



# QUIETR<sup>®</sup> DUCT BOARD ALL-IN-ONE SYSTEM



Owens Corning<sup>®</sup> QuietR<sup>®</sup> Duct Board is a rigid, resin bonded fibrous glass board with a tough, damage resistant, flame retardant, reinforced aluminum foil (FRK) facing; with a durable mat air stream surface.

## QUIETR<sup>®</sup> DUCT BOARD

- Absorbs noise and reduces popping noises caused by expansion, contraction and vibration
- Assured thermal R-value performance
- Fungal growth resistant with an EPA registered biocide that helps protect the air stream surface from microbial growth<sup>1</sup>
- Thermal/acoustical insulation board plus jacket forms a single component duct system, thus reducing inspection time
- Virtually eliminates air leakage thus saving energy and removing the need for system overdesign

## Physical Properties

| PROPERTY                                                           | TEST METHOD                  | VALUE                                             |
|--------------------------------------------------------------------|------------------------------|---------------------------------------------------|
| Maximum operating temperature limits                               | UL 181/ULC S110              | Internal: 250°F (121°C)<br>External: 150°F (66°C) |
| Maximum air velocity                                               | UL 181/ULC S110 Erosion test | 6,000 fpm (30.5 m/s)                              |
| Static pressure limit                                              | UL 181/ULC S110              | ±2 in. w.g. (500 Pa)                              |
| Water vapor sorption                                               | ASTM C 1104                  | <3% by weight at 120°F (49°C), 95% R.H.           |
| Mold growth                                                        | UL 181/ ULC S110             | Meets requirements                                |
| Fungi resistance                                                   | ASTM G21                     | Meets requirements                                |
| Surface burning characteristics<br>Flame spread<br>Smoke developed | UL 723/ ULC S102             | <25<br><50                                        |
| Flame penetration                                                  | UL 181/ULC S110              | Meets requirements                                |

## Product Applications

QuietR<sup>®</sup> Duct Board may be used to fabricate components for indoor commercial and residential heating, ventilating and air conditioning duct systems operating at static pressures to ±2 in. w.g. (500 Pa), internal air temperatures 40°F (4°C) to 250°F (121°C), and air velocities to 6,000 fpm (30.5 m/s). Straight duct sections, elbows, tees, offsets and other system elements can quickly and easily be fabricated at the shop or on the job and assembled into a complete air distribution system using these lightweight, thermally efficient boards.

Availability

| TYPE      | THICKNESS  | DENSITY, PCF (KG/M3) |
|-----------|------------|----------------------|
| Type 475  | 1" (25mm)  | 4.4 (70)             |
| Type 800  | 1½" (38mm) | 3.8 (61)             |
| Type 1400 | 2" (51mm)  | 3.8 (61)             |

Type designates board stiffness defined by flexural rigidity. Type selection depends on duct size, pressure and reinforcement schedule. The 1½" (38mm) and 2" (51mm) thickness provides superior thermal value.

Thermal Performance

| AT 75°F (24°C) MEAN TEMPERATURE       | 1" (25MM)    | 1½" (38MM)   | 2" (51MM)    |
|---------------------------------------|--------------|--------------|--------------|
| R-value, hr•ft2•°F/Btu (RSI, m2•°C/W) | 4.30 (0.76)  | 6.50 (1.15)  | 8.70 (1.53)  |
| k-value, Btu•in/hr•ft2•°F (W/m•°C)    | 0.23 (0.033) | 0.23 (0.033) | 0.23 (0.033) |
| C-value, Btu/hr•ft2•°F (W/m2•°C)      | 0.23 (1.32)  | 0.16 (0.87)  | 0.12 (0.65)  |

Mean temperature is the average of two temperatures: that of the air inside the duct and that of the ambient air outside it. Note: Specified design thickness should be adequate to prevent exterior surface condensation.

Acoustical Performance

Sound absorption coefficients at octave band center frequencies, Hz.

| THICKNESS | 125  | 250  | 500  | 1000 | 2000 | 4000 | NRC  |
|-----------|------|------|------|------|------|------|------|
| 1"        | 0.06 | 0.24 | 0.65 | 0.96 | 1.00 | 1.03 | 0.70 |
| 1½"       | 0.14 | 0.41 | 0.95 | 1.09 | 1.03 | 1.05 | 0.85 |
| 2"        | 0.17 | 0.68 | 1.12 | 1.13 | 1.03 | 1.10 | 1.00 |

This data was collected using a limited sample size and are not absolute values. Therefore, reason-able tolerances must be applied. Tests were conducted in accordance with ASTM C423, Mounting A (material applied against a solid backing.)

Technical Information

National Fire Protection Association Standard Specifications NFPA 90A and 90B for conditioning and ventilating systems require air ducts to be Class 0 or Class 1. NFPA and UL Specifications set stringent requirements for fire safety and ruggedness. To meet Class 1 air duct requirements, the duct must withstand UL 181/ULC S110 tests such as erosion, positive and negative pressures, impact, collapse, puncture, static load, and flame penetration. Also, to qualify as a Class 1 Air Duct, the following UL 723/ULC S102 fire testing requirements must be met: Flame Spread, 25; Smoke Developed, 50.

Limitations

- Fiberglass ducts should not be used in the following applications:
- Kitchen or fume exhaust ducts, or to convey solids or corrosive gases;
  - In concrete or buried below grade; outdoors;
  - As casings and/or housings of built-up equipment;
  - Immediately adjacent to high temperature electric heating coils without radiation protection;
  - For vertical risers in air duct systems serving more than two stories in height;
  - With coal or wood fueled equipment, or with equipment of any type which does not include automatic maximum temperature controls;
  - In variable air volume systems on the high pressure side unless reinforced to withstand the full fan pressure;
  - As penetrations in construction where fire dampers are required, unless the fire damper is installed in a sheet metal sleeve extending through the fire wall; or
  - When the duct system is located in non-conditioned space and is used for cooling only (when heating is from another source), unless all registers which would allow moist air into the duct system are vapor sealed during the heating season to prevent condensation from forming inside the duct.

Standards, Codes Compliance

- Meets UL 181 Class 1 Air Ducts
- Meets NFPA 90A/90B
- Meets ICC International Mechanical Code, Corps of Engineers Guide Spec.
- Supported by NAIMA and SMACNA industry standards
- Meets requirements of UL 181 and ASTM C1338 (mold growth), ASTM G21 (fungi test)

Fabrication and Installation

Fabrication and installation of fiber glass Duct Systems shall be in accordance with the UL listing and shall conform to Owens Corning's published methods and/or latest editions of NAIMA (North American Insulation Manufacturers Association) Fibrous Glass Duct Construction Standards (AH116 or AH119) or SMACNA (Sheet Metal and Air Conditioning Contractors National Association) Fibrous Glass Duct Construction Standards.

UL181A Listed Closure

- UL 181A Listed Closure must be employed to meet the requirements of UL 181/ULC S110. USE OF A NON-LISTED CLOSURE SYSTEM VOIDS THE UL CLASS 1 AIR DUCT RATING. The following are the listed closure methods:
- Pressure-Sensitive Tape (UL 181A-P)
  - Mastic and Glass Fabric (UL 181A-M)
  - Heat-Activated Tape (UL 181A-H)

Cleanability

The durable mat air stream surface makes it easy to clean the duct system using methods and equipment described in North American Insulation Manufacturers Association (NAIMA) Publication AH122, Cleaning Fibrous Glass Insulated Duct Systems.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services.

Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at [www.owenscorning.com](http://www.owenscorning.com).

For additional information, refer to the Safe Use Instruction Sheet (SUIS) found in the SDS Database via <http://sds.owenscorning.com>

Certifications and Sustainable Features

- GREENGUARD Certified products are certified to GREENGUARD standards for low chemical emissions into indoor air during product usage. For more information, visit [ul.com/gg](http://ul.com/gg)\*
- Environmental Product Declaration (EPD) has been certified by UL Environment
- Health Product Declaration® for QuietR® Duct Board



\*GREENGUARD Gold certification is for boards 1" or less in thickness.

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