



## AKOUSTI-LINER R™

Temperature Limit: 250° F (121° C)

### DESCRIPTION

Akousti-Liner R insulation is a heavy density fiberglass board insulation product made from inorganic glass fibers bonded by a thermosetting binder. Its base board is brown with a black mat facing on the airstream surface.

### ECOSE® TECHNOLOGY

ECOSE Technology is a revolutionary binder chemistry that enhances the sustainability of our products. The “binder” is the bond that holds our fiberglass product together and gives the product its shape and brown color. ECOSE Technology is a plant-based, sustainable chemistry that replaces the phenol/formaldehyde (PF) binder traditionally used in fiberglass products. Products using ECOSE Technology are formaldehyde-free and have reduced global warming potential when compared to our products of the past.

### SUSTAINABILITY

Manson Insulation’s products used for thermal insulating purposes recover the energy that it took to make them in just hours or days, depending on the application. Once installed, the product continues to save energy and reduce carbon generation as long as it is in place.

Fiberglass insulation with ECOSE Technology contains three key ingredients:

- Recycled glass content, verified annually by UL Environment
- Sand, one of the world’s most abundant resources
- Our green chemistry initiative ECOSE Technology, which is validated to be formaldehyde-free

### APPLICATION

Manson Insulation Akousti-Liner R insulation is a premium, extra durable rigid liner for use on flat duct surfaces. Some typical applications include fan plenums and air distribution ducting on industrial and commercial heating, ventilating and air-conditioning systems.

### INSTALLATION

All duct liner shall be installed in accordance with the requirement of the NAIMA Fibrous Glass Duct Liner Standard or SMACNA HVAC

Duct Construction Standard and the project specification. Liner shall be adhered with adhesive (complying with ASTM C916) and mechanical fasteners.

### LIMITATION

Duct liner should be kept clean and dry during shipping, storage, installation and system operation. When condensation is permitted to occur between nested liner and galvanized steel panels, discoloration of the metal may occur.

### SPECIFICATION COMPLIANCE

- ASTM C1071; Type II
- NFPA 90A and NFPA 90B
- CGSB 51.11-92
- ASHRAE 62

### PRODUCT FEATURES

- Does not contain polybrominated diphenyl ethers (PBDE) such as Penta – BDE, Octa – BDE or Deca – BDE
- Airstream surface mat facing is treated with an EPA-registered anti-microbial agent to aid in the prevention of fungal and bacterial growth

### UL Environment

- GREENGUARD certified
- GREENGUARD Gold certified
- Validated to be formaldehyde-free

### EUCEB

- Tested and certified to meet EUCEB requirements

### FIBERGLASS AND MOLD

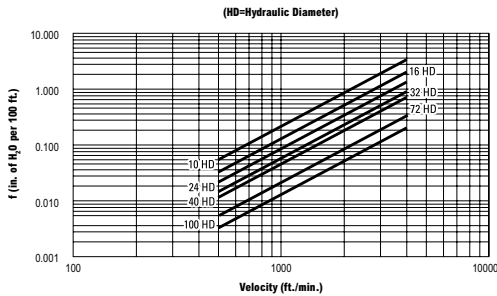
Fiberglass insulation will not sustain mold growth. However, mold can grow on almost any material when it becomes wet and contaminated. Carefully inspect any insulation that has been exposed to water. If it shows any sign of mold, it must be discarded. If the material is wet but shows no evidence of mold, it should be dried rapidly and thoroughly. If it shows signs of facing degradation from wetting, it should be replaced. Air handling insulation used in the air stream must be discarded if exposed to water.

## NOTES

The chemical and physical properties of Manson Insulation Akousti-Liner R insulation represent average values determined in accordance with accepted test methods. The data is subject to normal manufacturing and testing variations. The data is supplied as a technical service and is subject to change without notice. References to numerical flame spread ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

Check with your Manson Insulation Area Manager to ensure information is current.

## FRICITION LOSS (INCHES OF WATER PER 100')



FT./MIN.	HYDRAULIC DIAMETER						
VELOCITY	10"	16"	24"	32"	40"	72"	100"
500	0.056	0.031	0.018	0.013	0.010	0.005	0.003
600	0.080	0.044	0.026	0.018	0.014	0.007	0.004
700	0.108	0.059	0.035	0.025	0.019	0.009	0.006
800	0.140	0.077	0.046	0.032	0.024	0.012	0.008
900	0.176	0.096	0.058	0.040	0.031	0.015	0.010
1000	0.216	0.118	0.071	0.050	0.038	0.018	0.012
2000	0.845	0.463	0.278	0.194	0.147	0.071	0.048
3000	1.887	1.034	0.620	0.432	0.328	0.159	0.106
4000	3.340	1.831	1.097	0.765	0.580	0.281	0.188
5000	5.206	2.854	1.710	1.193	0.904	0.438	0.293

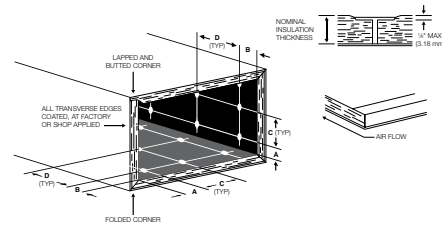
## ACOUSTICAL PERFORMANCE | ASTM C423, TYPE A MOUNTING

DENSITY	THICKNESS	FREQUENCY (Hz)						
		125	250	500	1000	2000	4000	NRC
3.0 PCF (48 kg/m³)	1" (25 mm)	0.13	0.24	0.56	0.83	0.92	0.98	0.65
	1½" (38 mm)	0.19	0.41	0.89	1.02	1.03	1.04	0.85
	2" (51 mm)	0.33	0.67	1.07	1.07	1.03	1.06	0.95

NOTE: ASHRAE Handbook for HVAC Applications – Sound and Vibration Control contains insertion loss values for lined sheet metal ducts.

## MECHANICAL FASTENER LOCATION

VELOCITY/FT./MIN. (M/SEC.)	0-255 (0-12.7)	2501-5000 (12.7-25.4)
A. From corners of duct	4" (102 mm)	4" (102 mm)
B. From transverse of duct	3" (76 mm)	3" (76 mm)
C. Across width of duct, on centers (min. 1/side)	12" (305 mm)	6" (152 mm)
D. Across length of duct, on centers (min. 1/side)	18" (457 mm)	16" (406 mm)



## TECHNICAL DATA

PROPERTY (UNIT)	TEST	PERFORMANCE
Air Velocity	ASTM C1071; Type II	Max. 5,000 ft./min. (25.4 m/sec.) Tested 12,500 ft./min. (63.5 m/sec.)
Water Vapor Sorption (by weight)	ASTM C1104	Less than 3%
Microbial Growth	ASTM C1338, ASTM G21, ASTM G22	Pass
Surface Burning Characteristics (flame spread/ smoke developed)	ASTM E84, UL 723, CAN/ULC S102	UL/ULC Classified FHC 25/50

## THERMAL PERFORMANCE | ASTM C177 MEAN TEMPERATURE 75° F (24° C)

DENSITY	THICKNESS	C-VALUE <sup>1</sup>		R-VALUE <sup>2</sup>	
		BTU/ FT <sup>2</sup> · HR · °F	W/ M <sup>2</sup> · °C	FT <sup>2</sup> · HR · °F/ BTU	M <sup>2</sup> · °C/ W
3.0 PCF (48 kg/m³)	1" (25 mm)	0.23	1.31	4.3	0.76
	1½" (38 mm)	0.15	0.85	6.5	1.15
	2" (51 mm)	0.11	0.62	8.7	1.53

<sup>1</sup>The lower the value, the better the performance.

<sup>2</sup>The higher the value, the better the performance.