



INNOVATIONS FOR LIVING®

# QuietR® Rotary Duct Liner

## Product Data Sheet



### Availability and Thermal Performance

QuietR® Rotary 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 |

### Uses

QuietR® Rotary 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.

### Application Recommendations

All portions of duct designated to receive QuietR® Rotary 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 6,000 fpm (20.3 m/s). The black mat faced surface of the duct liner shall face the airstream.

QuietR® Rotary 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 Figure 1.

### Typical Physical Properties

| Property   | Test Method                        | Value  |        |
|--|------------------------------------|--|--------|
| Operating Temperature                              | ASTM C 411                         | 250°F (121°C)  |        |
| Maximum Air Velocity                               | UL 181 Erosion Test<br>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<br>(Corrosiveness Test) | Will not cause corrosion greater than caused by sterile cotton on aluminum or steel* |        |
| Thermal Conductivity<br>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,<br>CAN/ULC S102 | Flame Spread   | 25     |
|  |                                    | Smoke Developed  | 50     |

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



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- SMACNA Application Standard for Duct Liners
- NAIMA Fibrous Glass Duct Liner Installation Standard
- Conforms to ASHRAE 62-2001

### Application Limitations

Use of QuietR® Rotary 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.

### Acoustic Performance

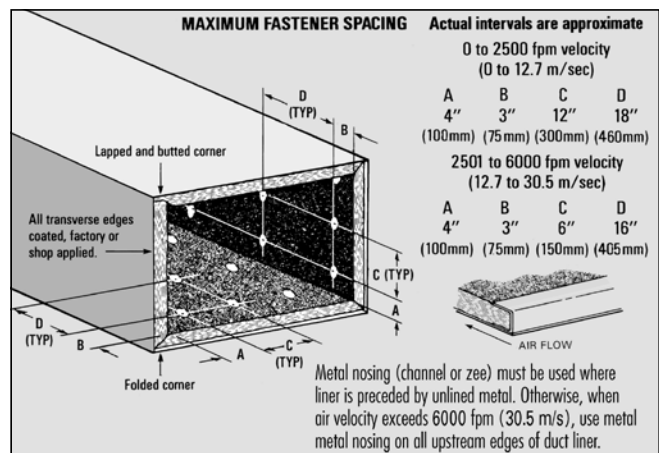
| Tested Values - QuietR® Duct Liner                                   |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|
| Sound absorption coefficients at octave band center frequencies (Hz) |      |      |      |      |      |      |      |
| Thickness 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.

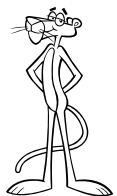
| Insertion Loss, dB per ft of Lined Duct |                                    |     |     |      |      |      |                                    |     |     |      |      |      |  |
|---|------------------------------------|-----|-----|------|------|------|------------------------------------|-----|-----|------|------|------|--|
| P/A, ft/ft <sup>2</sup>                 | 1" Liner                           |     |     |      |      |      | 2" Liner                           |     |     |      |      |      |  |
|   | Octave band center frequencies, Hz |     |     |      |      |      | Octave band center frequencies, Hz |     |     |      |      |      |  |
|   | 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 (ft<sup>2</sup>). Example: 12" x 12", P/A = 4 (1/ft). For more information, call your Owens Corning Representative.

Figure 1



**OWENS CORNING INSULATING SYSTEMS, LLC**  
 ONE OWENS CORNING PARKWAY  
 TOLEDO, OHIO 43659  
**1-800-GET-PINK®**  
[www.owenscorning.com](http://www.owenscorning.com)



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