hz					
P/A, ft/ft²	125	250	500	1000	2000	4000	125	250	500	1000	2000	4000
8	0.6	1.5	2.7	5.8	7.4	4.3	0.8	2.9	4.9	7.2	7.4	4.3
6	0.5	1.2	2.3	5.0	5.8	3.6	0.6	2.3	4.2	6.2	5.8	3.6
4	0.4	0.8	1.9	4.0	4.1	2.8	0.5	1.6	3.5	5.0	4.1	2.8
2	0.2	0.5	1.4	2.8	2.2	1.8	0.3	0.8	2.3	3.3	2.0	1.7
1	0.1	0.1	1.0	2.0	1.2	1.2	0.2	0.5	1.8	2.3	1.1	1.1

Duct Liner Insertion Loss – Data extracted from ASHRAE Handbook, HVAC Applications, Chapter 43, 1999
P/A = duct perimeter, ft/duct cross sectional area (ft2). Example: 12" x 12", P/A = 4 (1/ft). For more information, call your Owens Corning Representative.

Figure 1



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