

Submittal Sheet



SOFT[®]R Aeroflex PLUS[®] Acoustical Duct Liner



Description

Owens Corning SOFT[®]R Aeroflex PLUS Acoustical Duct Liner is a bonded blanket of glass fibers designed to be installed inside sheet metal ductwork and plenums with metal fasteners and adhesives. Their smooth, fire-resistant airstream surfaces resist damage during installation and in service. SOFT[®]R Aeroflex PLUS Acoustical Duct Liner complies with requirements of National Fire Protection Association Standards NFPA 90A and 90B, qualifying it under other model codes.

SOFT[®]R Aeroflex PLUS Acoustical Duct Liner is available in a selection of densities and thicknesses to meet specific system thermal and acoustical performance requirements (see availability table at right). Rolls are sized to run efficiently on modern automatic coil lines. A tough, coated, flame-retardant airstream surface with an EPA registered biocide that stands up to gouging and other abuse in the shop and on the way to the job-site, and contributes to reliable long-term service at internal air velocities up to 6,000 fpm (30.5 m/s). The factory applied edge coating complies with industry standards requiring treated transverse joints.

Uses

SOFT[®]R Aeroflex PLUS Acoustical Duct Liner enhances indoor environmental quality by absorbing noise within sheet metal ducts, also contributing to indoor comfort by lowering heat loss or gain through duct walls.

Features and Benefits

Bacterial and Fungal Growth Resistance

An EPA registered biocide in the fiber glass mat 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

When installed in accordance with instructions so that compression is controlled. SOFT[®]R Aeroflex PLUS Acoustical Duct Liner provides specified thermal performance. See R-value table below. Operating costs are controlled due to reduction of heat loss or gain through duct walls.

Acoustically Efficient

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

Availability

SOFT[®]R Aeroflex PLUS Acoustical Duct Liner is available in the following combinations of thicknesses and types: R-values, hr•ft²•°F/Btu (RSI, m²•°C/W)

Product Type and Thickness	Density, pcf (kg/m ³)	0.5 in (13 mm)	1 in (25 mm)	1.5 in (38 mm)	2 in (51 mm)
Type 150	1.5 (24)	—	3.6 (0.63)	5.4 (0.95)	7.1 (1.25)
Type 200	2.0 (32)	1.9 (0.32)	3.8 (0.67)	5.8 (1.02)	7.7 (1.36)
Type R-6	2.75 (44)	—	—	6.0 (1.06)	—
Type 300	3.0 (48)	2.1 (0.37)	4.2 (0.74)	—	—

Popular roll widths are standard products. Other widths can be made to order.

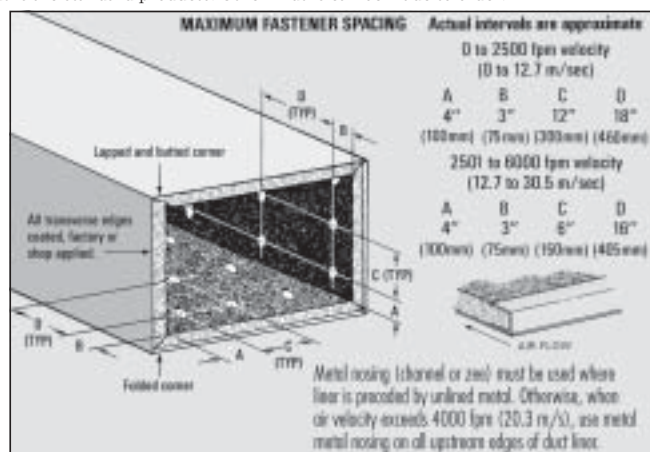
Application Recommendations

All portions of duct designated to receive SOFT[®]R Aeroflex PLUS Acoustical 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 4,000 fpm (20.3 m/s). The black coated surface of the duct liner shall face the airstream.

SOFT[®]R Aeroflex PLUS Acoustical 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 illustration.

Duct liner shall be cut to assure over-lapped 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.



SOFTR™ Aeroflex PLUS® Acoustical Duct Liner

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

SOFTR™ Aeroflex PLUS Acoustical Duct Liner complies with property requirements of NFPA 90A/90B and ASTM C 1071, Type I, Flexible. (ASTM C 1071 replaces obsolete Federal Specification HH-I-545B.)

Application Limitations

Use of SOFTR™ Aeroflex PLUS Acoustical 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.

Typical Physical Properties

Property	Test Method	Value
Operating temperature	ASTM C 411	250°F (121°C)
Maximum air velocity	UL 181 Erosion Test	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 (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•ft ² •°F (W/m•°C)
Type 150		0.28 (0.040)
Type 200		0.26 (0.038)
Type R-6		0.25 (0.036)
Type 300		0.24 (0.035)
Surface burning characteristics	UL 723,** or CAN/ULC-S102-M**	Flame spread 25** Smoke developed 50

* When wet, coated surfaces of SOFTR™ Aeroflex PLUS Acoustical Duct Liner in contact with galvanized steel may cause discoloration of the sheet metal.

** The surface burning characteristics of these products have been determined in accordance with UL 723 or CAN/ULC-S102-M. 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.

Acoustical Performance

Tested Values - SOFTR™ Aeroflex PLUS Acoustical Duct Liner

Sound absorption coefficients at octave band center frequencies (Hz)

Product	Thickness in (mm)	Thickness							NRC
		125	250	500	1000	2000	4000		
Type 150	1.0 (25)	.15	.25	.45	.68	.79	.81	.55	
	1.5 (38)	.16	.36	.61	.83	.90	.92	.70	
	2.0 (51)	.20	.53	.79	.94	.95	.97	.80	
Type 200	0.5 (13)	.10	.15	.27	.49	.66	.77	.40	
	1.0 (25)	.11	.28	.49	.70	.81	.86	.55	
	1.5 (38)	.16	.41	.71	.90	1.01	.93	.75	
	2.0 (51)	.20	.55	.87	1.00	.95	.95	.85	
Type R-6	1.5 (38)	.14	.41	.80	.97	1.01	.94	.80	
Type 300	0.5 (13)	.08	.16	.30	.51	.69	.84	.40	
	1.0 (25)	.07	.26	.54	.85	.96	.90	.65	

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 ²	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	0.3	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 (ft²). Example: 12" x 12", P/A = 4 (1/ft). For more information, call your Owens Corning Representative.



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