Johns Manville
A Berkshire Hathaway Company

HVAC INSULATION

MICRO-AIRE® DUCT BOARD TYPE LP

DUCT SYSTEMS FOR MANUFACTURED AND MODULAR HOUSING

DESCRIPTION

Micro-Aire Duct Board Type LP (low pressure) is produced from strong glass fibers, bonded with a thermosetting resin. Type LP Board offers excellent thermal and acoustical benefits in air distribution systems. The exterior surface of the duct board is laminated with a fire-resistant FSK (foil-scrim-kraft) facing.

USES

Micro-Aire Duct Board Type LP is designed for use in HVAC systems for manufactured and modular housing. Type LP duct board provides quiet, economical and energy-efficient solutions for these air handling systems.

STORAGE

Micro-Aire Duct Board Type LP should be kept clean and dry during storage, transport, fabrication, installation, and system operation.

FACING INFORMATION

Permeance: 0.02 perms*

**Per ASTM E96, Procedure A for facing material prior to lamination. After lamination, permeance values may be higher.*

GENERAL PROPERTIES

Operating temperature (max.) – ASTM C411	250°F (121°C)
Air velocity (max.) – ASTM C1071	2000 fpm (10.2 m/sec.)
Internal pressure (max.) – UL 181	0.75" w.c. (187 Pa)
Fungi resistance – ASTM C1338	Does not breed or promote
Fungi resistance – ASTM G21	No growth
Bacteria resistance – ASTM G22	No growth

STANDARD THICKNESSES AND PACKAGING

To facilitate cost-effective fabrication and installation, Micro-Aire Type LP duct board is available in cartons or on pallets.

Size		Thickness	
in	mm	in	mm
48 x 120	1,219 x 3,048	$^{13}/_{16}$	20

SURFACE BURNING CHARACTERISTICS

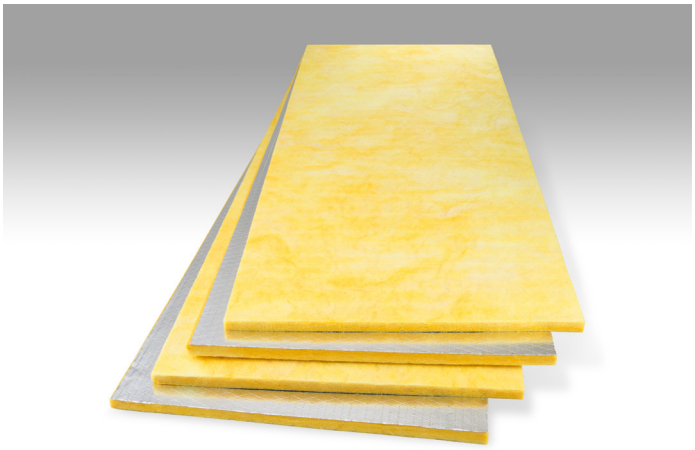
Micro-Aire Duct Board Type LP insulation meets the Surface Burning Characteristics and Limited Combustibility of the following standards:

Standard/Test Method
- ASTM E84
- UL 723
- NFPA 90A and 90B
- Canada: CAN/ULC S102

Maximum Flame Spread Index	25
Maximum Smoke Developed Index	50

SPECIFICATION COMPLIANCE

- UL 181 Class 1 Rigid Air Duct Listed
- ICC Compliant
- MEA# 237-86-M
- Universal Building Code (UBC)
- International Mechanical Code (IMC)
- Canada: CGSB 51.10-92 and CAN/ULC-S110M



ADVANTAGES

Quiet Operation. Micro-Aire Duct Board Type LP duct system features exceptional noise-absorbing characteristics. Fabricated Micro-Aire Duct Board Type LP duct systems noticeably decrease the audibility of crosstalk, equipment noise and the sounds associated with the expansion and contraction of sheet metal systems.

Will Not Support Microbial Growth. Micro-Aire Type LP duct board passes UL 181 mold growth resistance testing. Tests were conducted in accordance with ASTM C1338 and ASTM G21 (fungi testing) and ASTM G22 (bacteria resistance testing). Detailed information is available in Johns Manville fact sheet HSE-103FS.

Note: As with any type of surface, microbial growth may occur in accumulated duct system dirt, given certain conditions. This risk is minimized with proper design, filtration, maintenance and operation of the HVAC system.

Cleanability. If cleaning is necessary, the airstream surface may be cleaned using standard industry-recognized dry methods. See the North American Insulation Manufacturers Association (NAIMA) "Cleaning Fibrous Glass Insulated Air Duct Systems."

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CLOSURE SYSTEMS

In order to meet the requirements of UL 181 for a Class 1 Air Duct System, closures meeting the requirements of UL 181A must be used with Micro-Aire Duct Board Type LP insulation. For additional fabrication instruction information, reference AHS-30 or NAIMA Fibrous Glass Duct Construction Standards (www.naima.org).

CLOSURE I

UL 181A-H Closures

Use tapes listed and labeled in accordance with Standard UL 181A and marked "181A-H." Tapes in compliance with this standard must be imprinted with this information. Heat seal all longitudinal and circumferential joints according to tape manufacturers' recommendations. Center strip over the edge of stapling flap. Staples are not required when automatic closure equipment is used for the longitudinal joint.

CLOSURE II

UL 181A-P Pressure Sensitive Tapes

Use tapes listed and labeled in accordance with Standard UL 181A and marked "181A-P." Tapes in compliance with this standard must be imprinted with this information.

Use tape that is a minimum 1" (25 mm) wider than the thickness of the board. Apply to all longitudinal and circumferential joints and rub in carefully using a squeegee or similar tool. The tape should be rubbed in until the scrim pattern from the duct board facing shows through the tape. Center tape over the edge of stapling flap. Heat seal if temperature is below 40°F (4°C).

CLOSURE IV

UL 181A-M Mastic Closure

Use mastics listed and labeled in accordance with Standard UL 181A and marked "181A-M." Before applying, stir the mastic thoroughly. Brush on a 4" (102 mm) wide coating over the stapled flap. Embed the open mesh glass tape in the mastic. Apply an additional coat of mastic over the tape, filling in the mesh.

LIMITATION OF LIABILITY

If the closure system used is not one of the approved systems noted above, and if application is not in accordance with the tape or glass fabric and mastic manufacturer's stated procedures, the UL 181 Class 1 air duct rating and the Johns Manville product warranty are void.

MAXIMUM UNREINFORCED DUCT DIMENSIONS

	Internal Pressure in. water column	Positive inches	Negative inches
Type LP	0.50	20	12
	0.75	20	–
	Internal Pressure Pa	**Positive mm**	**Negative mm**
Type LP	125	508	805
	188	508	–

THERMAL CONDUCTIVITY

Thickness		Mean Temp. @ 75°F (24°C)	
in	mm	Btu•in/(hr•ft²•°F)	W/m•°
13/16	20	0.23	0.033

Conductivity per ASTM C518.

THERMAL PERFORMANCE

Thickness		R-Value	
in	mm	(hr•ft²•°F)/Btu	m²•°C/W
13/16	20	3.50	0.62

MICRO-AIRE DUCT BOARD TYPE LP SOUND ABSORPTION COEFFICIENTS

(Type "A" Mounting)

	Thickness		Sound Absorption Coefficient at Frequency (Cycles per Second) of:						
Type	in	mm	125	250	500	1000	2000	4000	NRC
LP	13/16	20	0.07	0.23	0.49	0.79	0.94	1.03	0.60

Coefficients were tested in accordance with ASTM C423 and ASTM E795.

ISO 9000 CERTIFICATION

Johns Manville commercial and industrial insulation products are designed, manufactured and tested in our own facilities, which are certified and registered to stringent ISO 9000 (ANSI/ASQC 90) series quality standards. This certification, along with regular, independent third-party auditing for compliance, is your assurance that Johns Manville products deliver consistent high quality.

Johns Manville
A Berkshire Hathaway Company

717 17th St.
Denver, CO 80202
800-654-3103
www.JM.com

North American Sales Offices, Insulation Systems

Eastern Region and Canada
P.O. Box 158
Defiance, OH 43512
800-334-2399
Fax: 419-784-7866

Western Region
P.O. Box 5108
Denver, CO 80217
800-368-4431
Fax: 303-978-4661

The physical and chemical properties of Micro-Aire® Duct Board Type LP listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to ensure current information

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