



Johns Manville

HVAC Insulation

Mat-Faced Micro-Aire®

Fiber Glass Duct Board Type 475 & Type 800

Description

Mat-Faced Micro-Aire® duct board is produced from strong glass fibers, bonded with a thermosetting resin. The airstream side of Mat-Faced Micro-Aire duct board features a black fiber glass mat, which minimizes visibility of the duct system at supply air and return air outlets while providing excellent strength in high-velocity conditions. The exterior surface features a fire-resistant foil-scrim-kraft facing extending the full width of the male edge to serve as an integral closure flap for section joints.

Mat-Faced Micro-Aire duct board is molded with double-density, male/female edges for secure connections.

Uses

Mat-Faced Micro-Aire duct board is ideal for fabrication into rectangular ductwork for use in heating, ventilating and air-conditioning systems in new commercial or residential construction, or for renovating older sheet metal systems.

General Properties

Operating temperature (max.) – ASTM C411	250°F (121°C)
Air velocity (max.) – ASTM C1071	5000 fpm (25.4 m/sec.)
Internal pressure (max.) – UL 181	2" w.c. (498 Pa)
Fungi resistance – ASTM C1338	Does not breed or promote
Fungi resistance – ASTM G21	No growth
Bacteria resistance – ASTM G22	No growth
Water vapor transmission – ASTM E96	< 0.02 Perms
Water vapor sorption – ASTM C1104	< 5% by weight

Standard Thicknesses and Packaging

To facilitate cost-effective fabrication and installation, Mat-Faced Micro-Aire duct board is available in cartons or on pallets in several size configurations. (1½" [38 mm] and 2" [51 mm] thickness available as Type 800 only.)

Size		Thickness	
in	mm	in	mm
48 x 120	1219 x 3048	1, 1½, 2	25, 38, 51
96 x 120*	2438 x 3048*	1, 1½	25, 38

*Wide Board™ available on pallets only.

Note: 48" x 96" x 1" (1219 mm x 2438 mm x 25 mm) size available on a Special Product Price Inquiry (SPPI) basis only.

Surface Burning Characteristics

Mat-Faced Micro-Aire meets the Surface Burning Characteristics and Limited Combustibility of the following standards:

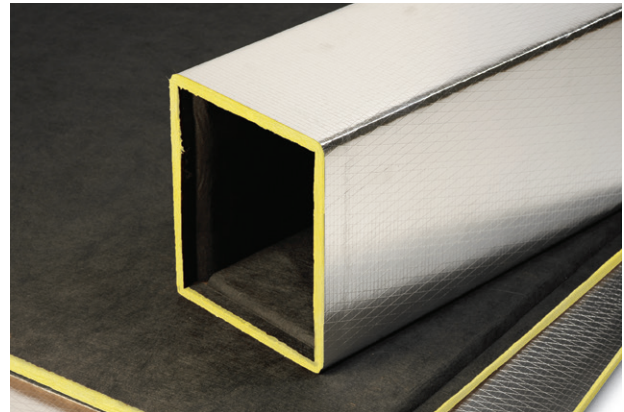
Standard/Test Method

- ASTM E84
- UL 723
- NFPA 90A and 90B
- Canada: CAN/ULC S102-M88

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

Durable Airstream Surface. Mat-Faced Micro-Aire exhibits superior toughness compared to standard fiber glass duct board. It provides increased resistance to damage that can occur from in-shop handling, fabrication, jobsite shipping and installation.

Low Resistance to Air Flow. Mat-Faced Micro-Aire duct board has a smooth interior surface that offers minimal resistance to air flow. Air friction data is available from your Johns Manville representative by requesting AHS-165.

Quiet Operation. Fabricated Mat-Faced Micro-Aire duct systems noticeably decrease the audibility of crosstalk, equipment noise, and eliminate the sounds associated with the expansion and contraction of sheet metal duct systems.

Will Not Support Microbial Growth. The airstream surface of Mat-Faced Micro-Aire duct board is treated with an antimicrobial agent specifically registered with the EPA for HVAC applications to resist potential growth of fungus or bacteria on the airstream surface.

Mat-Faced Micro-Aire 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."

"Friendlier Feel." The smooth mat facing creates a friendlier surface for fabrication and installation, and reduces exposure to normal construction dust.

Flexural Rigidity

Mat-Faced Micro-Aire duct board is available in stiffness values of 475 and 800 EI. The stiffness or flexural rigidity is the product of Young's Modulus of Elasticity (E) and the Moment of Inertia (I), as determined in accordance with NAIMA AHC-100-74 (REF, ASTM D1037).

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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 Mat-Faced Micro-Aire. 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.

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Maximum Unreinforced Duct Dimensions

Thickness	Internal Pressure in. water column	Positive inches	Negative inches
Type 475 1"	0.5	36	34
	1.0	24	22
	2.0	15	14
Type 800 1½", 2"	0.5	40	38
	1.0	26	22
	2.0	18	16

Thickness	Internal Pressure Pa	Positive mm	Negative mm
Type 475 25 mm	125	914	864
	249	610	559
	498	381	356
Type 800 38, 51 mm	125	1016	965
	249	660	610
	498	457	407

This table summarizes span/pressure limitations for unreinforced duct. For larger duct sizes, see The Pocket Installer, AHS-3.

Thermal Conductivity

Thickness		Mean Temp. @ 75°F (24°C)	
in	mm	Btu•in/(hr•ft²•°F)	W/m²
1	25	0.23	0.033
1½	38	0.23	0.033
2	51	0.23	0.033

Conductivity per ASTM C518.

Thermal Performance

Thickness		R-value	
in	mm	(hr•ft²•°F)/Btu	m²•°C/W
1	25	4.3	0.76
1½	38	6.5	1.15
2	51	8.7	1.53

Mat-Faced Micro-Aire Sound Absorption Coefficients (Type "A" Mounting)

Type	Thickness		Sound Absorption Coefficient at Frequency (Cycles per Second) of:						
	in	mm	125	250	500	1000	2000	4000	NRC
475	1	25	0.07	0.25	0.63	0.90	0.97	1.00	0.70
800	1½	38	0.10	0.42	0.91	1.04	1.04	1.04	0.85
800	2	51	0.17	0.63	1.10	1.05	1.04	1.06	0.95

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.

The physical and chemical properties of Mat-Faced Micro-Aire® Fiber Glass Duct Board 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.

All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy and information on other Johns Manville thermal insulation and systems, call (800) 654-3103.