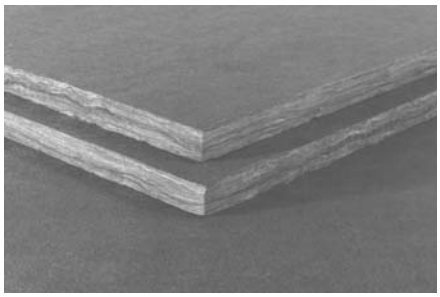
OWENS CORNING®

INNOVATIONS FOR LIVING®

QuietR®
Duct Liner Board

Product Data Sheet



Availability

QuietR® Duct Liners are available in the following combinations of thicknesses and types:
R-values, hr•ft²•°F/Btu (RSI, m²•°C/W) at 75°F (24°C) mean temperature

Product Type and Thickness	Nominal Density pcf (kg/m³)	1.0 in (25mm)	1.5 in (38mm)	2.0 in (51mm)
QuietR® Duct Liner Board	3.0 (48)	4.3 (0.76)	6.5 (1.15)	8.7 (1.53)

QuietR® Duct Liner Board is available in the following standard sizes:
1½" x 48" x 96" (38mm x 1219mm x 2438mm), 2" x 24" x 48" (51mm x 610mm x 1219mm), and 2" x 48" x 96" (51mm x 1219mm x 2438mm)
MTO available at Width: 48", Length: 24"–120"

Typical Physical Properties

Property	Test Method	Value
Operating Temperature	ASTM C 411	250°F (121°C)
Maximum Air Velocity	UL 181 and ASTM C 1071 Erosion Test	6,000 fpm (30.5 m/s)
Water Vapor Sorption	ASTM C 1104	3% by weight 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[1]	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: 0.23 / W/m•°C: (0.033)
Surface Burning Characteristics	ASTM E 84, NFPA 255, UL 723,** and CAN/ULC-S102-M	
Flame Spread[2]		25
Smoke Developed		50

1. When wet, coated surfaces of QuietR® Duct Liner Board in contact with galvanized steel may cause discoloration of the sheet metal.
2. The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E 84, NFPA 255, and CAN/ULC-S102-M. These standards should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.

Description

QuietR® Duct Liner Board is a bonded board of glass fibers designed to be installed inside sheet metal ductwork or plenums with metal fasteners and adhesives. The smooth, fire-resistant airstream surface resists damage during installation and in service. The product complies with the requirements of National Fire Protection Association Standards NFPA 90A and 90B, qualifying them under other model codes.

It is ideal for use in large ducts and plenums where air velocities do not exceed 6,000 fpm (30.5 m/s).

Uses

QuietR® Duct Liner Board enhances indoor environmental quality by absorbing noise within sheet metal ducts. The product also contributes to indoor comfort by lowering heat loss or gain through duct walls.

Product Attributes

Acoustically Efficient

Owens Corning™ duct liners absorb noise within the duct, helping create quiet and comfortable environments.

Thermally Effective

These duct liners can reduce operating costs by lowering heat loss or gain through duct walls, conserving energy and eliminating or reducing the need for external insulation.

Tough, Abuse-Resistant Surface

Installation costs are reduced because these products resist damage which can often occur during fabrication and installation.

Cleanable Surface

The black mat facing provides a smooth, durable surface making it easier to clean the duct liners using methods and equipment described in North American Insulation Manufacturers Association (NAIMA) Publication AH122, Cleaning Fibrous Glass Insulated Duct Systems: Recommended Practice.

Meets Fire Resistance Codes

Owens Corning™ duct liners have flame spread ratings of 25 and smoke developed ratings of 50 when tested in accordance with UL 723 and ASTM E 84. They meet requirements of NFPA 90A and 90B for fire resistance.

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Bacterial and Fungal Growth Resistance

An EPA registered biocide in the mat facing protects the facing from microbial growth and meets requirements of ASTM C 1338, ASTM G 21 (fungi test), and ASTM G 22 (bacteria test).

Tips to Avoid Mold Growth in Ducts

Mold in duct systems occurs when moisture comes into contact with dirt or dust collected on the duct system surfaces. Proper filters will minimize the collection of dust and dirt, but care needs to be exercised to prevent water formation in the duct. A properly sized, installed 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.

Specification Compliance

- ASTM C1071, Type II Rigid (Replaces Federal Specification HH-I-545B)
- NFPA 90A and 90B
- ICC Compliant
- California Title 24
- SMACNA Application Standard for Duct Liners
- NAIMA Fibrous Glass Duct Liner Installation Standard
- Conforms to ASHRAE 62-2001

Acoustic Performance

Tested Values - QuietR® Duct Liner Board

Thickness	Sound Absorption Coefficients at Octave Band Center Frequencies (Hz)						
(in)	125	250	500	1000	2000	4000	NRC
1.0 (25)	0.04	0.26	0.63	0.91	0.99	0.99	0.70
1.5 (38)	0.05	0.45	0.86	1.02	1.02	1.03	0.85
2.0 (51)	0.11	0.64	1.12	1.14	1.06	1.08	1.00

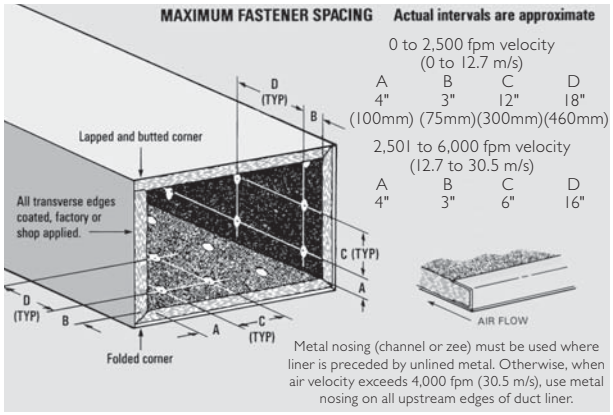
NOTE – Acoustical Performance: These data were collected using a limited sample size and are not absolute values. Reasonable tolerances must therefore be applied. All tests were conducted in accordance with ASTM C 423, Mounting A (material placed against a solid backing). For more information, call your Owens Corning Sales 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	0.3	1.0	2.0	1.2	1.2	0.2	0.5	1.8	2.3	1.1	1.1

Data extracted from ASHRAE Handbook, HVAC Applications, Chapter 43
P/A = Duct Perimeter, (ft)/Duct Cross Sectional Area (ft2). Example: 12" x 24" duct, P/A = 3 ft/ft2.

Figure 1



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Application Recommendations

All portions of duct designated to receive duct liner shall be completely covered with QuietR® Duct Liner Board, 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 6,000 fpm (30.5 m/s). The black faced surface of the duct liner shall face the airstream.

QuietR® Duct Liner Board 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 Figure 1.

QuietR® Duct Liner Board shall be cut to assure tight, overlapped corner joints. The top pieces shall be supported at the edges by the side pieces.

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 leading edges with metal nosings to prevent separation of the two layers.
4. Use mechanical fasteners of the proper length for double layers.

Application Precautions

QuietR® Duct Liners should not be used where operating temperatures will exceed 250°F (121°C).

To avoid contact with liquid water, duct liner should be protected with a sheet metal sleeve and drip pan adjacent to equipment such as evaporative coolers, humidifiers, cooling coils and outside intakes. When duct systems run through unconditioned space and are used for cooling only, register openings must be tightly sealed to prevent water vapor accumulation in the system during the heating season.

When duct liners are used in systems supplying hospital operating rooms, delivery rooms, recovery rooms, nurseries, isolation rooms and intensive care units, terminal filters of at least 90% efficiency should be installed downstream of lined ducts.

Lined ductwork supplying clean rooms should have terminal filtration of the efficiency required for the particular class of clean room.

To avoid damage to the duct liner due to physical abuse caused by maintenance personnel working in accessible plenums, some means of duct liner protection must be employed.

To prevent itching and short-term irritation to skin and eyes, normal work clothing (long-sleeved shirts, long pants, gloves, and safety glasses) is recommended. In addition, use a properly fitted and approved disposable dust respirator when installing or removing this product in poorly ventilated spaces, when fabrication involves power tools, or in any dusty environment.

Application Limitations

Use of QuietR® Duct Liner Board 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 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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