

Product Data Sheet

650°F (343°C) minimum.  
Continuous production may  
require periodic pauses to  
allow sealing iron to recover  
to 650°F (343°C).

f. Allow joint to cool  
before stressing.

3. Mastic and Glass Fabric

Any mastic and glass fabric  
closure system listed and  
labeled under UL 181,  
Part III (M).

a. All longitudinal and  
circumferential joints must be  
stapled with outward flaring  
½"(13mm) (min.) staples, 2"  
(50mm) (approx.) O.C.

b. Brush mastic onto joint and  
embed glass fabric in mastic.

c. Brush second coat of  
mastic over fabric until  
completely filled.

d. Allow joints to dry in  
accordance with mastic  
manufacturer's recommendation  
before pressurizing system.

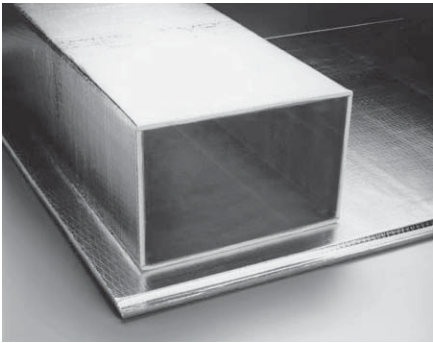


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Description

Owens Corning **EnDuraGold®**  
FIBERGLAS® Duct Board is a  
rigid, resin bonded fibrous glass  
board with a tough, damage-  
resistant, flame retardant,  
reinforced aluminum foil (FRK)  
facing. When fabricated into duct  
systems, it combines excellent  
thermal and acoustical insulating  
properties with substantially  
airtight transmission of air when  
all joints are sealed with UL 181A  
listed closures.

**EnDuraGold®** FIBERGLAS® Duct  
Board features a durable mat air  
stream surface that isolates the  
glass fiber substrate from the  
airstream and inhibits penetration  
of the insulation by dirt, dust and  
other pollutants. This durable 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,  
Recommended Practice.

Uses

**EnDuraGold®** FIBERGLAS® 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 transmission system  
using these lightweight, thermally  
efficient boards.

Product Attributes

Bacterial and Fungal Growth  
Resistance

A durable air stream surface  
includes an EPA registered biocide  
that protects the air stream  
surface 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 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.

Assured Thermal Performance

R-values as published for  
**EnDuraGold®** FIBERGLAS® Duct  
Board are superior to those of  
compressible insulation of equal  
thickness. Factory control of  
thickness assures that installed  
R-values will be as published for

Typical Physical Properties

Property	Test Method	Value
Maximum Operating Temperature Limits	UL 181	Internal: 250°F (121°C) External: 150°F (66°C)
Maximum Air Velocity	UL 181 Erosion Test	6,000 fpm (30.5 m/s)
Static Pressure Limit	UL 181	±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	Meets requirements
Fungi Resistance	ASTM G 21	Meets requirements
Bacteria Resistance	ASTM G 22	Meets requirements
Surface Burning Characteristics Flame Spread Smoke Developed	UL 723 <sup>1</sup>	< 25 <sup>1</sup> < 50
Fire Retardancy	UL 181	Flame Penetration 30 min.

<sup>1</sup>The surface burning characteristics of these products have been determined in accordance with UL 723. This standard 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.



EnDuraGold®

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the product.

Acoustically Efficient

Duct systems built with these boards absorb fan and air turbulence noise; reduce popping noises caused by expansion, contraction and vibration.

Single Contractor Accountability

Thermal/acoustical insulation board plus jacket forms a single component duct system, thus reducing inspection time.

Lightweight

These lightweight boards are easier to transport and handle than insulated sheet metal ducts. They reduce the load imposed on the structure by the duct system.

Virtually Eliminates Air Leakage

Closures with UL 181A listed pressure-sensitive tape, heat-activated tape, or glass fabric and mastic virtually eliminate air leakage. This saves energy and removes the need for system overdesign.

Code Compliance

Meets the following model codes and most other applicable codes: NFPA 90A/90B, ICC International Mechanical Code, SBCCI, ICBO, BOCA, CABO, Corps of Engineers Guide Spec., NYC MEA #186-69.

Supported by Industry Standards

Proper fabrication and installation guidelines help ensure long-term performance of the system. These standards, developed by NAIMA and SMACNA, lead to clearer understanding between specifier and contractor.

UL Class I Air Duct

National Fire Protection Association Standards NFPA 90A and 90B for air conditioning and ventilating systems require air ducts to be Class 0 or I. The tests set stringent requirements on fire safety as well as ruggedness. To meet Class I air duct requirements, the system

must withstand UL 181 tests such as erosion, pressure loss, impact, collapse, puncture, static load and fire retardancy (30 minute flame penetration test). Also, to qualify as a Class I Air Duct System, the following UL 723 fire testing requirements must be met: Flame spread, 25; Smoke developed, 50.

Thermal Performance

	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.							
Type	125	250	500	1000	2000	4000	NRC
Type 475, 1" (25mm)	0.08	0.19	0.69	0.94	0.99	0.98	0.70
Type 800, 1" (25mm)	0.08	0.19	0.69	0.94	0.99	0.98	0.70
Type 800, 1½" (38mm)	0.12	0.33	0.92	1.04	1.03	1.02	0.85
Type 1400, 2" (51mm)	0.14	0.72	1.15	1.12	1.06	1.07	1.00

These data were collected using a limited sample size and are not absolute values. Therefore, reasonable tolerances must be applied. Tests were conducted in accordance with ASTM C 423, Mounting A (material placed against a solid backing).

Product Availability

EnDuraFold Fiber Glass Duct Board is available in the following forms:

Type	Thickness	Density, pcf (kg/m²)
Type 475	1" (25mm)	4.4 (70)
Type 800	1" (25mm)	5.3 (85)
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.



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Limitations

Fiber glass ducts should not be used in the following applications:

- A. Kitchen or fume exhaust ducts, or to convey solids or corrosive gases;
- B. In concrete or buried below grade;
- C. Outdoors;
- D. As casings and/or housings of built-up equipment;
- E. Immediately adjacent to high temperature electric heating coils without radiation protection;
- F. For vertical risers in air duct systems serving more than two stories in height;
- G. With coal or wood fueled equipment, or with equipment of any type which does not include automatic maximum temperature controls;
- H. In variable air volume systems on the high pressure side unless reinforced to withstand the full fan pressure;
- I. 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
- J. 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.

Application Recommendations

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 or SMACNA (Sheet Metal and Air Conditioning Contractors National Association) Fibrous Glass Duct Construction Standards. One of the following closure methods must be employed to meet the requirements of UL 181. USE OF A NON-LISTED CLOSURE SYSTEM VOIDS THE UL CLASS I AIR DUCT RATING.

I. Pressure-Sensitive Tape

Any tape listed and labeled under UL 181A, Part I (P).

- a. All longitudinal and circumferential joints must be stapled with outward flaring ½" (13mm) (min.) staples, 2" (50mm) (approx.) O.C.
- b. Wipe surface where tape is to be applied to field joints with clean cloth. If surface has grease or oil, saturate cloth with approved solvent. Refer to tape manufacturer's recommendations.
- c. Center tape over edge of stapling flap and rub firmly in place immediately after application, using a squeegee or similar tool.

d. A heat sealing iron must be used to assure a good bond when installed below 50°F (10°C).

e. Tape should not be applied to surface of duct board when temperature is below 32°F (0°C) due to the possibility of entrapping ice crystals which will cause tape to loosen upon melting. Heat surface first to drive off moisture.

2. Heat-Activated Tape

Any tape listed and labeled under UL 181A,Part II (H).

- a. All longitudinal and circumferential joints must be stapled with outward flaring ½" (13mm) (min.) staples, 2" (50mm) (approx.) O.C.
- b. Wipe surface where tape is to be applied with clean cloth. If surface has grease or oil, saturate cloth with approved solvent. Refer to tape manufacturer's recommendations.
- c. Center tape over joint and seal down tape end with 500°F (260°C) iron. Do not use heat gun; heat and pressure are both required to effect a seal.

d. Press down entire length of tape to hold in place using a smearing action to get good bond. Colored dots on tape surface darken when satisfactory bonding temperature is reached.

e. Staples may be omitted when automatic closure machines such as Glass Master Closemasters are used. Iron temperature must be set at