

**DESCRIPTION**

Micro-Aire® duct board is produced from strong glass fibers, bonded with a thermosetting resin. The airstream side of 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 durability 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. Micro-Aire duct board is molded with double-density, male/female edges for secure connections.

**USES**

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.

**STORAGE**

Micro-Aire duct board should be kept clean and dry during storage, transport, fabrication, installation, and system operation.

**GENERAL PROPERTIES**

|  |                           |
|--|---------------------------|
| Operating temperature (max.) – ASTM C411 | 250°F (121°C)             |
| 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                 |
| Water vapor transmission – ASTM E96      | < 0.02 Perms              |
| Water vapor sorption – ASTM C1104        | < 5% by weight            |
| Air velocity (max.) – ASTM C1071         | 5000 fpm (25.4 m/sec.)    |
| No evidence of erosion*                  | 12,500 fpm (63.5 m/s)     |

\*ASTM C1071 requires that the insulation is tested to 2.5x the rated velocity and requires that the insulation shall not break away, crack, peel, flake off, or show evidence of delamination or continued erosion when air is passed through typical duct sections at 12,500 fpm (63.5 m/s).

**STANDARD THICKNESSES AND PACKAGING**

To facilitate cost-effective fabrication and installation, 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 96   | 1219 x 2438  | 1, 1½, 2  | 25, 38, 51 |
| 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. Please reference Purchase Guide for more information.

**SURFACE BURNING CHARACTERISTICS**

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

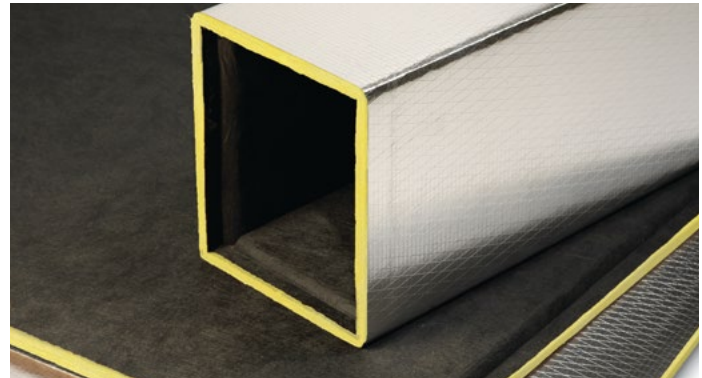
Standard/Test Method

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

|                               |    |
|-------------------------------|----|
| 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.** 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.** 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 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 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.

Micro-Aire duct board passes UL 181 mold growth resistance testing. Tests were conducted in accordance with ASTM C1338 and ASTM G21 (fungi 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.

**Shipped With E<sup>3</sup> Pallet® Technology:** The E<sup>3</sup> Pallet® is designed to simplify repurposing our 4x8' and 4x10' pallets into more functional, 48x48" and 48x40" pallets (respectively). See instructions on page 3.



**FLEXURAL RIGIDITY**

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).

Duct board is UL LISTED for UL 181  
Duct Board UL file: MH12358



**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. For additional fabrication instruction information, reference AHS-30 or NAIMA Fibrous Glass Duct Construction Standards ([www.naima.org](http://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.

**RECYCLED CONTENT**

AVERAGE 11% RECYCLED CONTENT  
POST-CONSUMER

**MAXIMUM UNREINFORCED DUCT DIMENSIONS**

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

| Thickness                    | Internal Pressure | Positive | Negative |
|------------------------------|-------------------|----------|----------|
|                              | Pa                | mm       | mm       |
| <b>Type 475</b><br>25 mm     | 125               | 914      | 864      |
|                              | 249               | 610      | 559      |
|                              | 498               | 381      | 356      |
| <b>Type 800</b><br>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   |
| 1         | 25                       | 0.23 |
| 1½        | 38                       | 0.23 |
| 2         | 51                       | 0.23 |

*Conductivity per ASTM C518.*

**THERMAL PERFORMANCE**

| Thickness | R-value |     |
|-----------|---------|-----|
|           | in      | mm  |
| 1         | 25      | 4.3 |
| 1½        | 38      | 6.5 |
| 2         | 51      | 8.7 |

**MICRO-AIRE SOUND ABSORPTION COEFFICIENTS****(TYPE "A" MOUNTING)**

| Type | Thickness |    | Sound Absorption Coefficient at Frequency |      |      |      |      |      |      |
|------|-----------|----|---|------|------|------|------|------|------|
|      | 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**

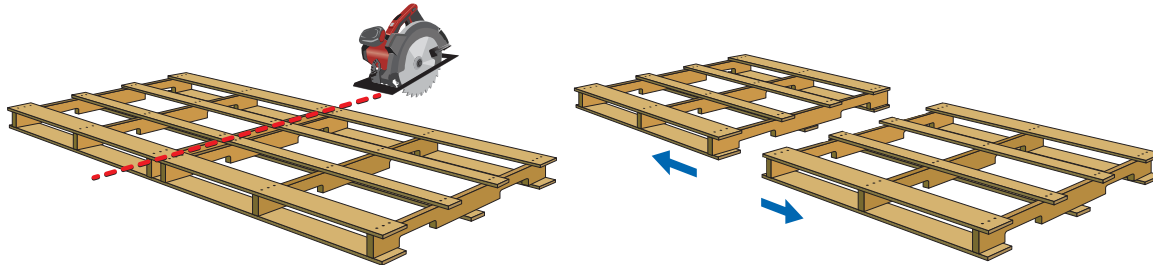
Johns Manville mechanical insulation products are designed, manufactured and tested in our own facilities, which are certified and registered to stringent ISO 9001:2015 series quality standards. This certification, along with regular, independent third-party auditing for compliance, is your assurance that Johns Manville products deliver consistent high quality.



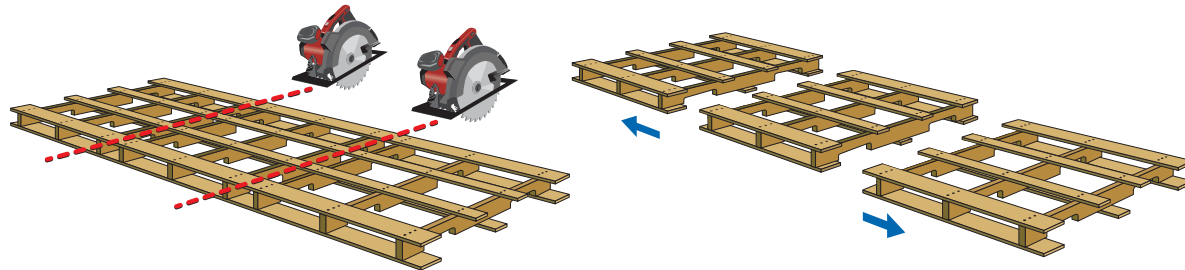
**E<sup>3</sup> PALLET® CUT DOWN INSTRUCTIONS**


The 4x8' E<sup>3</sup> Pallet® can be cut down into two 48x48" pallets, and the 4x10' E<sup>3</sup> Pallet® can be cut down into three 48x40" pallets. Simply use a circular saw to cut along the red dotted lines shown in the images below.

**4x8' E<sup>3</sup> PALLET®: TWO 48x48" PALLETS**



**4x10' E<sup>3</sup> PALLET®: THREE 48x40" PALLETS**



|   | 48x48" Cut Down | 48x40" Cut Down |
|---|-----------------|-----------------|
| Max Load Capacity (Evenly Distributed)  | 1,587 lbs*      | 2,885 lbs*      |
| Lateral Collapse Resistance  | 0.60*           | 0.70*           |

\*All pallets are subject to abuse, aging and normal wear and tear during use and storage. The data reported in this document represent initial performance of a new pallet after manufacture and do not take into account damage that may occur during handling and use of the pallets.



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**Western Region & Outside  
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Technical specifications as shown in this literature are intended to be used as general guidelines only. Please refer to the Safety Data Sheet and product label prior to using this product. The physical and chemical properties of MicroAire 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. Any references to numerical flame spread or smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions.

**All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions, which includes a Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions or for information on other Johns Manville thermal insulation and systems, visit [www.jm.com/terms-conditions](http://www.jm.com/terms-conditions) or call (800) 654-3103.**