



Submittal Sheet

0810 Tape

INSULATION -
NORTH AMERICA

Fiberglas® EnDuraCoat™ Duct System

- ☒ Type 475, 1" (25mm)
☐ Type 800, 1½" (38mm)

Description

The Owens-Corning EnDuraCoat™ Duct System is made from rigid resin bonded Fiberglas boards with a tough, damage-resistant, flame retardant reinforced aluminum foil air barrier facing. The inner air stream surface has a smooth, durable acrylic coating that isolates the glass fiber substrate from the air stream and inhibits penetration of the insulation by dirt, dust and other pollutants. Installed R-values meet ASHRAE 90.1 and 90.2 standards to R-6.5. The EnDuraCoat duct system offers, in a single product, superior thermal and acoustical insulating properties with virtually air-tight transmission of air. The interior coating makes it easier to clean the duct system using NAIMA recommendations. When installed following Owens-Corning's instructions, all joints are sealed with UL-listed closures.

Uses

Fiberglas EnDuraCoat duct systems are designed for use in indoor commercial and residential heating, ventilating and air conditioning duct systems operating at air velocities to 5,000 fpm (25.4 m/sec), static pressures to 2" WG (498 Pa) and internal air temperatures not exceeding 250°F (121°C). Straight duct sections, elbows, offsets and other components can quickly and easily be fabricated using this light-weight system.

Availability

Fiberglas EnDuraCoat duct board is available in the following forms:

- Type 475, 1" (25mm) thick;
- Type 800, 1½" (38mm) thick.

Type designates board stiffness defined by flexural rigidity. Selection of type depends on duct size, static pressure and reinforcement schedule. 1½" (38mm) thick EnDuraCoat duct board can provide superior thermal and sound control value.

UL Class 1 Air Duct

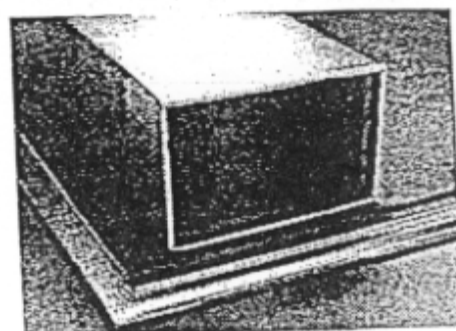
National Fire Protection Association Standard NFPA 90A for air conditioning and ventilating systems requires air ducts to be Class 0 or 1. The tests set stringent requirements on fire safety as well as ruggedness. To meet Class 1 air duct requirements, the system must withstand UL 181 tests such as rupture, impact, collapse, puncture, static load, and fire retardancy (30 minute flame penetration test). Also, the following UL 723 fire testing requirements must be met: Flame Spread, 25*; Smoke Developed, 50.

Fiberglas EnDuraCoat Duct Board is listed by Underwriters Laboratories, Inc. as a UL 181 Class 1 air duct. It meets model code requirements of NFPA 90A and 90B, SBCCI, CABO, ICBO, BOCA and Corps of Engineers Guide Specifications. It meets Washington State VOC emission standards. System fabrication and installation guidelines published in NAIMA's *Fibrous Glass Duct Construction Standard* help both specifier and contractor to ensure long term satisfactory system performance.

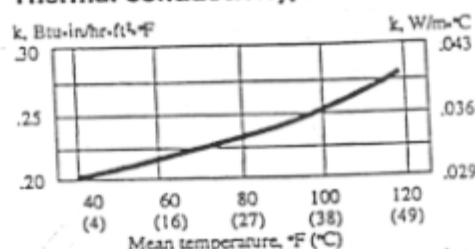
Physical property data

Property	Test Method	Specification
Operating temperature limits	UL 181	Internal: 250°F (121°C) External: 150°F (66°C)
Maximum air velocity	UL 181 (erosion test)	5,000 fpm (25.4 m/sec)
Static pressure limit	UL 181	± 2" WG (498 Pa)
Thermal performance	ASTM C 177	
at 75°F (24°C) mean		1" (25mm) 1½" (38mm)
R-value, hr·ft²·°F/Btu (m²·°C/W)		4.3 (0.8) 6.5 (1.1)
k-value, Btu-in/hr·ft²·°F (W/m·°C)		0.23 (0.033) 0.23 (0.033)
C-value, Btu/hr·ft²·°F (W/m²·°C)		0.23 (1.3) 0.16 (0.9)
Water vapor sorption	ASTM C 1104	<3% by weight at 120°F (49°C), 95%RH
Mold growth	UL 181	Will not support or promote
Sound absorption	ASTM C 423	1" (25mm), Type A Mtg.: NRC = 0.70
Surface burning characteristics	UL 723*	Flame spread 25,* smoke developed 50
Fire Retardancy	UL 181	Flame penetration: 30 minutes

*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.



Thermal conductivity, ASTM C 177



Mean temperature is the average of two temperatures: that of the air inside the duct and that of the ambient air outside it. Apparent thermal conductivity values are nominal, and are subject to normal testing and manufacturing tolerances.

Bacterial / fungal growth resistance

EnDuraCoat Duct Board resists fungal or bacterial growth when subjected to microbial attack as described in ASTM C 665 and standard practices ASTM G 21 (fungus test) and G 22 (bacteria test).

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EnDuraCoat™ Duct System

Acoustical performance

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

Sound absorption coefficients, Hz

Type 475, 1" (25mm) thick

125	250	500	1000	2000	4000	NRC
.07	.23	.68	.94	1.03	1.02	.70

Limitations

Fiberglas EnDuraCoat duct systems 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) Vertical risers in duct systems serving more than two stories in height; (G) With equipment of any type which does not include automatic maximum temperature controls; (H) 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; (J) When the 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 *Fiberglas* EnDuraCoat 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 Standard*. 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 1 Air Duct Rating.

1. Pressure sensitive tape

- Any tape listed and labeled under UL 181A, Part 1 (P).
- All longitudinal and circumferential joints must be stapled with outward flaring $\frac{1}{2}$ " (13mm) (min.) staples approximately 2" (51mm) O.C.
- Wipe surface with clean cloth where tape is to be applied to field joints. If surface has grease or oil, saturate cloth with approved solvent. Refer to tape manufacturer's recommendations.
- Center tape over edge of stapling flap and rub firmly in place immediately after application, using a squeegee or similar tool.
- A heat sealing iron must be used to assure a good bond when installed below 50°F (10°C).
- Tape should not be applied to surface of duct board when temperature is below 32°F (0°C) due to the possible entrapping of ice crystals which will loosen tape upon melting. Heat surface first to drive off moisture.

2. Heatsealable tape

- Any tape meeting listed closure requirements of UL 181A, Part 2 (H).
- All longitudinal and circumferential joints must be stapled with outward flaring $\frac{1}{2}$ " (13mm) (min.) staples approximately 2" (51mm) O.C.
- Wipe surface with clean cloth where tape is to be applied. If surface has grease or oil, saturate cloth with approved solvent.
- 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.

- Press down entire length of tape to hold in place with a smearing action to get good bond. Green dots on tape darken when satisfactory bonding temperature is reached.
- Staples may be omitted when automatic closure machines such as Glass Master Closemasters are used. Iron temperature must be set at 650°F (343°C) minimum. Continuous production may require periodic pauses to allow sealing iron to recover to 650°F (343°C).
- Allow joint to cool before stressing.

3. Mastic and glass fabric

- (1) Any mastic and glass fabric closure system listed under UL 181A, Part 3 (M).
(2) Cadoprene 725.
- All longitudinal and circumferential joints must be stapled with outward flaring $\frac{1}{2}$ " (13mm) (min.) staples, approximately 2" (51mm) O.C.
- Brush mastic onto joint and embed glass fabric in mastic.
- Brush second coat of mastic over fabric until completely filled.
- Allow joints to dry for 24 hours before pressurizing system.

Tie Rod Reinforcement

Reinforcement of *Fiberglas* EnDuraCoat duct systems is required when internal static pressure loading in positive pressure systems would cause the duct board to deflect beyond specification limits.

Reinforcement is most often accomplished by means of tie rods secured to the duct board with galvanized steel washers. Sheet metal channel reinforcement is also used, and must be used when negative pressure systems must be reinforced.

For complete fibrous glass duct system reinforcement specifications and fabrication details, refer to Section 4, *Fibrous Glass Duct Construction Standard*, published by the North American Insulation Manufacturers Association (NAIMA). Request Publication #AH-116.



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Pub. No. 3MS-19910 Printed in USA, July, 1995
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SUPPLEMENTAL MARKING:

Clearance to Combustibles

Clearance reduction system may be employed with Models ND, NFR, or NELS when marked minimum vertical clearance of 33 in. from the cooking appliance to the lowermost front edge of the hood.

Construction A - When Clearance to Combustible Reduction System construction is employed, as described in this Section and by Ill. 38, Construction A, the hood may also bear a separate label with the following wording:

"Hood Clearance to Combustibles, Rear = 0 in. (See Installation Instructions).

Front, Top, and Sides Hood Clearances To Combustibles To Be In Accordance with NFPA 96."

Construction B - When Clearance to Combustible Reduction System is employed, as described in this Section and by Ill. 38, Construction B, the hood shall also bear a separate label with the following wording:

"Hood Clearance to Combustibles, Rear = 0 in. (See Installation Instructions). Stainless steel plate employed does not alter the combustible classification of the wall - consult local Authorities Having Jurisdiction.

Front, Top, and Sides Hood Clearances To Combustibles To Be In Accordance with NFPA 96."

INSTALLATION INSTRUCTIONS:

For Clearance to Combustibles:

Installation instructions for clearance to combustibles shall include Ill. 38 and the following wording:

Installation Instructions For Construction A - "When rear hood clearance is less than that specified by NFPA 96, a 1/8 in. thick bead of Dow Corning 732 sealant (supplied) shall be installed at the joint of the lowermost rear of the hood and the rear supply plenum."

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Installation Instructions For Construction B - "When rear hood clearance is less than that specified by NFPA 96, the hood shall be installed in a location with an 18 gage stainless steel (or equivalent in fire protection) plate against the rear wall, flush with the bottom of the hood, extending down below the level of the cooking surface(s) - consult local Authorities Having Jurisdiction. In addition, a 1/8 in. thick bead of Dow Corning 732 sealant (supplied) shall be installed at the joint of the lowermost rear of the hood and the top of the plate."

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